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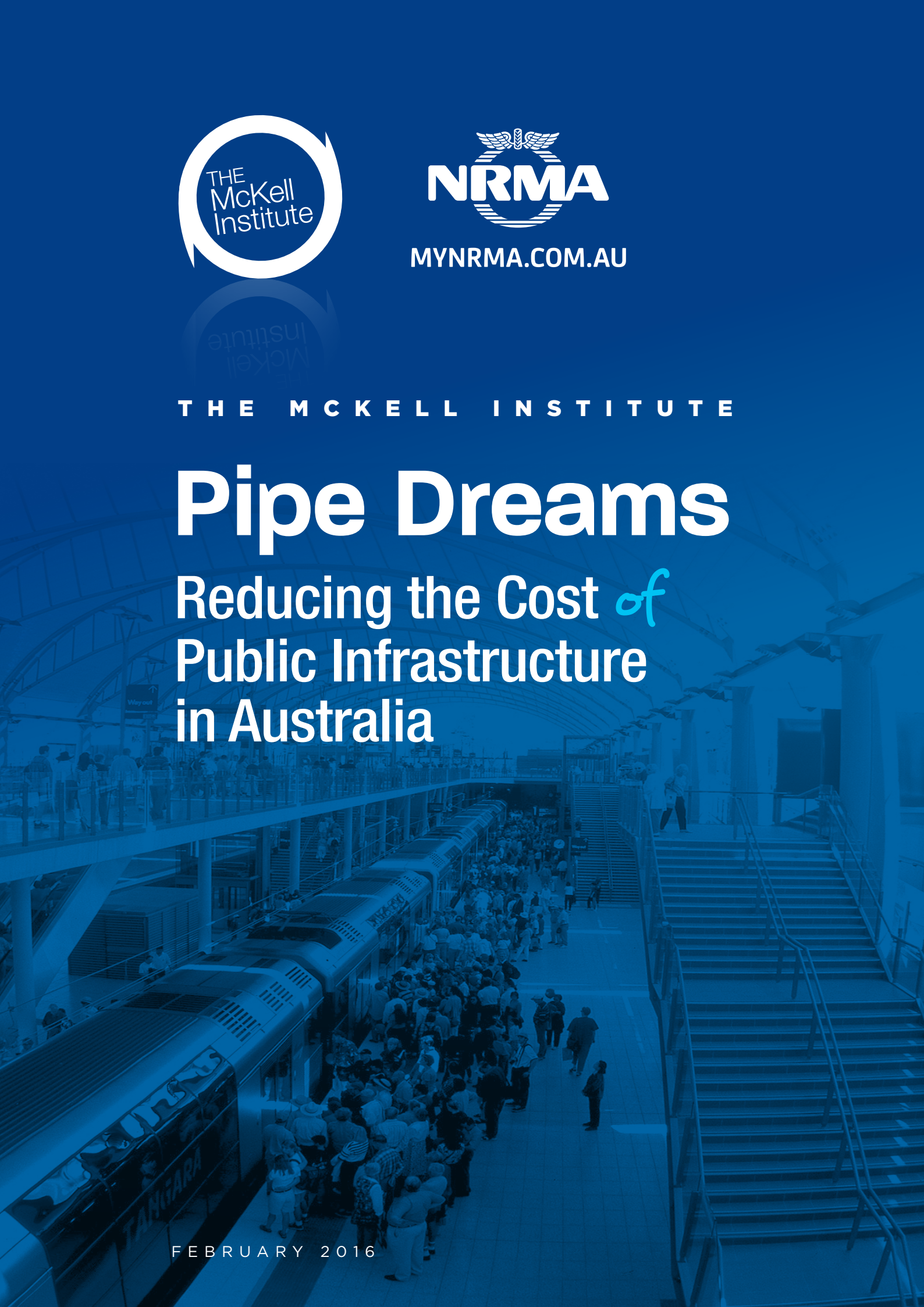
Pipe Dreams

Reducing the Cost of Public Infrastructure in Australia



FEBRUARY 2016

About the McKell Institute

The McKell Institute is an independent, not-for-profit, public policy institute dedicated to developing practical policy ideas and contributing to public debate.

The McKell Institute's key areas of activity include producing policy research papers, hosting policy roundtable discussions and organising public lectures and debates.

The McKell Institute takes its name from New South Wales' wartime Premier and Governor–General of Australia, William McKell.

William McKell made a powerful contribution to both New South Wales and Australian society through progressive social, economic and environmental reforms.

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Contents

Foreword

Investment in vital infrastructure projects is central to the long-term growth and economic prosperity of Australia. However, the high price of infrastructure development within the country has the potential to negate economic windfalls that should otherwise result from necessary projects. Innovative solutions must be adopted to meet the infrastructure needs of a growing population, whilst ensuring the financial viability of essential nation building projects.

In November 2014, The McKell Institute released *Getting Us There: Funding the Transport Infrastructure of Tomorrow.*[1] The report provided a detailed analysis of the funding challenges infrastructure projects in Australia face, and how this critical funding deficit can be solved. Following on from Getting Us There, this report describes the key priority areas for reform that will reduce the overall costs of infrastructure and mitigate the challenges faced by the infrastructure funding shortfall in Australia.

Australia's growing population and the increased demand for services is placing a strain on public infrastructure, and there is a need to dramatically increase investment to meet this demand. Infrastructure Partnerships Australia and Citibank have put the amount of infrastructure investment required over the next decade at $700 billion, the Business Council of Australia at $450 billion to $700 billion, whilst Infrastructure Australia has provided a more conservative estimate of $300 billion over the next ten years.

The high capital costs associated with developing infrastructure projects are increasingly becoming a factor influencing limited investment in important projects. This report notes that it is 36 per cent more expensive to build a new, 2-lane undivided road in Australia than in the UK, whilst tunnelling for road and rail infrastructure is 26 per cent more expensive

As governments become more focused on balancing costs with declining revenue, long-term infrastructure investment will be increasingly judged by its impact on the budget bottom line as much as its benefit to the community.

The challenge for governments is to ensure the process for planning and approvals is as transparent and streamlined as possible, promoting domestic and international private sector investment, and ensuring community confidence. Limiting the politicisation of infrastructure development is also important, as inconsistency from government can minimise confidence surrounding long-term infrastructure strategies.

Better-defined, long-term planning processes can contribute to reducing the overall costs of projects, especially where the purchase of land is required. Australia's population will double to 46 million by 2075, with cities expected to absorb the majority of this increase. In addition, land value continues to rise with overall 20-year growth average for east coast capital cities being 7.56 per cent per annum. As the population density in cities increases and land values continue to rise,

it is imperative that governments initiate planning processes and land purchasing now to prevent these issues hampering the cost of future projects.

When considering the role that the private sector has to play in reducing the costs of infrastructure provision, it is clear that there are inefficiencies in the contracting process that should also be addressed. The over specification of tenders require a massive investment from the private sector in order to win contracts from procuring governments. These costs are quite often passed back to government in some form. Reform of tendering processes is needed to reduce the impact this has on the cost of the project.

The Australian infrastructure market could greatly benefit from increased labour mobility, as there are costs incurred in transferring Australian labour across jurisdictional boundaries and restricting this movement by overlapping regulation. Introducing consistent trade licensing regulation would increase mobility and labour supply, helping reduce the costs of labour by lowering demand.

This report offers recommendations that would enable vital new infrastructure to be delivered to the public in the most cost effective and equitable way. Utilising new funding models such as value capture, and better harnessing the value of existing or disused infrastructure corridors can significantly reduce the cost burden of infrastructure.

This report examines a number of areas where potential for efficiency has been identified. The aim of the recommendations is not to drastically overhaul procurement and construction processes in Australia, but to suggest practical methods by which cost efficiencies can best be achieved.

We thank the National Roads and Motorists' Association (NRMA) for their support in funding this important contribution to the public debate.

The Hon John Watkins
CHAIR,
MCKELL INSTITUTE

Sam Crosby
EXECUTIVE DIRECTOR,
MCKELL INSTITUTE

Executive Summary

More investment in infrastructure is required to ensure the needs of a growing Australian population are met. While some commentators lament the 'lost decade' of infrastructure development in Australia, there remain significant opportunities to invest and expand our infrastructure networks across the country. With the appropriate reforms, Australia now has an opportunity to increase the quality and affordability of vital infrastructure projects nationwide, invest in the future of the Australian economy, and become a world leader in infrastructure provision.

Building upon the findings in The McKell Institute's 2014 report, *Getting Us There: Funding the Infrastructure of Tomorrow*, this report analyses the high costs associated with efficient delivery of major infrastructure projects in Australia that have been an impediment to necessary investments. Long term project planning can be insufficient, construction and material costs can be high and governments often fail to best capitalise on new and existing infrastructure. In the case of Public-Private Partnerships (PPPs), too much time, effort and money is spent specifying the terms of the contract in lieu of delivering well designed projects.

Infrastructure in Australia is notably more expensive than comparable countries. It is estimated that a 2-lane undivided road in Australia costs 26 per cent more than in the UK, 42 per cent more than in the US, 53 per cent more than in Canada, and up to 78 per cent more than across the European Union. Tunnelling is estimated to be 26 per cent more costly in Australia than the UK, and 38 per cent more than in the US on average.

This report highlights a number of key areas that hold the potential for efficiency improvements to mitigate these high costs. The variety of policy options outlined could result in a significant reduction to the cost of public infrastructure provision for government, the private sector and the community as a whole.

This report identifies the positive impacts of consultative project planning and tables the problems with the inherently political nature of public infrastructure provision. A number of savings can be achieved by securing long-term plans

for infrastructure projects. More consistent and forward-thinking planning should be accompanied by innovative and engaging methods of public consultation. The use of metropolitan or regional referenda on a 20 year infrastructure plan, carried out over a roughly ten year cycle, could allow the community to be actively involved in setting the infrastructure agenda.

The combined effect of these measures assist in minimising the politicisation of major public infrastructure projects, helping to achieve bipartisan consensus and community support, ensuring certainty for potential private sector partners interested in becoming involved in infrastructure projects leading into the future.

The preservation of land corridors for major infrastructure projects is equally vital. The cost of surface land acquisition is high, as is the cost of subterranean tunnelling, but these costs could be minimised by ensuring that governments pre-emptively purchase and hold land that will be used for future projects. Such land could be utilised by the private sector on short-term leases, helping recoup the costs associated with acquisition and providing funding for the project when it is built.

This report then examines the potential for efficiencies to be achieved in the contract-tendering phase of projects. They present a suite of recommendations that aim to strengthen the PPP process by reducing costs and time associated with the tendering stage of projects.

This report outlines how to lower the direct costs of building infrastructure. It finds that Australian labour costs do not have a significant negative impact on the overall costs of production, but that higher labour costs in Australian infrastructure construction are influenced by the intermittent nature of infrastructure development, and the lack of labour mobility within the industry. One solution to this is a change to Australia's trade licensing system that aims to achieve a harmonised national framework allowing greater labour mobility. This report articulates two implementation models for this, based on models outlined by COAG in 2009. The aim of a national system is to facilitate the inexpensive and relative ease of labour moving around the country. Increased mobility will lead to lower overall labour costs, and less reliance on overseas labour.

The final priority area identified focuses on the potential to capitalise on new and existing infrastructure assets through capturing a portion of the increase in land value around new public infrastructure. This technique, called Value Capture, has been employed in the UK and USA for a number of years and has significant potential within the Australian context. The example of the a 2 per cent levy on London's new Cross Rail project provides a case study of this policy option in action, and this report discusses the potential of using a similar mechanism on one of Sydney's major new infrastructure projects, the Sydney Metro North West.

The suite of recommendations presented in this report aim to make the provision of major public infrastructure in Australia more innovative, efficient, better designed, better funded and, importantly, more affordable for both governments and the private sector.

Introduction

Building Infrastructure in Australia is Expensive

Efficient public infrastructure plays a vital role in supporting a competitive and productive economy. Beyond accommodating the needs of a growing population, the main goal of infrastructure is the long-term growth of the Australian economy. Infrastructure Australia has estimated the value-add to the Australian economy from the four key economic infrastructure sectors was $187 billion in 2011,[2] as in seen the table below. Therefore, the ongoing development of cost effective and affordable infrastructure in Australia is of vital importance to both government and the private sector.

While comparing road and rail costs is inherently difficult, in general, the cost of delivering infrastructure in Australia is much higher than in comparable countries.

To build a new 2-lane undivided road in Australia is estimated to cost:

- 36 per cent more than in the UK;
- 42 per cent more than in the US;
- 53 per cent more than in Canada,[3] and;
- 78 per cent more than an average of 29 countries in Europe.[4]

Tunnelling for road and rail infrastructure is estimated to cost:

- 26 per cent more in Australia than the UK, and
- 38 per cent more in Australia than the US.[5]

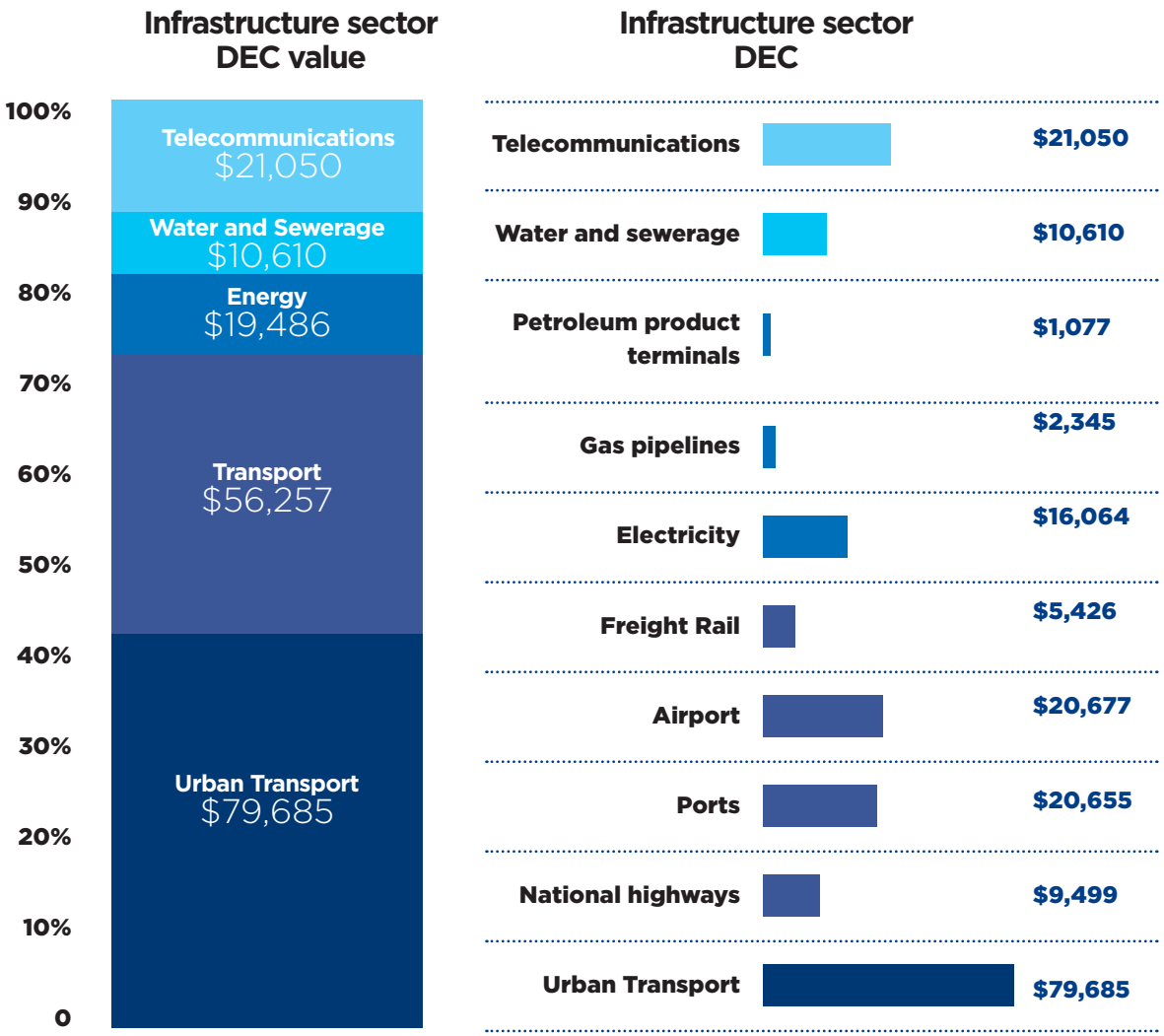
One example of the higher costs in Australian infrastructure provision is the Brisbane Cross River Rail Project. The Brisbane Cross River Rail project is estimated to be around US$215 million per km.* This compares to the London CrossRail project (another exceptionally complex urban heavy rail project) at US$180 million per km, the US North-East corridor line at US$166 million per km and the California High Speed Rail project at US$50 million per km.[6]

Minimising the costs of constructing public infrastructure in Australia is a challenge in today's economic climate. Numerous factors drive up costs throughout various jurisdictions, sectors and industries. The aim of infrastructure policy should be to aid in reducing these costs, whilst ensuring that policy measures do not negatively impact outputs.

This report identifies a number of priority areas that need to be addressed in order to bring down the cost of infrastructure procurement, development and delivery. Key factors influencing the cost of infrastructure are the costs incurred through the lack of a defined project pipeline, the costs associated with procurement for projects, costs incurred through labour and skills shortages, the impact of risk assessment on bidding costs and the cost incurred through poor forward planning and acquiring land for future projects. This report considers primarily transport infrastructure, and examines ways to reduce the costs of using public private partnerships (PPPs) to deliver these infrastructure projects.

* This statistic uses the most recent available data and our own analysis. All data has been adjusted for inflation and converted into USD using November 2015 exchange rates.

FIGURE 1.
SECTORAL DISTRIBUTION OF INFRASTRUCTURE'S VALUE-ADD
BY DIRECT ECONOMIC CONTRIBUTION (DEC) IN 2011 ($MILLION, 2011 PRICES).



Source: *ACIL Allen Consulting (2014a)*

Priority Areas for Reducing the Cost of Infrastructure in Australia

This report makes recommendations to alleviate cost pressures across five priority areas:

1. Streamlining the infrastructure development and delivery process

- **Depoliticising the planning and approvals process**
- **Using innovating methods of community engagement/consultation**
- **A well defined project pipeline with bipartisan and community support**

Stronger development pipelines would encourage further facilitation of private investment in transport infrastructure, lowering bid-tendering costs to the government and taxpayer. This would minimise the intermittent nature of infrastructure planning and development, aid in providing long-term career paths for skilled workers in the construction industry, and encourage long-term investment in producing highly skilled workers. Utilising methods that facilitate greater community input into the approval process would remove a political element that so often hampers the delivery and cost efficiency of major infrastructure projects.

2. Encourage more efficient and innovative forward planning processes

- **Acquire land corridors early for future projects**
- **Better utilisation of dormant land corridors**

Purchasing land well in anticipation of future infrastructure projects would significantly reduce costs, given the trend of land value growth and expected population forecasts. Further, this practice would demonstrate commitment and provide stability for private investors, as well as minimise delays in development. Once land has been acquired, there is scope and precedence for putting it to use in the interim by leasing it out to the private sector for a number of purposes such as communication lines or small-scale industry.

3. Address inefficiencies in the contract tendering process

- **Ensuring contract bids are not over specified**
- **Reducing the amount of bid phase design work required from bidders,**
- **Placing greater reliance on the project contract requirements,**
- **Conducting due diligence investigations (eg. geotechnical, contamination, heritage) for the benefit of all bidders, where this is more efficient.**

The aim of these options would be to decrease the level of capital, time and resources utilised in selecting a winning bidder whilst also increasing competition for involvement from the private sector.

4. Address skills shortages through harmonisation of licensing requirements.

- **Adopt a national trade licensing framework**
- **Establishment of a new national administration body**

The establishment of a national licensing framework for professions within the construction industry should be explored. It is important to ensure the framework is not based on lowest common-denominator principles, but creates a harmonised framework based on best industry practices, adopting these nationwide.

5. Capitalise on new and existing assets

- **Value capture**
- **Utilisation of transport corridors**

Government should explore the option of using value capture mechanisms to recoup a portion of the costs of funding of infrastructure projects and help contribute to the funding of further infrastructure development. Planning agencies should also ensure land surrounding rail corridors is developed suitably to maximise the economic value of newly developed infrastructure. Ideally this land would be a well balanced, mixed use area.

Labour Costs, Economy of Scale & Infrastructure In Australia

Construction Labour Costs in Australia Compared to the International Market

The findings of recent analyses of the costs of construction indicate that generally, labour costs are higher in Canada, another country currently suffering from an infrastructure spending deficit,[7] and the USA than they are in Australia, despite it being significantly more expensive to build a two lane divided road in Australia than those countries.

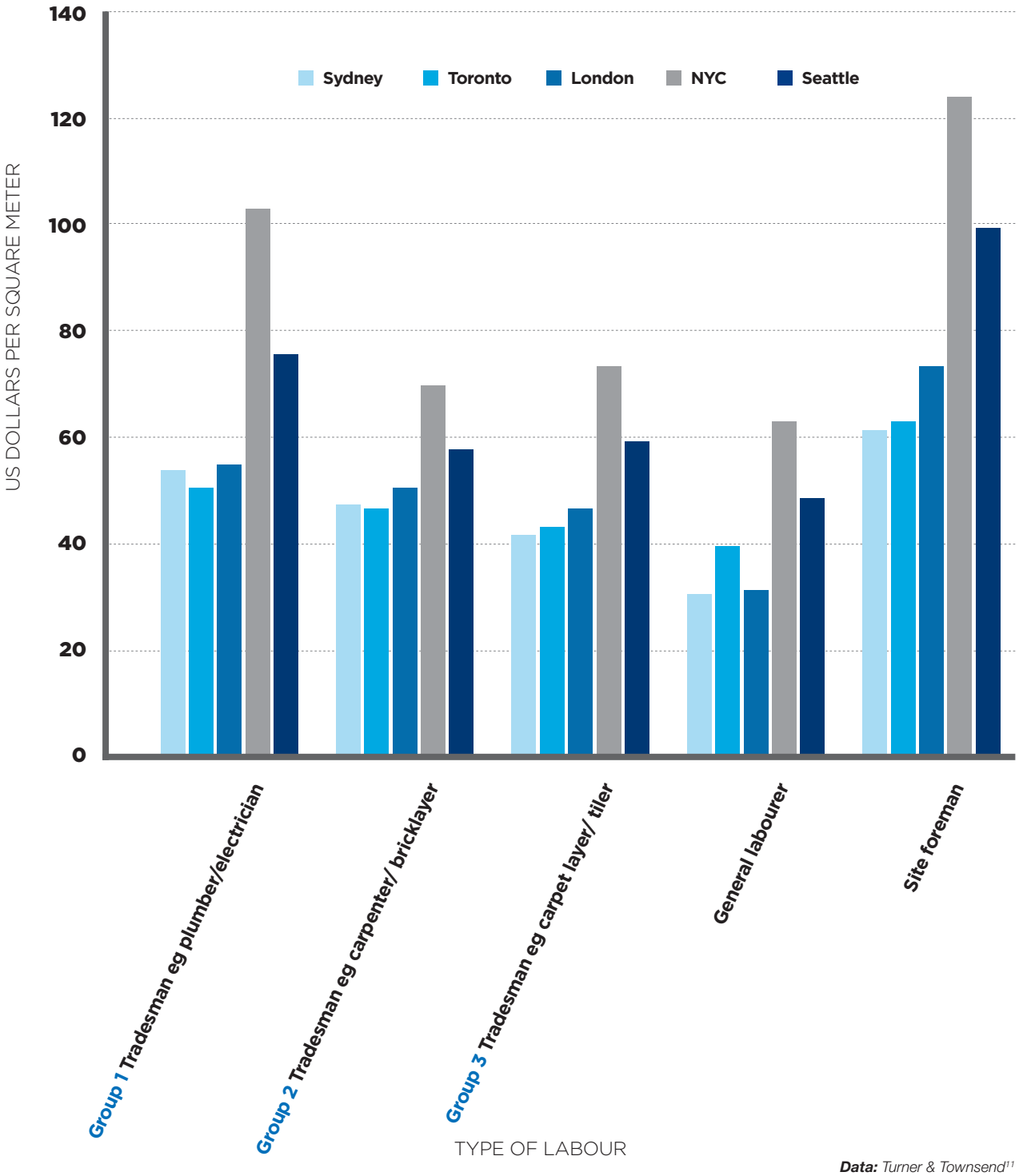
While the construction labour force in Australia maintains an 18 per cent unionisation rate, Australian labour costs within infrastructure construction in major cities are lower than in the UK and the US, where unionisation rates within the construction sectors are at 14 per cent and 14.7 per cent respectively.[8] Conversely, unionisation rates within Canada's construction industry is high, at 31.5 per cent,[9] but labour costs in major Canadian cities are similar to that of Australia's. Overall, no clear link between unionisation rates and the overall costs of infrastructure can be identified.

TABLE 1.
LABOUR WAGES PER SQUARE METER IN THE CONSTRUCTION INDUSTRY: AUSTRALIA, CANADA, USA COMPARISON.

Construction Labour Costs per Meter Squared International Comparisons	AUSTRALIA		CANADA		USA	
	2013 AU$	2013 US$	2013 AU$	2013 US$	2013 AU$	2013 US$
Group 1 Tradesperson	$66.00	$60.00	$62.00	$60.00	$82.00	$76.00
General Labourer	$38.00	$35.00	$46.00	$44.00	$56.00	$52.00
Site Foreperson	$75.00	$68.00	$76.00	$74.00	$84.00	$78.00

Data: *Turner & Townsend*[10]

FIGURE 2.
COMPARISONS BETWEEN SYDNEY, TORONTO, NEW YORK CITY, LONDON AND SEATTLE CONSTRUCTION LABOUR COSTS - US$ COMPARISON BASED ON 2013 EXCHANGE RATES.



Data: *Turner & Townsend*[11]

CASE STUDY:

Comparing Labour Costs in Sydney to Other Comparable Cities

When comparing construction labour costs in Sydney to comparable cities around the world, it is evident that the Sydney labour market is marginally less expensive than other comparable international cities. Figure 2 illustrates the general construction costs in Sydney, Toronto, London, New York City, and Seattle.

The data compares the costs of labour per square meter on infrastructure projects across the five cities, looking at general labourers, site foremen and women, as well as tradespeople with more specialized skills, such as plumbing, bricklaying, or carpet laying.

Consistently, labour costs in Sydney are among the lowest out of these cities when local currencies are converted into US dollars at 2013 exchange rates. While this data does not cover all associated tradespeople involved in large-scale infrastructure

TABLE 2.
AUSTRALIAN CONSTRUCTION SECTOR WAGE COSTS 1998-2010.

DATE	CONSTRUCTION SECTOR WAGE COSTS	CONSTRUCTION SECTOR WAGE COSTS	INFRASTRUCTURE CONSTRUCTION COSTS	INFRASTRUCTURE CONSTRUCTION COSTS
	INDEX	YEAR END % CHANGE	INDEX	YEAR END % CHANGE
JUN 98	64.50		0.66	
JUN 99	66.60	3.26%	0.66	0.52%
JUN 00	68.50	2.85%	0.68	3.17%
JUN 01	71.30	4.09%	0.72	5.59%
JUN 02	73.60	3.23%	0.73	1.58%
JUN 03	76.10	3.40%	0.75	3.14%
JUN 04	79.00	3.81%	0.79	4.65%
JUN 05	83.20	5.32%	0.83	5.94%
JUN 06	87.30	4.93%	0.87	4.37%
JUN 07	91.50	4.81%	0.94	7.79%
JUN 08	95.60	4.48%	1.01	7.91%
JUN 09	100.00	4.60%	1.02	0.58%
JUN 10	103.20	3.20%	0.98	-3.26%

Source: *Infrastructure Australia*[12]

projects, it provides a considered insight into the general costs of labour across comparable cities to Sydney, and places concerns over labour costs in the Australian infrastructure industry in perspective.

This data demonstrates that the costs of labour in Australia are not the driver of the high costs of infrastructure provision. This is supported by analysis from Infrastructure Australia[13] that has modelled the overall trend in construction sector wages and infrastructure costs and found that, despite both being on a general upward growth trend, there was little correlation between the two.

For example, in the year to June 2010 wages increased by around 3 per cent over the previous year, whilst the actual costs of construction dropped by roughly the same margin.

Figure 2 illustrates that construction per square meter labour costs are higher in major cities in the US and the UK, despite considerably lower union representation within the industry. While the Canadian construction industry exhibits much wider union representation, labour costs in Toronto are comparable to those in Sydney. This data set demonstrates that union representation within the construction industry has a minimal impact on labour costs per square meter of construction, particularly when comparing Sydney to other comparable global cities.

This analysis indicates that wage rates or industrial activities by construction workers have not significantly contributed to the rising costs of infrastructure development, but other factors that are impacting on productivity. The long-term method of addressing productivity issues requires action to lift workforce participation, invest in skills training and retraining and, most critically, facilitate greater local labour and skills mobility. These efforts can also be supplemented by supporting temporary and permanent migration, but only if there is relevant labour market testing mechanisms in place and the skill sets of the workforce adhere to the license requirements of the relevant jurisdiction.

Impact of the Size of Australia's Marketplace on Infrastructure Costs

Increasing competition within infrastructure tenders in Australia is a vital component in reducing the overall cost of infrastructure.

Previously, there was a near duopoly in the Australian infrastructure marketplace by two major companies, Leighton Holdings and Lend-Lease. These companies combined shared up to 75 per cent of the construction in major rail projects in Australia.

Although multinational companies are increasingly seeing Australia as a viable option for investment, there are several hurdles that those organisations face that may discourage involvement in the Australian market.

A number of recent reports have found that the complexity and the cost involved in the bid process are potential barriers for international companies wishing to tender for Australian infrastructure, rather than the size of the Australian market itself. Such reports have called upon the Government to commit to a long-term infrastructure plan and better governance and investment in tender design to allow a greater number of international bidders to enter the Australian PPP marketplace.[14]

The Productivity Commission found in 2014 that government tender bid costs remain high by international standards, and are primarily driven by excessive design requirements. The Commission recommends a greater investment into the initial design, while at the same time allowing tenderers to contest the key standards of the design. The Commission also recommends implementing a nationally consistent standard for tenders to allow best value-for-money outcomes.[15]

Other government rules on procurement can often lead to adverse outcomes and added costs for bidders. Rules such as Industry Participation Plans, while intended to support local businesses, are often based on spurious assumptions. The Productivity Commission argues for the abolition of such requirements for the preference of programs with "a sounder basis that increase the capabilities of Australian businesses (such as various R&D programs)."[16]

The priorities listed in this report are aimed at streamlining the infrastructure marketplace to enable strong competition between both local and international investors.

Garry Bowditch, CEO of SMART Infrastructure Facility at the University of Wollongong suggests that costs in

the Australian marketplace such as "changes to technical standards (over-engineering), environmental and planning requirements, safety standards and treatment of contingencies in contracts" are excessive and potentially hinder the entrance of new market players.

It is important to recognise that state and federal governments have acknowledged the need for international investment in Australia's infrastructure.

An infrastructure marketplace that encourages international investment is the desired outcome for both state and federal governments. The suite of reforms proposed in this report assist in creating more international competition in infrastructure provision, without sacrificing the regulatory settings that stipulate important environmental and safety standards, among other necessary safeguards.

Priority 1: Streamlining the infrastructure development and delivery process

1. A New Governance Model and Longer Term Politics

The Inherently Political Nature of Infrastructure Development

One of the greatest challenges confronting the establishment of a long-term pipeline is the inherently political nature of infrastructure development. The community's belief in government's ability to deliver important infrastructure projects has been undermined by a litany of failed and cancelled projects.

The Parramatta-Epping Line is a case in point. This $2.1 billion rail project planned for development in Sydney's west was announced by the Federal Government prior to the 2010 election, and slated for construction from 2014-15 onwards.[17] However, changes of government in 2011 in New South Wales, and in 2013 at the federal level, caused the project from to be cancelled. Effectively, the Commonwealth and New South Wales Governments couldn't agree on which transport projects to prioritise, so while funding was allocated within the federal government's budget, the project was never delivered. It did not survive the electoral cycle.

Spending on public transport is a notorious 'political football' and inherently difficult to sell. Planning, financing and building a new rail line requires an extended period of time that usually extends beyond the 3-year or 4-year electoral cycle. Making the case for a government to fund and build a new transport network that will be opened by another government in a generation's time is politically difficult. The frequent result is that only short-term projects are able to get the required political and financial support. Much of the growth in new public transport over the past decade has been in light rail, buses and bus transit ways, because they can be provided within one parliamentary term. Funding only short term, politically motivated projects further undermines public confidence in government.

Attempts at Depoliticisation

In 2008, the Commonwealth Government attempted to address the loss of community confidence in infrastructure delivery by establishing *Infrastructure Australia* - an independent body at arm's length from the political parties. Infrastructure Australia's task is to advise the Government of the day on what projects to fund and in what order. More recently, NSW has attempted to replicate this model at the state level through the establishment of *Infrastructure NSW.*

While these organisations have helped in restoring the community's confidence that infrastructure priorities are being determined independent of political considerations, the community requires further assurances. While both *Infrastructure Australia* and *Infrastructure NSW* represent a step in the right direction, the key decisions on funding delivery and project timelines are still being made

elsewhere. This report notes the importance of both Infrastructure Australia and Infrastructure NSW in providing the necessary expertise aimed at reducing the costs of infrastructure in Australia, and recommends that such advisory bodies be strengthened and replicated in each jurisdiction.

Projects are Exposed to Political Change

The East-West Link governance model is a perfect example of how major infrastructure projects are exposed to the highly dynamic political environment. The now defunct *Linking Melbourne Authority* was charged with the construction, financing and management of the Melbourne motorway. It had its own board of directors that, whilst having considerable expertise in the fields of finance, planning and project delivery,[18] have no links to local government and the community. This type of governance structure jeopardises project delivery, especially in the early stages of development, as a political change or ministerial reshuffle can leave the project exposed to potential planning changes or cancellation. This was the case with Melbourne's East-West Link. The hasty approval of the project neglected the necessary community consultation that was required for the project to be viable. Inevitably, the lack of popular support for the project resulted in its cancellation, which cost the Victorian government, and the taxpayer, $420 million plus the costs incurred in establishing the delivery authority and other preliminary arrangements.[19] These costs, delays and cancellations are unacceptable to the taxpayer and the risk and frequency of these occurrences needs to be mitigated if Australia is to be a global leader in infrastructure development.

Improving Project Governance Structures

An Australian Government review[20] of infrastructure best practice case studies indicated that strong governance structures are a key to achieving effective project delivery. The review noted that these arrangements are seen to be particularly important in partnership and alliancing procurement models, where considerable risks are retained in the public sector. Independent expert advisors and joint governance arrangements are practical steps to ensure value for money is achieved in these circumstances.

A recent study[21] of the transport infrastructure delivery mechanisms for some major US cities found that state, metropolitan, regional and local government agencies and delivery authorities are tailored and aligned to the projects and programs that they are required to carry out. Federal and state agencies prepare, implement and refine legislation, policies and programs for regional and local agencies to plan and implement. The priorities are reinforced through federal and state funding and financing incentives, including loans, grants and credit enhancement programs.

Regional and local government agencies have a mandate to plan, fund, procure and deliver infrastructure and urban renewal programs. In all case studies, there is a strong connection between an agency's responsibilities and its ability to raise revenue. Where transport networks and renewal programs cross-jurisdictional boundaries, as exemplified by the Los Angeles, Phoenix and Dallas transit agencies, representative boards and authorities are created to achieve cross-border consensus.

It is recommended that the state and federal governments develop regional and metropolitan governance structures that are comprised of local government elected officials, state agency representatives and experts to undertake long term integrated land use, infrastructure and transit planning.

A process is also needed for securing community and parliamentary consensus on a long-term basis. Previous reports[22] have suggested that a Parliamentary process may be the best way to secure a funding and project pipeline, but there are merits to other methods. The cities of Denver, Colorado and Dallas, Texas in the United States have been particularly innovative in this sense, exploring innovative community consultation methods in informing the community of infrastructure development.

CASE STUDY

Innovating Methods of Community Consultation and Approvals

Denver's FasTracks program is a multi-billion dollar public transportation expansion plan under construction in metropolitan Denver, Colorado, in the United States. Developed by the Regional Transportation District (RTD), the plan consists of new commuter rail, light rail, and express bus services. Six new light rail, electric commuter rail and diesel commuter rail lines with a combined length of 122 miles (196 km) will be constructed under the plan.[23]

The program for a complete overhaul of the public transport network of Denver has taken quite a while to get off the ground and gain enough political and community support. The most interesting aspect of the program is the method by which community engagement, consultation and ultimately project approvals take place.

Ten years ago, Denver's mayor (and current Colorado Governor) John Hickenlooper began a campaign to convince voters to approve an ambitious expansion of the region's light rail network. A similar plan had been defeated in a 1997 referendum, but in 2004, voters in the eight counties that comprise the RTD approved a 0.4 per cent sales tax increase as a means of funding the FasTracks program.

The key factor in the referendum's success was a concerted public relations campaign. RTD, supported by the Denver Chamber of Commerce and the Denver Regional Congress of Governments (DRCOG), launched a communications blitz that involved presentations in schools and city halls across most of the region's 60 municipalities. The aim of these consultations and presentations was to convince the community that for only 4 cents on every $10 purchase, they would be receiving a whole range of new public transport infrastructure.

The Dallas Area Rapid Transit Authority (DART) uses a similar system. DART's funding and infrastructure plans are approved by referendum, in which the 13 metropolitan areas vote. Currently, 75 per cent of DART's funding comes from a 1 per cent sales tax, sanctioned through the vote, whilst 15 per cent is federally funded and 10 per cent comes from other sources.

After beginning a corridor acquisition plan in 1983, in 1989 DART sought support from voters for their first comprehensive transit system. After this failed at the ballot box, DART proposed a second, revised system which was approved in both 1996 and 2000. Further, in 2006, a comprehensive transit system was introduced, scheduled for delivery in 2030.[24]

The examples from Dallas and Denver illustrate true community engagement in the planning and funding phases of large infrastructure projects. The referendum on funding and future projects ensures community engagement is high and consensus is achieved before infrastructure projects are put into development. This system for the delivery of infrastructure relies heavily on genuine community consultation, whilst the long-term nature of the plans ensures the existence of a well-defined project pipeline that allows for longer term planning from both the public and private sector. Ultimately, elements of this system, particularly the community consultation process, referendum and public accountability should serve as lessons for Australia.

1.2 Benefits of a Clear Project Pipeline

In a response to the draft inquiry report into public infrastructure undertaken by the Productivity Commission, the Business Council of Australia argued that 'the money is there to invest in projects so long as we have well developed project pipelines'.[25] Others[26] have argued that a lack of clear project pipelines and government commitment is a major barrier to private investment that ultimately impacts on risk profiles, rates of return and more importantly the overall project costs.

When governments approach infrastructure development on a project by project basis, their interactions with the private sector infrastructure market can be uncoordinated and fragmented. This can exacerbate costs and negatively impact on the private sector's ability to adequately address projects, innovate and deliver the best possible services on behalf of their clients.

The lack of a defined series of major projects leading into the future also has a negative impact on construction firms' ability to retain, train and invest in its workforce. In submissions to the Productivity Commission, stakeholders[27] have raised the issue of project pipeline uncertainty and its effect on careers in construction. When several similar projects coincide, the immediate effect is a sharp increase in labour demand, which can result in short term skill shortages. In the longer term, the unpredictability of work in this sector is a major issue hampering the development of depth and experience within the workforce. The discontinuity of employment is a mitigating factor for long term commitment to the industry and the consequent lead times to undertake university studies and trade apprenticeships means that potential employees cannot be guaranteed jobs when they complete their training.[28]

This paper recommends the establishment and publication of regional and/or metropolitan infrastructure pipelines in line with the outcomes of community consultation and referenda in order to outline government commitment to future infrastructure projects. The implementation of such reforms would promote greater economic productivity and achieve higher levels of mobility for citizens.

CASE STUDY

UK National Infrastructure Pipeline

An example of the benefits of having a well-defined pipeline can be seen through an analysis of the United Kingdom's National Infrastructure Pipeline. Begun in 2010 by the Conservative and Liberal Democrat Coalition government with the publication of a 'National Infrastructure Plan' report , the United Kingdom's infrastructure pipeline, along with other measures to improve project governance and promote greater competition in project delivery, is on track to achieve a reduction in infrastructure construction costs of around 15 per cent.[30] This represents a benefit of £2-3 billion per annum, which translates to a saving of £20-30 billion over the next decade.[31]

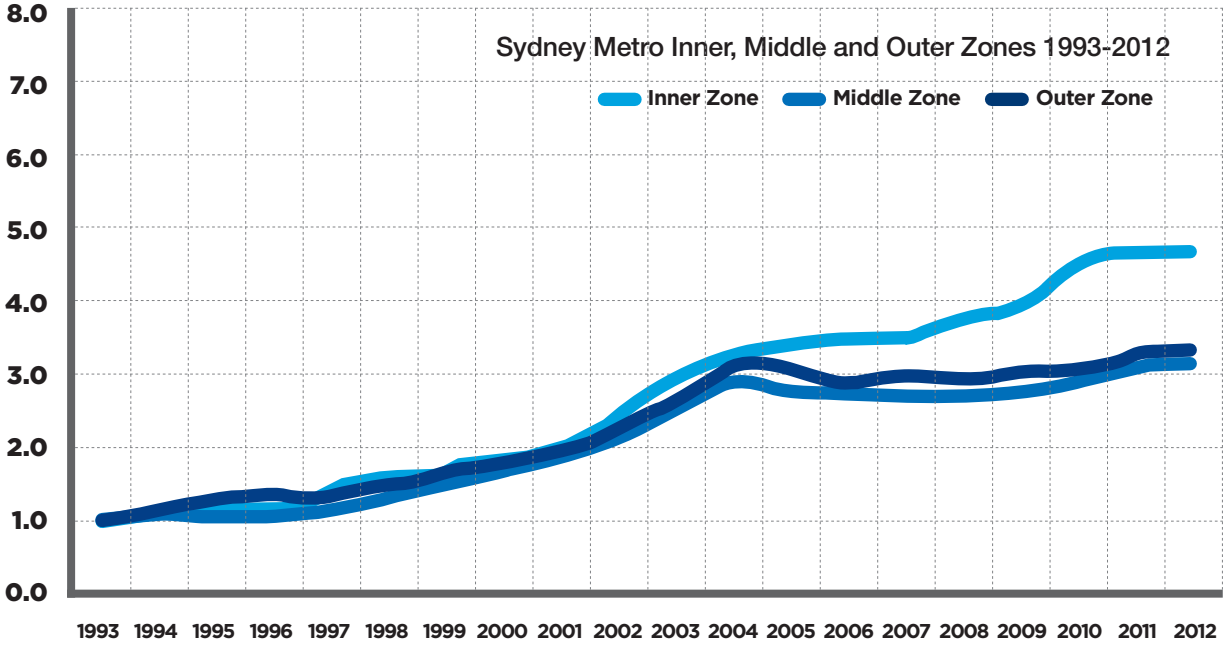
Roads Australia have cited their 2009 Issues Paper when outlining benefits of a well defined project pipeline, estimating that the good planning, resource allocation and focus on outcomes generated through a high level of predictability could have conservatively generated a saving of five per cent to the Road and Traffic Authority in the $4.4 billion NSW Roads Budget over 2009/10.[32]

Priority 2:
Ensuring effective planning processes to acquire & preserve land corridors for future development

2.1 Purchasing and Preserving Land Early

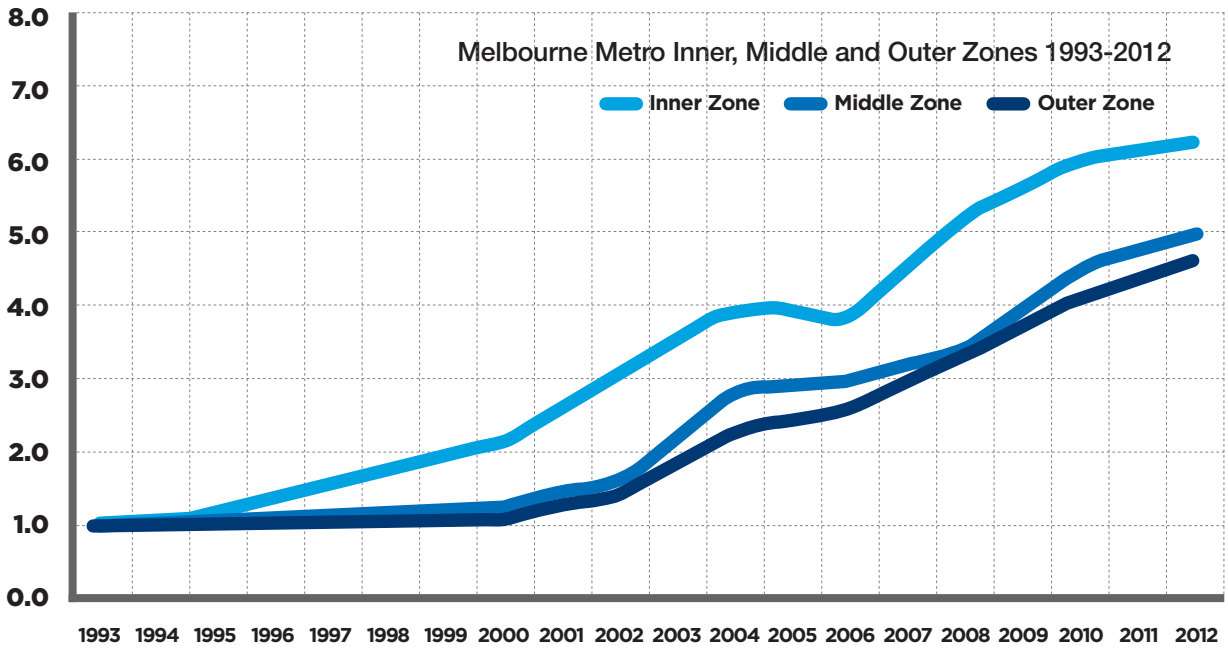
The Australian Bureau of Statistics has projected that Australia's population will double to 46 million by 2075, with the cities expected to increase their portion of the population. The ABS also forecasts that Australia's freight task will double by 2030.[33] Further, a 2013 report into historic urban land value growth found that between 1993 and 2012, the overall 20-year growth average for the east coast capital cities was 7.56 per cent and the CPI average was 2.69 per cent over this same period.[34]

FIGURE 3.
SYDNEY STANDARD RESIDENTIAL LAND VALUE INDEX



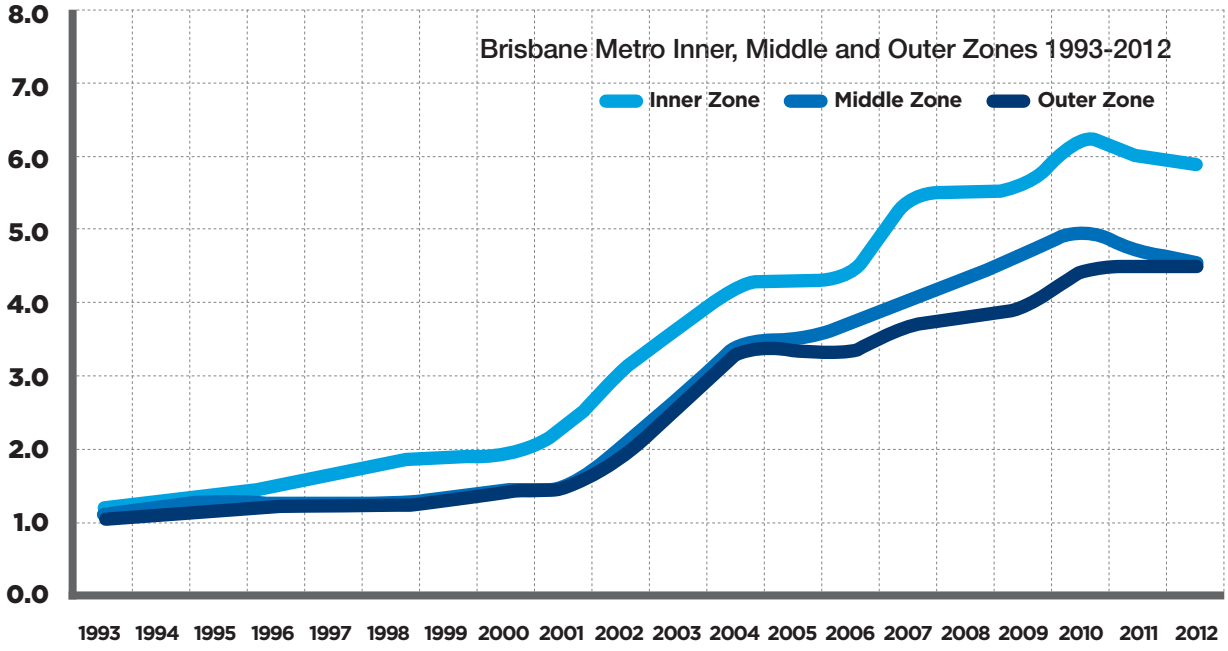
Source: *NSW Valuer General and Urbis*

FIGURE 4.
MELBOURNE STANDARD RESIDENTIAL LAND VALUE INDEX



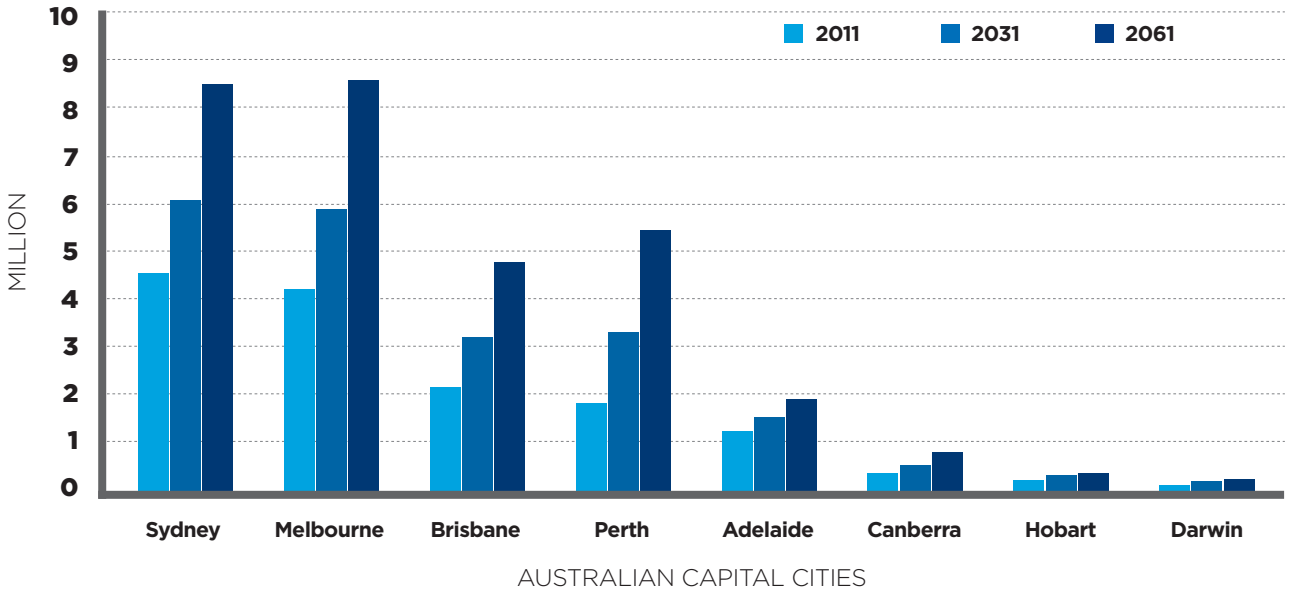
Source: *Local Government Authorities (LGA)*

FIGURE 4.
BRISBANE STANDARD RESIDENTIAL LAND VALUE INDEX



Source: *QLD Valuer General Urbis*

FIGURE 6. PROJECTED POPULATION OF AUSTRALIAN CAPITAL CITIES – 2011 TO 2061 (MILLION)



Source: *Infrastructure Australia analysis of Australian Bureau of Statistics (2013c)data.*

In anticipation of these changes, and in acknowledgement of the steady upward trend of land value growth, governments should be actively looking to preserve infrastructure corridors and acquire land well in advance of projects. This will lower the costs of land acquisition over the long term.

Buying land for projects pre-emptively would not only result in the lower cost of land acquisition, but would also minimise delays in the development and procurement stage of future projects. This would also provide a clear statement about the direction for infrastructure planning and investment, offering a higher degree of project certainty for the private sector.

Further, in the case that plans change, the land can be sold, presumably at a profit considering the overall 20-year growth average for east coast capital cities of 7.56 per cent. A notable example of land corridor preservation can be seen in the South West Rail Link Extension, that is currently set to finish a year ahead of schedule and $300 million under budget.[35] The South West Rail Link extension is being built in anticipation of the 300,000 new residents that will call South Western Sydney home over the next 30 years.[36]

CASE STUDY

Sydney Transport Infrastructure Property Acquisition

Between November 2014 to May 2015, the government spent $568 million on 236 properties to make way for the North West Rail Link, NorthConnex, WestConnex and the CBD and South East Light Rail.[37] Using recent property valuation data[38] to determine the cost of historic property acquisition, it has been determined that purchasing land 20 years in advance of the construction of these projects would have aided in achieving conservative savings of around $43 million dollars across these projects.

2.2 Utilising Preserved Land

Land purchased in advance or in anticipation of an infrastructure project should be put to productive use prior to the start of construction in order to provide an extra revenue stream for government. However, careful planning regarding the type of land use occurring on such preserved corridors is vital, as some types of land use are better suited than others. The preservation and subsequent use of the preserved F6 corridor in Sydney's south is an excellent case in point and demonstrates the importance of ensuring appropriate land use for future transport corridors. This case emphasises the need for continued community consultation around the preservation of land and its desired use. In addition, it highlights the politically fraught nature of infrastructure planning and development and the importance of working to negate this political aspect:

CASE STUDY

F6 Corridor Preservation

In 1951, as a part of the County of Cumberland Plan, the F6 corridor was preserved to cater for anticipated demand for access between central Sydney and the then planned Southern Freeway at Waterfall. In the time before the construction of the F6, however, the land was used for recreational and leisure purposes, with several sections of the corridor serving as community parks.[39]

This led to the formal abandonment of sections of the corridor throughout the 1960s, 1970s and 1980s, with the remaining part of the preserved corridor representing a much narrower and shorter version of the original plan, and limiting its potential uses as a transport corridor. However, as Infrastructure Partnerships Australia asserts, the F6 Extension corridor, "will undoubtedly be required in the future to provide road and mass transit links and better connect Port Kembla into Sydney's road network."[40] This reality raises concerns about the capability of the remaining, restricted F6 corridor to cater for future demand.

The F6 case study brings to light the importance of the type of land use that occurs on preserved corridors. This case study illustrates that uses such as community parks and recreational facilities may incur prohibitive political costs when it comes time to construct the proposed transport infrastructure. Local communities may not recognise that their local parklands may have been earmarked 20 years prior for a major infrastructure development and announcing the development of a new infrastructure project on this land may be met with community outcry and disapproval. Utilising the dormant corridors for industrial land use, however, would not minimise the likelihood of such political costs.

This report recommends that, rather than corridors solely lying dormant or being used for community parkland, commercial and light industrial land use leases can also be issued for dormant land corridors, with leases set to expire simultaneously at a time specified by government. This would ensure that the political element was removed and would provide government with a stable revenue stream in the interim that may help recoup the costs of the initial land purchase.

Community Consultation Must Be Prioritised

It is crucial that communities are sufficiently informed of governments' long-term intentions to transform preserved land into vital future infrastructure services. Prior to the development of preserved corridors, the consideration of the community affected should always be met. However, it is essential that affected residents are well-informed about infrastructure project timelines and how future plans will affect their community prior to settling in an affected community, and are continually informed of the progress of infrastructure projects throughout their occupancy in the affected community. It is important that the community understands the future purpose for the use of such preserved corridors, even if such spaces are temporarily used as valuable community areas, such as parks or recreational areas.

2.3 Preserving Underground Corridors for Future Projects

Given the fact that the population of Australia's urban centres will continue to rise and adequate forward planning measures have not been put in place, it is highly likely that any future transport infrastructure will be, at least in part, underground. If governments do not plan well in advance for such subterranean projects, developers will be forced to tunnel deeper underground to accommodate pre-existing or planned subterranean projects. This will further increase the already high cost of tunnelling in Australia.

In dense major cities, building infrastructure underground is already a significant task. Major cities master plans are often only drawn two dimensional, and therefore do not include vertical measurements to keep a track of underground space. Urban development sectors such as water and transport have conflicting targets for urban underground development, emphasizing a need for underground planning and preservation for future infrastructure projects.[41] For successful planning of underground infrastructure, cities need to adopt three dimensional Master plans to understand when excavation needs to be undertaken.

In different countries, various underground facilities have been built, including:

- Underground parking space
- Rail and road tunnels
- Sewage treatment plans
- Garbage incineration plants
- Underground mass rapid transport systems, 'underground metro'
- Underground oil storage and supply systems (through pipelines in tunnels)
- Underground cold storage
- Hydroelectric projects with extensive use of underground caverns and tunnels[42]

Action should be taken to preserve subterranean corridors, especially in dense, highly populated areas with a large amount of existing subterranean infrastructure, such as underground car parks and rail lines. As urban underground development becomes a highly contested space, there is a greater need for the preservation of land. Given the high costs of tunnelling relative to overland transport infrastructure construction in Australia, such action would help to significantly reduce the cost pressures associated with deeper, more complex tunnelling required to avoid these existing infrastructure networks.

Priority 3: Addressing inefficiencies in the procurement process

3.1 Costs Incurred through PPP Risk Sharing, Contract Alteration and Tendering

The Benefits of PPPs in Infrastructure Procurement

Public Private Partnerships are pivotal to the funding and development of important infrastructure projects in Australia and around the world. There has been an increasing tendency for government to engage in PPPs as a method of decreasing public costs and dispersing risks. Fundamentally, PPPs work because of increased oversight regarding risks and outcomes. The debate regarding the utility of PPPs has moved on from ideological to practical, with the focus now being on how they can 'be best structured to achieve public policy goals'.[43]

Private sector stakeholders engaging in infrastructure PPPs are often driven by a cautious financial approach that warrants a detailed analysis of the short and long-term risks associated with the project.[44] By engaging in PPPs, governments can rely upon the private sector to contribute a critical risk analysis before committing to the investment.[45] The enhanced scrutiny and shared risks between the public and private stakeholders tends to result in more efficient and optimised projects that provide benefits to both the public stakeholders, in the form of efficiently procured and delivered infrastructure, and the private stakeholder, in the form of an ongoing revenue stream.

Proponents of PPPs cite the major benefits of superior cost and timing outcomes, improved project scoping, higher level of due diligence performed by debt financiers and, most importantly for government, risk transfer away from the public sector and the taxpayer.

Challenges to PPPs

However, critics say that risk transfer is illusory as there have been a number of PPP projects where government has felt the need to take control of a project and provide additional finance and support. While PPPs are important in infrastructure provision, they are occasionally susceptible to a variety of challenges.

In October 2000 the Victorian Government took control of the Metropolitan Women's Correctional Centre to overcome a failure by the private sector to provide adequate service levels. In the same month, it also brought back the Latrobe Public Hospital project for similar reasons. And in 2006 the NSW Government announced it would buy back the contract for the provision of health services at the Port Macquarie Base Hospital to address poor service levels. In each case, the private sector had underestimated the cost of meeting its service obligations and, in the case of the hospitals, had underestimated demand risk.

More recently, in February 2012 the NSW Government agreed to provide conditional deferred equity of A$175 million to the Waratah train PPP project, to overcome concerns regarding the private sector consortium's ability to refinance its debt in 2018.[46]

There have been a number of instances where the government has shared the risk that it had transferred under the PPP contract. A contributing factor to these failures has been insufficient flexibility of PPP contracts. Breaking contracts can be an expensive undertaking, so it is important that contracts include provisions that allow governments to direct the consortium to vary the project if government's requirements change. Currently, most contracts in Australia give government the ability to do this.

Variations are also thought to be expensive under PPP contracts, potentially because variations under a PPP contract are more transparent than the whole of life costs of variation under traditional procurement models. Partners in the project should appropriately pre-determine the costs of variations in the initial contract so that any extra risk borne by a change in directive is appropriately compensated for. Not doing so can leave government exposed to extra costs associated with unplanned project change.

Recent research[47] has shown that bidders typically spend about A$2.5 million on bids for projects with a capital value between A$250-300 million, rising to A$5-6 million for a A$1 billion hospital, and A$30 million or more for a large A$2 billion plus economic infrastructure project. While these costs may seem significant in absolute terms, they equate to between 0.5-1.2 per cent of project capital value (with the larger projects costing proportionately less), which is close to world's best practice. Evidently, Australian PPP bidding costs are certainly not excessive. There is also little, if any, evidence that these bid costs are discouraging potential bidders from bidding to an extent that is affecting competition and value for money.

Regardless, there is scope to implement some small changes that will contribute to a reduction in overall bidding costs by relaxing the strict preference for high levels of certainty, in commercial terms, that is favoured by Australian government agencies.

Currently, governments require a huge range of information from potential partners to determine its preferred bidder. Detailed design proposals are now the norm from the very early stages

of the process, leading to a preference for fully completed project documents and in some cases fully completed contracts.[48] A three-stage bid process is also standard for Australian PPPs, including an expression of interest phase, a request for proposals and a negotiation and completion phase. This multi-stage model, coupled with the extensive amount of information required to launch a bid inflates both the procurement time and cost of a bid.

Governments only require information from prospective development consortia that enables them to select their preferred bid. Of course, it is imperative that they are able to do this with a high degree of certainty in regards to quality, achievability and cost. However, anything beyond this initial scope is excessive and can be agreed upon at a later stage, once the preferred bid has been selected.

3.2 Strategies for Reducing the Costs of PPPs

A recent study[49] of major transport sector projects found that a large share – 90 per cent of the 258 projects analysed – have been subject to costly project delays and renegotiation as a result of project and contract revisions. This resulted in cost overruns on average of 28 per cent. Taking these cost drivers into account, strategies that governments can adopt to reduce bidding costs include:

- Ensuring all government preparatory work has been completed before requesting detailed proposals, thereby diminishing the need for addenda and renegotiations;
- Not asking bidders to provide information that isn't needed to evaluate their capability, or to achieve certainty on commercial terms prior to the appointment of a sole preferred bidder; and
- Emphasising elements of the proposal needed to evaluate the bids, such as project contract requirements, including fitness for purpose warranties, the requirements of the performance specifications and the payment and abatement mechanism whilst reducing the stress placed on bid phase design work.

An International Transport Forum discussion paper[50] has argued that the largest potential savings in PPP projects arise from the freedom to fundamentally redesign aspects of projects. Rigid specification sometimes prevents project managers from making economic decisions that would help reduce the overall size of project costs. More focus should be aimed at specifying outputs (such as the quality of infrastructure and availability), rather than inputs. A recent report[51] into design innovations and cost savings found that the consortium delivering the LBJ Freeway in Dallas, Texas was able to achieve cost savings of US$970 million from a project cost of US$2.875 billion.

Utilising alternative methods of securing debt financing

Many projects are highly leveraged and governments can usually raise debt finance more cheaply than the private sector. Private debt finance also always involves expenditure on secondary financing instruments to hedge and insure risk. Legal and consulting fees for establishing PPPs are also substantial. For example, advisors' fees amounted to £500 million for the three PPP contracts with Metronet and Tube Lines, covering investments of £17 billion and £5.4 billion respectively over 30 years.[52] Reducing these costs through alternative methods of securing debt finance would represent significant savings in PPP projects.

3.3 Utilising a Preferred Bidder Debt Funding Competition (PBDFC) to Secure More Affordable Debt Funding

The McKell Institute's 2014 report, *Getting Us There: Funding the Transport Infrastructure of Tomorrow,* tabled a number of recommendations aimed at improving the funding for infrastructure projects in Australia. These recommendations included a range of tax reform proposals, as well as options for further engagement with the private sector in infrastructure funding. Building upon this earlier research, this report suggests the utilisation of a Preferred Bidder Debt Funding Competition (PBDFC) to secure more affordable debt funding.

As discussed in Section 3.2, alternative methods of securing debt funding would eliminate some of the costs associated with legal and consulting fees required under current methods of securing debt finance. A number of bodies have explored the possible benefits of a Debt Funding Competition in order to reduce the costs of securing debt finance, with the Productivity Commission noting that it merited further exploration in their Inquiry Report into Public Infrastructure.[53] Debt Funding Competitions have been utilised a number of times in the UK since

the early 2000s and have been advocated by HM Treasury as a means of inducing competition and achieving more favourable debt funding terms for major projects.

Traditionally, a bidder appoints a senior lender to support its bid before the preferred bidder stage. If the bidder wins, the lender arranges the debt. Under a PBDFC, senior lenders compete to provide senior debt following the appointment of a preferred bidder.

Advantages of a debt funding competition include:

- reducing bid costs for unsuccessful bidders if underwritten debt funding is not required;
- reducing the likelihood of significant amendments to project documents being requested by lenders;
- ensuring that lenders are only competing for an established project, as the preferred bidder has already been selected; and
- ensuring that the principles of best practice are shared between projects through oversight by, and guidance from, the authority in the competitive process.[54]

Where a procuring authority or government has decided to run such a competition it will need to agree with its preferred bidder on the elements of the anticipated financing solution that will be opened to competition, a list of potential senior debt providers, and the contents of an information memorandum to be circulated to such funders.

The procuring authority will want to ensure competition in respect of those elements that have a direct impact on it, including margins and other fees, reserving and hedging requirements. The preferred bidder is likely to use the opportunity of the PBDFC to also ensure competition on elements of the financing solution that may be of less interest to the procuring authority, such as borrower events of default, sub-contract security requirements, and conditions that will apply in respect of shareholder distributions.[55]

This report recognises that there are a number of opportunities for efficiency gains in the Australian infrastructure procurement process. The overall model works fairly well, and the goal should not be a radical overhaul of this process. However, a number of key issues have been identified as inefficient. Procuring authorities should focus on producing tender briefs that include only the required information necessary to produce a bid proposal; any specification further represents an inefficiency or waste. This report also recommends the further exploration of utilising preferred bidder debt funding competitions for securing more favourable debt funding terms for major infrastructure projects. The combined effect of these recommendations would be valuable efficiency gains in the infrastructure procurement process.

This report recognises that this suite of recommendations does not represent a significant amount of savings to project provision. It also notes that the aim of these measures should not be to radically overhaul the procurement and bidding process for major infrastructure projects in Australia. Rather, the cumulative aim of these recommendations would be to achieve marginal efficiencies in procurement costs and time, leading to an overall more efficient procurement process.

Priority 4: Addressing skills shortages through the harmonisation of trade licensing frameworks

The Productivity Commission report into public infrastructure highlighted the "intermittent nature" of infrastructure construction as a factor driving skills shortages at times of high activity.[56] In particular, these shortages are acutely felt in highly skilled professions such as engineering. High demand for skills increases the costs of labour, and efforts to train professionals from other sectors may have contributed to lower productivity and increased costs during the construction phase. Despite the challenges of acquiring appropriately skilled tradespeople for complicated infrastructure projects in Australia, the Australian construction market overall enjoys labour costs either lower or at a similar level than comparable countries.

4.1 Harmonisation of Trade License Regulation

It should be noted that any attempt at harmonisation should be based on the principles of best practice and should not be driven by the lowest common denominator. One of the goals of harmonisation is to raise standards to the highest level, not lower them.

The direct compliance costs from overlapping regulation that are borne by businesses and eventually consumers include the costs of multiple licence fees, whilst the indirect costs incurred include those of managing multiple regulatory regimes.

The construction sector accounts for a significant proportion of employed tradespeople and a significant proportion of licensed contractors. At the end of June 2012 there were 950,000 persons working in the construction industry. Two-thirds (67 per cent or 636,000 persons) worked for the construction services sector followed by 16.8 per cent (or 160,000 persons) in building construction and 16.2 per cent (or 154,000 persons) in heavy and civil engineering construction.[57]

Through the first decade of the 2000s, the number of construction firms operating in two jurisdictions grew by 19.9 per cent, and the number of construction firms operating in more than one jurisdiction grew by 30 per cent.[58]

The costs to businesses and individuals of holding multiple licences can be significant. The following table shows a range of fees that can apply for holding some of the relevant occupational licences, either in the first year or on an ongoing basis. The figures represent the highest and lowest fees of a particular licence category, showing the pro rata cost for one year.

TABLE 3.
COSTS OF PURCHASING TRADE LICENSES IN AUSTRALIA - LOWEST TO HIGHEST

Building - Individual building contractor (new)	**$646.00 (NSW)**	**$1,275.90 (QLD)**
Building- Individual building contractor (renewal)	**$433.00 (NSW)**	**$449.35 (QLD)**
Electrical - Individual electrical/qualified contractor (new)	**$243.00 (NSW)**	**$454.00 (NSW)**
Electrical - Individual electrical/qualified contractor (renewal)	**$179.00 (NSW)**	**$382.00 (NSW)**

Source: *COAG*[59]

The individual tradesperson commonly pays the licensing fee for their trade license, with some awards and enterprise bargaining agreements including an allowance for this. Though the costs on an individual basis may seem negligible, if these costs are multiplied across the industry and across jurisdictions the impact to the bottom line on large projects becomes a lot higher and these prohibitive costs can negatively impact on labour mobility, affordability and availability.

It is imperative that training and licensing are of the highest standard and this unavoidably comes at a cost. Harmonisation of trade license regulation would contribute to the lowering of these costs by ensuring that labour is more readily available, highly skilled and able to move freely across states without any excess costs.

These costs, and the costs associated with skills shortages, can be mitigated through the harmonisation of trade licensing schemes across the Australian states and territories along the lines already discussed by COAG. The *National Occupational Licensing Authority,* established in 2008 for the purpose of implementing a national trade-licensing scheme, was abolished under the Abbott government who argued that mutual recognition of trade licenses across jurisdictions would be a less burdensome method of achieving great labour mobility.[60] This discounts the effect of different training and licensing regimes have on labour skills and mobility. To have a highly productive, highly mobile labour force it is imperative that a national trade license and training body is able to ensure the highest standards of best practice across the industry by utilising a uniform regulatory framework. This would provide firms, contractors and individuals with uniform standards within which they will operate, helping to increase labour mobility across differing jurisdictions and enabling higher productivity within the industry. Mutual recognition of licensing does nothing to achieve this.

4.2 Establish A Regulatory Framework For Administration of a National Licensing System

In a 2009 report,[61] COAG considered a number of options for the implementation process of harmonisation of trade license regulations.

Under whichever implementation model is adopted for the national licensing system, there must be:

- nationally consistent legislation that will be enacted by States and Territories;
- a national body that will be responsible for setting licence policy and a framework for operations;

With the aim being that:

- a person or business will be able to apply for a national licence which would be issued based on nationally consistent eligibility criteria and applicable Australia-wide;
- a national public register of licensees will provide transparency and consumer confidence; and
- existing licence holders will be deemed to hold licences in the new system.

4.3 Options for Implementing the National Licensing System

This section outlines the two possible implementation options:

Option 1 – the National Single Agency Model; and

Option 2 – the National Delegated Agency Model.

Option 1 – National Single Agency Model

Under this model a national agency would be established with branches in every state and territory. It would be responsible for both advising the responsible Ministerial Council on licence policy and the delivery of licence services to industry in each state and territory. These services would include the issue and renewal of licences and associated disciplinary arrangements. As a new single agency, it would be able to provide uniform policy development and service delivery, a consistent operational framework and organisational structure and culture.

Option 2 – National Delegated Agency Model

Under this option the national licensing body would be responsible for developing national licence policy for each occupational area and overseeing its consistent application by regulators. Specifically, the national licensing body would have administrative responsibility for the national licensing system legislation, but would delegate to a jurisdiction the operation of licensing services. States and Territories could use existing staff and infrastructure for these licensing functions. Service agreements would be used to establish consistent service delivery standards for national licensing arrangements across jurisdictions.

The National Occupational Licensing Authority (NOLA) Submission to the Productivity Commission in relation to geographic labour mobility issues inquiry made mention of the economic benefits of this policy action, stating:

"It is clear that national occupational licensing will lead to positive economic benefits nationwide. The Productivity Commission has estimated that moving from no interstate labour mobility to full mobility could lead to a 0.3 per cent increase in GDP, amounting to $4 billion (on 2011 figures)."[62]

Under modelling carried out by the National Occupational Licensing Authority, the combined value of economic benefits of the national licensing model for the four proposed trades is estimated to be $260.1 million, with benefits flowing through reduced compliance burdens on businesses and tradespeople, improved workforce participation and improved productivity through greater labour mobility. The costs of single versus multiple licensing systems and some of the projected economic benefits of this policy action are outlined in Appendix B.

4.4 Licensing Fees Framework

Current arrangements provide for each jurisdiction to continue to set and retain licence fees. Regulators in a number of jurisdictions are Treasury funded and do not charge fees based on full cost recovery, which means the licence fees in these jurisdictions are considerably less than other jurisdictions. Therefore, it is necessary that any national licensing scheme will have a uniform fee structure.

If national licence holders and applicants are not charged a uniform national licence fee this will add enormous complexity to the national licensing project, particularly when trying to ensure a seamless process for the licensee or applicant. Another problem that arises from different fee systems is jurisdiction shopping where applicants apply in the jurisdiction with the cheapest fees.

To negate this, a consistent national licence fee that adequately reflects the cost of administering the licensing legislation to protect consumers and sustain the ongoing viability of the industry could be set for each national licence category.

Once a national licensing model is finalised, additional occupations should be added incrementally to enable more effective management of the process and engagement with relevant stakeholders.

As stated earlier, any attempt at harmonisation should be based on the principles of the best practice and should not be driven by the lowest common denominator. This will mean that some jurisdictions will have to improve their trade training and licensing standards. This would be a secondary benefit of trade license harmonisation that would result in both greater labour mobility and a better-trained, more able workforce.

Priority 5: Capitalising on increased land value around new infrastructure development

In The McKell Institute's 2014 report *Getting Us There: Funding the Infrastructure of Tomorrow,* a range of reforms were proposed aimed at increasing the funding stream for infrastructure projects. These recommended reform options included tax reform options, such as a CBD congestion tax or a Metropolitan Transport levy or Tax Increment Financing; the establishment of new infrastructure funding advisory boards; and an open dialogue with the community over increased user charges.

Getting Us There also examined the option of Value Capture, the technique of generating revenue from the increased property value that results from infrastructure developments. Building on this earlier analysis, this report tables further options for the implementation of value capture in the Australian context.

5.1 Utilising Value Capture Methods to Recoup Costs

The term 'value capture' refers to the identification and quarantining of the lift in rates revenue directly attributed to an infrastructure project. The captured revenue is then hypothecated towards covering the costs of that infrastructure.

Considerable confusion exists in Australia concerning value capture. Although value capture has been widely used in North America since the 1960s and is expanding as a funding method in the UK and other countries, it is not well understood or practiced in Australia. It is now widely accepted that investment in well-conceived transport infrastructure generates economic benefits that exceed costs. Value capture is a method of recouping some of the associated infrastructure costs for governments. Similarly, value capture can be used as a means of generating funding for new projects, or paying down debt on existing ones.

The Business Council of Australia has said, "Value-capture initiatives should also be expanded so that wider beneficiaries of a project, such as local landholders and businesses, also make a contribution."[63]

This report recognises that the politics of value capture can be difficult. The community is often strongly opposed to the imposition of new taxes and levies, so the success of any value capture initiative will be heavily linked to the ability of government to sell the policy and convince the community that any action in this space will have long term, beneficial impacts.

CASE STUDY

The London CrossRail Project

Both domestically and internationally, there is a long list of projects that have applied value capture levies on key beneficiary groups without incurring significant community opposition. London's Crossrail project provides a good example of this.

Crossrail is Europe's largest construction project, the Crossrail route will run over 100km from Reading and Heathrow in the west, through new tunnels under central London to Shenfield and Abbey Wood in the east. There will be 40 Crossrail stations including 10 new stations.[64]

In a massive undertaking that is now being described as a 'London tunnelling marathon',[65] a total of eight tunnelling machines are being deployed to clear the way for 42km of new tunnels beneath London. Work started in May 2009 and there are currently over 10,000 people working across more than 40 construction sites.[66]

Tunnelling is now over 80 per cent complete. Once complete in 2019, Crossrail will bring an extra 1.5 million people to within 45 minutes of central London and will successfully link London's key employment, leisure and business districts. Crossrail will also support the delivery of over 57,000 new homes and 3.25 million square metres of commercial space. An estimated 200 million passengers per annum will use Crossrail.[67]

The project has an estimated cost of £15.9 billion (just under $30 billion AUD). Project funding is drawn from a range of sources including the sale of surplus land, developer contributions, and revenue raised from ticket sales. Perhaps the most innovative funding mechanism introduced to help fund this project is the introduction of a new Business Rates Supplement (BRS) – i.e a levy on non-domestic property rates in certain London boroughs – that aims to raise £4.1 billion, or 26 per cent of the project's total capital cost.[68]

The BRS will apply a levy of 2 pence per pound (2 per cent) on non-residential properties with a (rateable) value of £55,000 or more in London. Over 80 per cent of businesses in London are exempt from the BRS as their rateable value is below this threshold.[69] Though this was likely done for political expediency, the official policy justification advanced for the levy is that the project will increase commercial office values around Crossrail stations by some 10 per cent over the next ten years above baseline projections.[70] The supplement is expected to run for 24-30 years, or until the GLA's initial upfront borrowing is repaid.[71]

This report notes that had the threshold been set at a lower level, a substantially larger proportion of capital costs would have been recouped through the BRS. Equally, had the rate been set at a higher level, project debt would be repaid sooner.

Interestingly, the decision was also taken to not capture any of the value added to residential properties surrounding the Crossrail project despite the significant benefit that will flow to existing owners and property investors. The local housing markets along the Crossrail will inevitably benefit from both improved connectivity and the wider regeneration. Multinational commercial real estate company CBRE has calculated that by the time Crossrail becomes fully operational, house prices in benefitted areas will increase by 13 per cent over and above wider underlying capital appreciation. In Central London, the overall increase is expected to be in the region of 20 per cent.[72] Nevertheless, a political decision was taken not to capture any of the value added to residential property.

It is impressive that a full 26 per cent of the costs associated with Europe's largest construction project are able to be recouped through the use of innovative value capture strategies. It is also worthwhile noting that a substantially higher proportion of costs could have been offset had the decision been taken to apply a higher rate, a lower threshold, or a rate that was broadened to include residential properties. Nevertheless, the capacity for value capture to fund large transport projects has been well demonstrated by the Crossrail project. Equally important, the method of funding has received bipartisan support and strong community backing.

Australian policy makers should examine these value capture strategies for potential adaptation to the Australian context. It would also be worthwhile to consider whether such a rate supplement should be introduced on a permanent basis as a potential means to bridge the gap between operational revenue and operating expenses.

Value capture represents a significant opportunity to secure funding costs or recoup the costs of funding major infrastructure projects in Australia, especially greenfield projects, extending into new suburban and commercial hubs. In NSW for example there is an opportunity to apply some form of levy to residential, commercial and/or industrial land along the corridor of the currently under construction Sydney Metro North West, formerly known as the North West Rail Link.

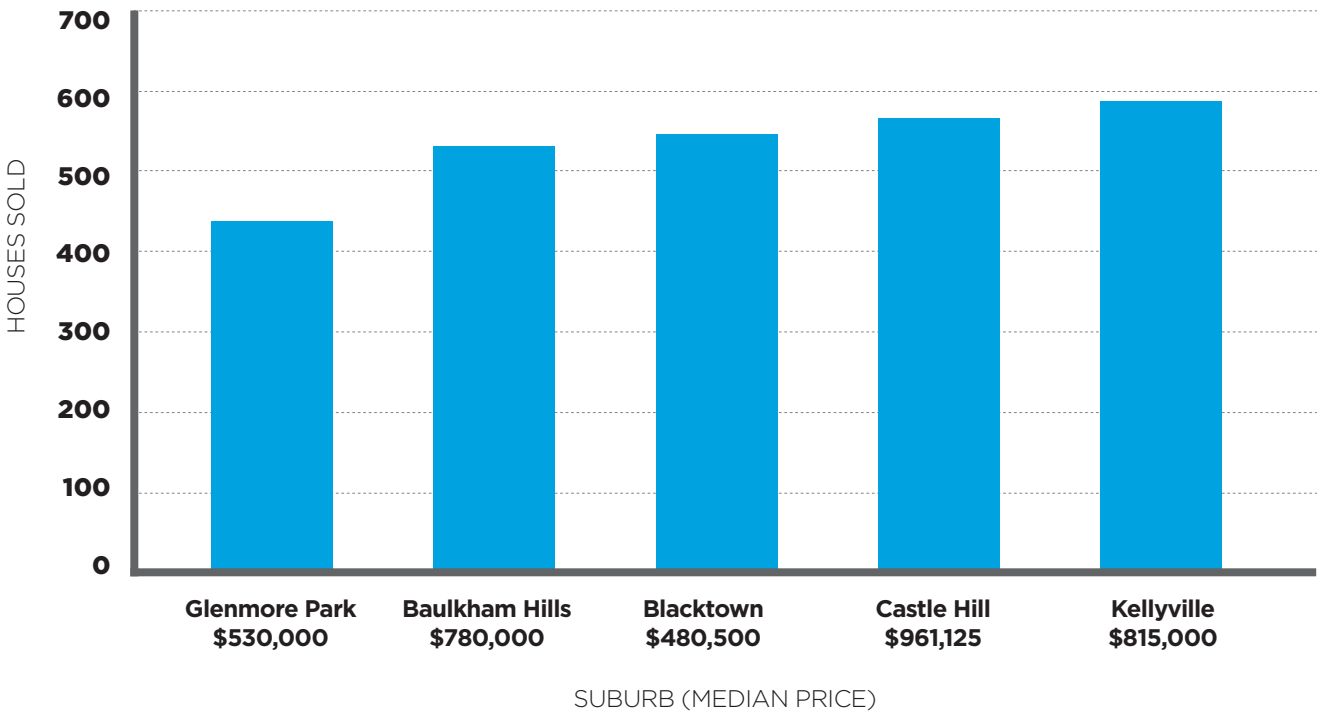
5.2 Value Capture and the Sydney Metro Project

Sydney Metro Northwest is the first stage of Australia's largest public transport infrastructure project. It will be the first fully-automated metro rail system in Australia and is on track to open to customers in the first half of 2019. Sydney Metro Northwest will deliver eight new railway stations to Sydney's growing North West. The project includes construction of twin 15 km tunnels from Bella Vista to Epping which will be Australia's longest rail tunnels. This contract was awarded in late June 2013 and four tunnel boring machines are now in the ground.

Sydney Metro Northwest will deliver, for the first time, a reliable public transport service to a region which has the highest car ownership levels per household in Australia. It is estimated that over the coming decades, an extra 200,000 people will move into Sydney's North West, taking its population above 600,000, or twice the size of Canberra.[73] A number of precincts along the rail link have been flagged for rezoning to allow higher density residential and business development.[74] This provides the NSW Government with the opportunity to utilise methods of value capture to recoup a portion of the government project costs. This opportunity formed part of the key recommendations of a 2008 report by an international expert panel to the project team of the North West Metro.[75]

Increased buyer activity is already underway along this corridor according to a McGrath Real Estate report.[76] In the year to June 2013 Sydney's four most active suburbs, in terms of housing sales, were located along – or in close proximity to the North West Metro corridor.[77] Kellyville, the site of a new station with 1,200 commuter parking spaces, was Sydney's most active suburb, recording 587 house sales for a median price of $815,000.[78]

FIGURE 7. SYDNEYS MOST ACTIVE SUBURBS



Source: *McGrath Real Estate*[79]

McGrath real estate estimates that 70,000 new dwellings will need to be constructed along the North West Corridor to accommodate growth over the next period of Sydney's development.[80] The median house price for the Kellyville area in 2013 was over $800,000. This report estimates that, in the current housing market, at least 50 per cent of new dwellings in the Kellyville area would be valued at $800,000 or more. That is 35,000 homes valued at or over $800,000. If the NSW Government were to introduce a 2 per cent levy on all new dwellings purchased at or over this price within the North West Metro corridor and it is assumed that all properties are valued at a constant $800,000, that could generate a revenue for the government of around $560 million. At an extremely conservative property valuation, this represents around 7 per cent of the Sydney Metro North West's total capital costs. If a similar system could be implemented on existing dwellings and industrial and commercial land the costs recouped by government could be significant.

There is an opportunity in Australia to look at methods of value capture, especially on large scale transport infrastructure projects taking place in a number of urban centres across the country. This report recommends that the Commonwealth and State Governments should undertake further research into value capture methods as a mechanism of funding infrastructure projects or recouping the large capital expenditure costs that are associated with major infrastructure projects. This is an area for exploration that should be taken seriously by governments looking for more efficient ways to encourage economic growth, promote urban renewal and construct more liveable and sustainable urban centres; all with a smaller impact on government budgets.

5.3 Improving the Utilisation of Land Corridors

A better utilisation and capitalisation of transport corridors would provide extra revenue that could ultimately reduce the overall cost of the project. According to the NSW parliamentary inquiry into rail corridor utilisation in February 2012, the land immediately adjacent to rail lines owned by the government "may be suitable for uses beyond the traditional realm of rail corridors."[81] A report by the SMART Infrastructure Facility at the University of Wollongong estimates that the development of corridor and rail lands at stations and other installations can yield a 10 per cent land value uplift.[82]

The NSW business chamber recommends that government agencies and Railcorp look for more opportunities for this type of investment and development of rail corridors. They also suggest that the government should consider what type of development they wish to have and signal this early on – no later than the start of the tender process. A more efficient utilisation of transit infrastructure would come from a mixed use of the land, rather than intensive land use of any kind, since this would, "contribute to a more balanced and consistent passenger throughout different times of the day and week."[83]

The map below illustrates the protected and unprotected land corridors that have been identified by the NSW Government in its Long Term Transport Master Plan.[84] There is ample opportunity for these corridors to be utilised through commercial and light industrial land use that would provide uplift in government owned land value. If the NSW Government could act to ensure the useful preservation of this land it would represent a large windfall and contribute significantly to lowering the costs of future infrastructure projects.

CASE STUDY

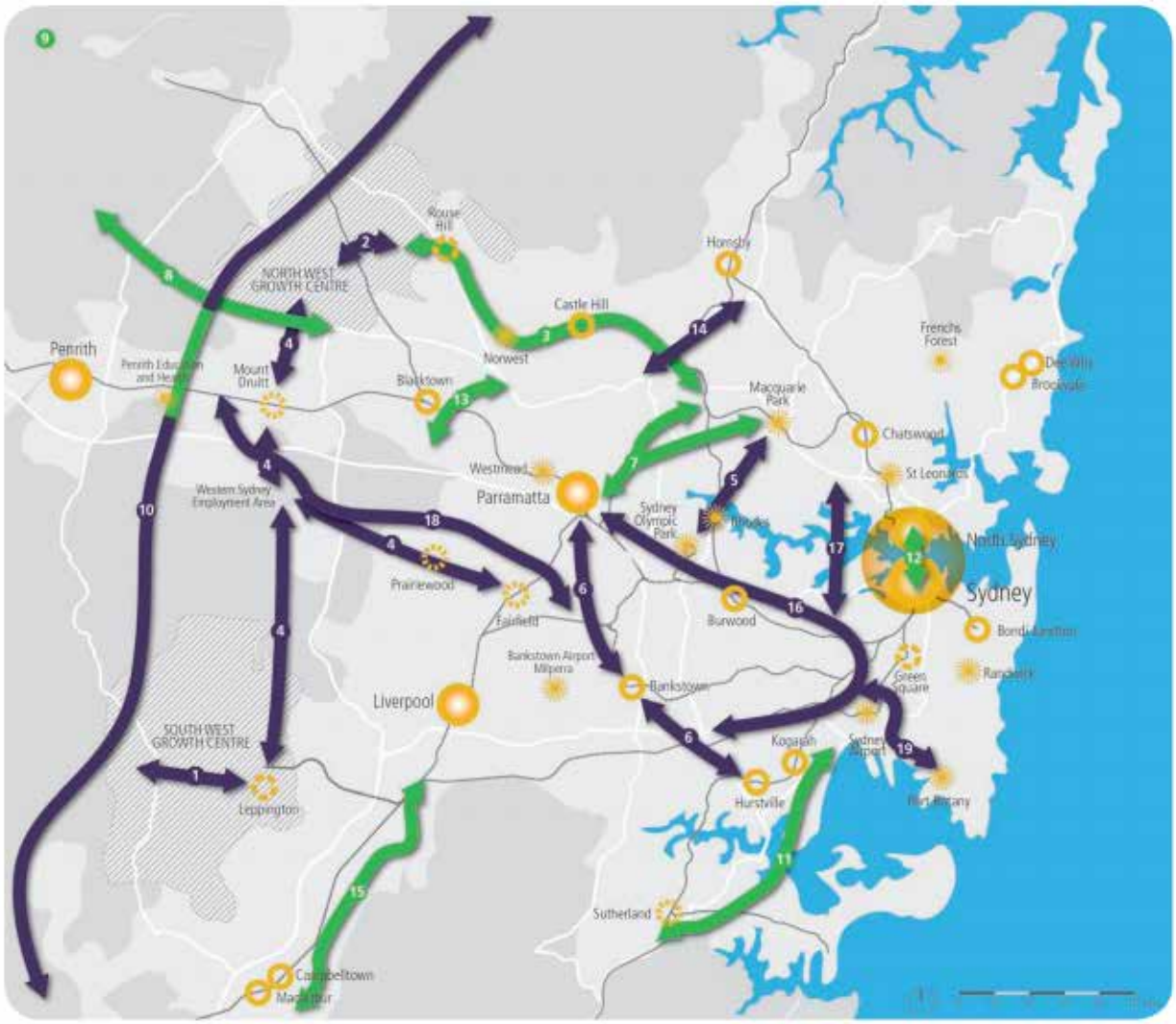
Ontrack New Zealand

In New Zealand, Ontrack, a passenger rail provider, allows companies to install and maintain gas pipes, electricity cables and phone lines along their rail corridors.

Private access to the corridor is granted through a permit system, where permits are issued based on the economic and social value that the utility will deliver for the state.

Infrastructure Partnerships Australia's submission to the NSW parliamentary inquiry recommended that, "the NSW Government should invite the private sector to bid for the opportunity to use under-utilised land within and adjacent to existing rail corridors."[85]

FIGURE 8.
PROTECTED INFRASTRUCTURE CORRIDORS WITHIN GREATER SYDNEY.



Source: *Transport for NSW*[86]

Concluding Remarks

Australia is now on the verge of a new era of infrastructure development. To keep pace in the globalised economy it is imperative that government is able to work with the private sector across jurisdictions in order to be able to build, operate and maintain innovative, effective and efficient infrastructure solutions.

Infrastructure financing, planning, development and delivery is complex, and while the opportunities for cost savings may seem elusive and difficult to harness, the recommendations put forward in this report provide a number of options that begin this process.

This report has built upon previous research by The McKell Institute on the infrastructure challenge in Australia. The McKell Institute's 2014 report on infrastructure funding, *Getting Us There: Funding the Infrastructure of Tomorrow*, which illustrated the challenges associated with sourcing funding for necessary infrastructure projects, tabled a suite of reforms that would meet this challenge. This report has added to *Getting Us There*, demonstrating five key areas of reform that could minimise the overall costs of infrastructure in Australia, and minimise the strain on already stretched funding sources.

Ensuring a pipeline of projects that have secured both political and community consensus is the first step. In ensuring this, many of the major cost drivers of producing public infrastructure can be reduced. An ongoing construction process across Australia will help move the country and the economy forward into the 21st century, help job creation and ensure our economy operates efficiently and competitively on a global scale. To do this the inherently political nature of infrastructure development must be overcome and community consensus must be achieved. This will only occur through effective consultation and communication.

A project pipeline will also aid in creating efficiencies in the planning of major infrastructure projects. It will give governments confidence to purchase and preserve land corridors in the knowledge that there is a defined purpose for the land and will aid in reducing cost pressures for major projects by ensuring land has been reserved in advance.

The private sector has a major role in public infrastructure provision. The role of government is to procure private sector involvement at the most affordable price. This includes addressing inefficiencies in the project bidding phase and seeking innovative solutions for acquiring project finance. These techniques can contribute valuable efficiency gains to the process of public infrastructure provision.

Ensuring that Australia's construction workforce is mobile and efficient will also contribute to reducing costs. Ensuring a national licensing system is in operation in Australia should be a major objective of the state governments. It is imperative that this system is based on best practice and does not seek a lowest common denominator as a target. Our labour force should be highly skilled and highly

mobile. This would enable a number of burdensome licensing costs to be eliminated, and mean that firms can operate across jurisdictions more effectively, with the administrative costs of skilled labour subsequently decreasing.

Finally, governments should seek innovative ways of capitalising on the increase in land values around new and updated infrastructure developments. This can be done through a reform of land tax or through the use of small levies that, through economies of scale, can ensure large sources of revenue for governments. This revenue can be reinvested in further infrastructure development.

Experts within the public and private sectors should not be averse to exploring innovative methods of reducing the costs of procuring, developing and delivering infrastructure. A genuine, honest conversation should be had with the public, outlining how these innovations will shape their daily lives in order to maintain trust and confidence in government's ability to deliver major public infrastructure at acceptable costs to the budget and the economy. Once trust is assured, governments should move confidently into the future with a clear directive and plan for developing and defining our future cities and, by extension, our economy.

Appendix A

Outline of costs of single and multiple licensing system and projected economic benefits of trade license harmonisation.

1. Cost of single vs multiple licensing systems

ACTIVITY	COST UNDER CURRENT MODEL	COST UNDER SINGLE SYSTEM
Online applications	$4.5 million	$300,000
System development-National changes*	$42 million	$3 million
Change management/training	$10 million	$2 million
Data migration**	$1 million	$1 million
Managing external print vendors	$1 million	$100,000
Compliance management/system development	$15 million	$1 million
Data harmonisation and de-duplication (annually)	$700,000	Not required
System maintenance (annually)	$2.1 million	$700,000
Ongoing Support (annually)	$6 million	$850,000
Licence fee (annually)***	$3.5 million	$3.5 million
TOTAL	**$85.8 million**	**$12.45 million**

** Includes: batch, webservices development and maintenance; system auditability; reporting tool development and maintenance; and alerts and notifications.*

*** Includes jurisdiction cost and GLS coat *** Based on 500,000 licenses @$2.70*

2. Economic benefits estimates across 4 industries, proposed by COAG as the first transition stage

OCCUPATION	TOTAL NATIONAL IMPACT			
	ONGOING NET IMPACT	ONE-OFF TRANSITION COSTS	10-YEAR NET PRESENT VALUE (NPV)	COST-BENEFIT RATIO OF NPV
PROPERTY	$96.66m pa	($18.46m)	$611.45m	15.03
PLUMBING AND GAS-FITTING (3 TIER, SUB-OPTION 2)*	$52.19m pa	($23.74m)	$318.41m	8.13
REFRIGERATION AND AIR-CONDITIONING*	$7.77m pa	($1.85m)	$37.73m	2.81
ELECTRICAL	$61.69m	($31.08m)	$374.22m	8.59

Source: *NOLA*[37]

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