

# JUNE 2013 NATIONAL INFRASTRUCTURE PLAN



Australian Government  
Infrastructure Australia



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**Front cover photo:** The Overland between Melbourne and Adelaide.

**Inside cover photo:** Brisbane City at night, Queensland.

**Back cover photo:** Hobart City on a clear winter day, Tasmania.



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# 01

## CHAIRMAN'S MESSAGE



Sir Rod Eddington AO, Chairman, Infrastructure Australia.

It is my pleasure to present the national infrastructure plan.

Australia and its regions are undergoing profound change. We face challenges not seen or contemplated by our predecessors.

By 2020, Asia's economic output will be larger than Europe's and North America's combined.<sup>1</sup> This gives us enviable access to dynamic emerging markets, and it will accelerate changes already occurring in our economy, our environment and in the way we live.

A rapidly developing Asia will generate new opportunities to lift our standards of living as demand grows for Australia's mineral and agricultural exports.

At the same time, Australia will face constraints on public spending, a changing climate, and a growing, ageing population. Within 50 years our population will double;<sup>2</sup> before then, we will have half as many workers for every person over 65 years old as we do now. And there is a deep disconnect between the infrastructure we want, and the infrastructure we are prepared to pay for.

The national infrastructure plan outlines the major infrastructure reforms that are needed to lay the foundations for a more productive Australia over the next 50 years.

Productivity growth improves people's lives in many ways, lifting living standards across the economy as our population ages, and creating wealth and wellbeing. To capitalise on our productive capacity, we must make the best use of the infrastructure we have, and invest in the right infrastructure, at the right time.

The national infrastructure plan is not a long list outlining 50 years' worth of projects. It is a plan focused on the changes we should make to the way in which we use, invest in and deliver economic infrastructure.

It is reforms, often simple and sensible in their ideology but challenging in their execution, which are our priorities in laying the foundations for a more productive Australia over the next 50 years.

Some of these reforms have been around for many years. For example, the idea of creating one national freight network that would allow freight to be transported efficiently across borders and operate to a single set of rules was first proposed in 1898, around 115 years ago. It is time we got on with delivering them.

We know that Australia cannot afford to have a short term focus. We cannot continue to operate with a business as usual mentality delivering small, incremental changes or we will miss the opportunities presented to us as we enter the Asian Century. In doing so, there should be no place for those who resist change out of self-interest; we should instead look to those who will lead Australia to greater prosperity.

Big national challenges need bold reforms. Reform means change. We need to make changes in the way we approach infrastructure investment, from our Government approval processes to identifying how we pay for infrastructure.

This plan therefore is in-step with the work of other advisers such as the Productivity Commission, the Business Council of Australia, and the Council of Australian Governments' Reform Council, who have each called for big reforms to achieve big aspirations for our country: productivity, economic growth, and social wellbeing.

Focusing on the right reforms will help us to use existing infrastructure more efficiently, choose the best projects, improve the way projects are funded and used, and involve private players more in the ownership and management of traditionally publicly owned assets by recycling capital to fund new infrastructure. This will mean expanding the role of the private sector and a more focused role for Governments.

These reforms, however challenging, will leave Australians better off – with more capable Governments, better planned infrastructure that meets their needs, and more sustainable, affordable transport options.

This national infrastructure plan sets the direction for Australia's infrastructure sector. It acknowledges that we must harness the next wave of funding reform, develop a national infrastructure market, ensure better use of existing networks, fund new investment and improve service delivery.

It sets out our consideration of priority investment projects as well as priority assets that could be made available to recycle capital – and, noting that the value of proposed priority investments

this year is more than \$80 billion,<sup>3</sup> while the potential value of assets that can be recycled is at least \$100 billion,<sup>4</sup> it sets the agenda for a national debate on how we can meet the gap in infrastructure funding.

Over the last five years, the quality of Australian project proposals to address nationally significant problems has improved, a national long term strategy has been developed for ports and the land freight network, work has begun on Australia's infrastructure financing needs and Building Australia Fund monies have gone to high value infrastructure projects.

Despite these achievements, there is a looming infrastructure funding task, a national productivity challenge, and abundant opportunities to grasp as strategic and economic weight shifts towards Australia's immediate neighbourhood. It is worth repeating a question I posed back in 2011:<sup>5</sup>

"Are we prepared to pay for our infrastructure – where does Australia stand?

As a country and a community, we:

- are reluctant to increase Government debt (although our national debt levels are amongst the lowest of any developed country);
- balk at raising taxes to pay for better infrastructure and services;

- are uncomfortable with the 'user pays' concept (as seen in opposition to the use of tolls to fund some roads, or increases in utility charges to pay for necessary capital investment and maintenance);
- are 'against' capital recycling...to fund other infrastructure.

Yet we are concerned about congestion, we are concerned about the health and security of our water supplies, we are concerned about the prospect of electricity 'brown outs' and we recognise the need to modernise our telecommunications.

There is a profound disconnect here."

We need to turn the reforms we have long talked about into actions.

I wish to thank the Australian Government for its ongoing support for Infrastructure Australia's mandate to advocate infrastructure reform and investment, and thank our small team in the Infrastructure Coordinator's office for their ongoing efforts to provoke reform and public debate on the issues that matter.

**Sir Rod Eddington AO**  
**Chairman, Infrastructure Australia**





Port of Melbourne, Victoria.



02

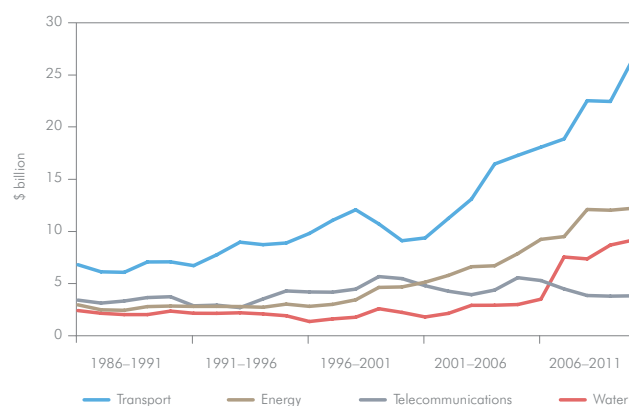
# AUSTRALIA: GET READY

# A COMMENDABLE NUMBER OF NATIONAL LEVEL REFORMS HAVE BEEN IMPLEMENTED IN THE TRANSPORT, ENERGY AND WATER SECTORS IN THE LAST FIVE YEARS.

## Australia Today

Over the past decade, Australia has seen significant infrastructure development. Most notably, transport infrastructure construction has increased two and a half times, with over \$22 billion in engineering and construction activity occurring in 2009-10.<sup>6</sup> The national infrastructure construction schedule shows that a large pipeline of major construction activity is underway across Australia, with major infrastructure investment across the energy and water sectors also (refer Appendix E).<sup>7</sup>

Figure 1: Infrastructure construction activity



Source: Department of Infrastructure, Transport and Regional Economics 2012a, Australian Infrastructure Statistics Yearbook 2012.

Nonetheless, we still face a significant infrastructure deficit, estimated at around \$300 billion. In the immediate future, Government budgets are tightly constrained.

This makes the stakes much higher when it comes to selecting the right projects for the nation, to ensure the best possible use of limited public funds, and to harness a wider range of solutions than just large capital construction projects.

The national response has been two-fold: to drive a genuinely national focus on long term strategic investment in infrastructure, planning and delivery; and to push on with difficult infrastructure reforms.

A commendable number of national level reforms have been implemented in the transport, energy and water sectors in the last five years.

Likewise, a strategic approach to nationally significant infrastructure has been established at the national level in partnership with states and territories, to promote infrastructure investment and reform to meet our long term social and economic objectives.

Infrastructure Australia was established in 2008 as part of this new approach, and has worked with Governments, industry and the community to apply the national reform and investment framework, which has been used to assess over a thousand infrastructure proposals, and to identify more than \$80 billion of national infrastructure priorities in 2013.

To date, all of the 'ready to proceed' projects in Infrastructure Australia's first infrastructure priority list have received funding from Australian and State Governments. A number of other projects have also received construction or development funding.

New national strategies have been developed to promote productive infrastructure networks, with the first ever national ports strategy agreed to by the Council of Australian Governments in 2010, and the development of the national land freight strategy.

There is evidence of more effective partnerships, and better strategic planning of projects. More than ever before, evidence based, cost-benefit assessment of large infrastructure projects is becoming commonplace, and is expected by the community.

The Infrastructure Finance Working Group – a sub-committee of the Infrastructure Australia Council – was tasked in 2011 with identifying barriers to private investment in infrastructure and developing options to encourage greater private sector investment. The Working Group's report Infrastructure Finance and Funding Reform, recommended that Governments adopt reforms to how infrastructure is funded, planned and prioritised, and to promote a more efficient capital market.<sup>8</sup>

However, it is still cause for real concern that not all major projects in Australia are subject to full economic assessment. A full economic assessment will ensure the right infrastructure projects are delivered, and provide the best value for money.

Infrastructure users likewise do not always pay the true price of what they use, leading to greater congestion and overuse. Much of Australia's infrastructure that is owned by Governments struggles with operational inefficiency and underinvestment.

Whilst much progress has been made, Infrastructure Australia's work is far from done.

Australia must continue to improve the way it invests in infrastructure; and it must implement the reforms that will ensure this infrastructure is used as efficiently as possible.

A truly long term infrastructure agenda needs genuine partnerships between Governments and industry, and it needs to be accountable to the community.



Solar panel installation, Adelaide,  
South Australia.



# AUSTRALIA'S INFRASTRUCTURE NETWORKS NEED TO BE PRIMED TO RESPOND TO THE CHALLENGES AHEAD.

## Australia and the Asia Pacific region face profound challenges over the next 50 years.

Asia – our closest neighbour – is rising quickly as an economic and strategic force in the world. Its developing, urbanising population is driving demand for Australia's resources and agriculture on one hand, while supplying cheaper manufactured goods on the other.<sup>9</sup>

Here at home, Australia's ageing population will present challenges for national productivity, by reducing our productive capacity and constraining Government revenue in ways that make it harder for Governments to be responsive to the infrastructure needs of our changing economy.<sup>10</sup>

Climate change will impact on Australia's agricultural land and productivity, and increase the vulnerability of our agricultural sectors to extreme weather events.<sup>11</sup>

A challenge for leadership is to ensure that Australia can make the most of its opportunities when it chooses to do so. Huge economic and social growth has shaped our cities and regions in the past two centuries and our natural environment has underpinned economic growth.

Australia's infrastructure networks need to be primed to respond to the challenges ahead. These big shifts demand a far-sighted response for Australia to remain competitive and to seize opportunities in the Asian Century.

How we invest in and manage Australian infrastructure networks today is our response to these challenges. Infrastructure – the right infrastructure, used well, and governed well – enables us to compete, to trade with the world, and to build higher living standards in a sustainable way.

Our best response is to ensure we confront the challenges holding Australia back and press ahead with the necessary reforms and investments to deliver the infrastructure that will make us great.

The national infrastructure plan identifies the reforms and priority infrastructure that Australia needs to ensure our infrastructure networks can take advantage of the opportunities ahead.

# LOOKING AHEAD TO 2050, GLOBAL FOOD IMPORTS BY ASIA WILL GROW BY US\$470 BILLION, INCREASING AUSTRALIAN AGRICULTURAL EXPORTS BY 140 PER CENT.

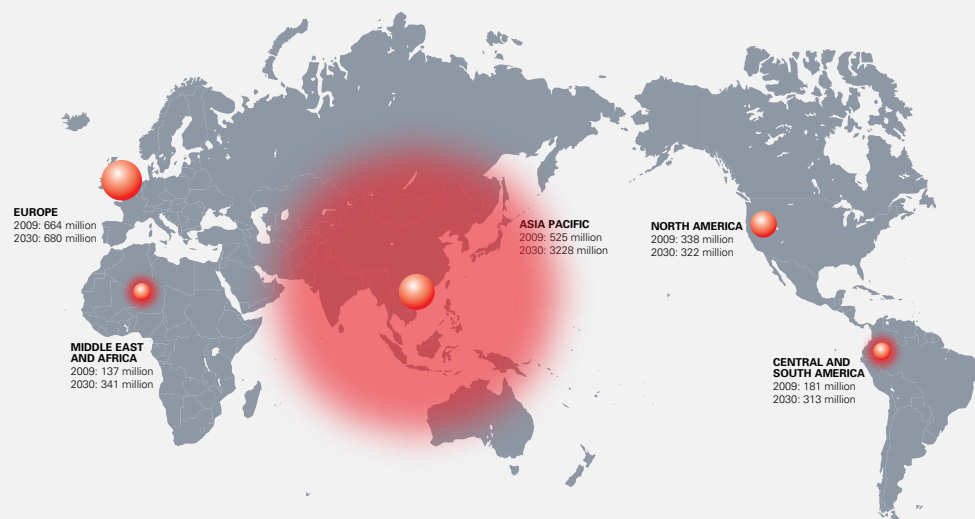
## The Global Rise of Asia

By 2050, Asia will be the centre of global commerce, producing over half of global output.<sup>12</sup>

The population of the Asia Pacific region will increase six-fold between 2009 and 2030. It will be the largest regional market in the world.<sup>13</sup>

Rapid urbanisation across Asia will support increasing living standards. The rate of urbanisation in China is 100 times the size and 10 times the speed of Britain's Industrial Revolution.<sup>14</sup> By 2050, average Asian incomes will be equal to European incomes today.<sup>15</sup>

Figure 2: Growing consumer markets in Asia



Source: Australian Government 2012, *Australia in the Asian Century – White Paper*.

These changes have widespread implications for the Australian economy, and represent big opportunities for Australia to play a key role in the region. These opportunities are already upon us, with Australia chairing and hosting the Group of Twenty Finance Ministers and Central Bank Governors (G20) in 2014 and taking an active role in the Asia-Pacific Economic Cooperation (APEC), the primary organisation for promoting trade and economic cooperation within the region.

The G20 recognises the importance of infrastructure investment to help boost productivity, growth and jobs. It is considering ways to improve the international investment climate and work will likely be developed during Australia's G20 Presidency in 2014.

Strong Asian demand for our resources saw our mineral exports nearly triple in the decade to 2011.<sup>16</sup> Education service exports doubled in value every five years to \$18 billion in 2009/10<sup>17</sup>, with our largest buyers being China, India and the Republic of Korea.<sup>18</sup> Demand for Australia's resources is expected to continue to grow.

Looking ahead to 2050, global food imports by Asia will grow by US\$470 billion, increasing Australian agricultural exports by 140 per cent.<sup>19</sup> Our tourism industry will benefit as more and more tourists visit from China, South Korea, Japan, Malaysia and Singapore.<sup>20</sup> Our service industries will grow, including in construction and utilities.<sup>21</sup>

To take best advantage of opportunities arising from the growing Asian middle class, Australia will need to refine its approach to financing and funding infrastructure.

Figure 3: Australian real Gross Domestic Product and industry composition



Source: Australian Government 2012, *Australia in the Asian Century – White Paper*.

International trade will contribute to an expected doubling of the road freight task, tripling of the shipping task and quadrupling of the rail and air freight task into the future.



Flinders Street Station, Melbourne, Victoria.



# IMPROVING THE WAY AUSTRALIA BOTH USES AND PROCURES ITS INFRASTRUCTURE WILL CONTRIBUTE TO GREATER ECONOMIC PROSPERITY AND ENHANCED LIVING STANDARDS FOR ALL AUSTRALIANS.

## Domestic Challenges

### A Growing, Ageing Population

As well as external drivers, significant changes within Australia are shaping our future economy.

By 2050, Australia will have 36 million people, 50 per cent more than we have today. By 2063, we will have double the number we have now.<sup>22</sup>

The share of working age people will almost halve by 2050. For each Australian aged over 65, the number of working aged people will drop from five (2010 levels) to 2.7 people.<sup>23</sup> In less than a century, Australia will see a three-fold increase in its share of people over 65.

While policy levers such as immigration are part of a national response, more people leads to greater demand for goods, services and personal transport, and increased demand for housing, energy and water.

Put simply, Government finances will struggle as public spending on age-related issues and health care grows, while tax revenues languish.

The resulting fiscal gap could be close to 3 per cent of national output by 2050,<sup>24</sup> severely impacting how well Governments respond to challenges, fund infrastructure and promote higher standards of living.

### Declining Productivity Growth

As our population ages and our workforce participation declines, productivity growth is the only way to keep our economy growing and to sustainably lift living standards.

When productivity grows, so too do real incomes and living standards – our ability to pay for goods and services grows.

If national productivity increased by two per cent a year to 2050, every Australian would be \$16,000 better off a year on average in today's dollars.<sup>25</sup>

Productivity growth is the rate at which output increases for the same level of input and effort. It measures the health of our economic fundamentals – how competitive the economy is, and how well we produce goods and services to generate wealth.

The right infrastructure – used in the right way – enables more efficient production. In other words, it ensures we have the energy, water and telecommunications infrastructure needed for production, and the transport infrastructure required to move product to market.

Unfortunately, productivity growth is forecast to slow to 1.4 per cent a year over the next decade compared to 2.1 per cent in the 1990s. This means that Australia's productivity performance will be only two-thirds of what it was over the past decade.<sup>26</sup>

Some 58 per cent of the income growth Australians enjoyed between 2005 and 2012 was due to one-off conditions related to the resource boom. This has hidden real declines in our productivity performance.<sup>27</sup>

The worst performer has been capital productivity – reflecting large, slow investments, higher costs and inefficient capital project development.<sup>28</sup>

Well-targeted investment in physical infrastructure can provide a range of economic, social and environmental benefits. From an economic perspective, benefits accrue from productivity improvements. For example, effective transport systems lead to reduced freight and business travel costs which can lead to increased trade and competition.

Further, efficient infrastructure plays a vital role in building social cohesion. High quality infrastructure allows communities that have a range of incomes, backgrounds and demographic characteristics to access employment opportunities and health and

education resources in a fair and equitable way. This is important as social cohesion is linked to economic development, investment attractiveness and business competitiveness.

Improving the way Australia both uses and procures its infrastructure will contribute to greater economic prosperity and enhanced living standards for all Australians.

### A Changing Climate

Climate change is a long term challenge for our economy and living standards. By 2050, climate change could lower agricultural productivity by up to 17 per cent.<sup>29</sup>

Every Australian will have to pay more for food, energy and water if we do not adapt to climate change and manage its impacts.

If we are going to mitigate climate change we will need to find cheaper ways to diversify our energy mix to include renewable energy and reduce our reliance on coal. We will need to boost the resilience of our infrastructure networks to the effects of climate change and every effort we make will have cost impacts – but these higher costs in the short term will pay off with lower costs in the long term.





Traffic at the intersection of Victoria Road and The Crescent, Sydney, New South Wales.



03

**BIG CHALLENGES  
NEED BOLD  
REFORMS**

# AUSTRALIA HAS AN INCREDIBLE OPPORTUNITY TO BE A VERY COMPETITIVE, GLOBAL LEADER IN THE ASIAN CENTURY.

## Guiding our investment in Australian infrastructure

Australia has an incredible opportunity to be a very competitive, global leader in the Asian Century. We need our infrastructure to be working at its most efficient.

Australia needs to fix the infrastructure bottlenecks that will otherwise hold it back.

We need to remove the obstacles that get in the way of planning, governing and delivering the right infrastructure when we need it.

This national infrastructure plan outlines bold reforms to address our national infrastructure backlog. Without bold reforms today, Australia will miss opportunities tomorrow, because we are too slow, too budget constrained, or simply not ready.

### Aspirations

- **Our connected, global cities** will adapt to and boost economic growth, be well planned, well designed and well governed, and have world-class transport systems.
- **Our regional infrastructure** will meet international demand for Australian products and exports in a timely and efficient way, boost regional communities' access to economic opportunities and drive growth and productivity.

- **Our sustainable, national energy market** will meet the challenge of climate change, affirm our position as a net energy exporter, support economic activity and affordability, and provide confidence for investment, innovation and participation.
- **Our outward-looking ports and national freight network** will provide long term certainty for ports and freight networks in our regions and cities and boost our competitive global gateways to Asia to meet the growing domestic and trade freight task.
- **Our essential Indigenous infrastructure** will be more effectively provided as we better coordinate planning and investment across Governments for remote Indigenous communities, benchmarking and measuring the outcomes of investment, and using this information to improve future decisions.
- **Our water supplies** will be secured by harnessing market mechanisms to drive investment and sustainably manage scarce resources and the impacts of climate change. We will make changes to the delivery and governance of water to provide water security in urban and regional communities.
- **Our telecommunications networks** will be world-leading, connecting regions with cities and with the world, and activating the digital economy across the Australian continent.

### Targets

National targets will guide our investment in infrastructure, both in respect of reform and capital infrastructure investment – these targets will help us to ensure we are spending our resources on actions that will create, not destroy, value for Australia.

These targets should at a minimum return us to historically higher average national growth and productivity rates. With the right infrastructure and policy reform contributing to improved economic performance, there is no reason why Australia cannot:

1. Enhance national productivity by more than 2 per cent a year
2. Grow the economy by more than 3 per cent a year<sup>30</sup>
3. Increase the scale and distribution of private infrastructure investment across the economy
4. Eliminate the avoidable cost of congestion in our cities



Port Adelaide Inner Harbour, South Australia.





Wivenhoe dam and spillway, Queensland.

# THERE IS A FUNDAMENTAL DISCONNECT BETWEEN THE INFRASTRUCTURE WE WANT AND OUR WILLINGNESS TO PAY FOR IT.

## The infrastructure funding challenge

There is a strong link between good infrastructure decisions and the long term performance and fairness of our economy and society. The lack of available infrastructure funding is the major constraint to bridging the gap between the infrastructure we have and the infrastructure we need.

If we invest in the infrastructure we need, we can enjoy lower transport costs, lower congestion costs, and create more competitive industries. That ultimately means that we pay less for the goods and services we value, have more recreational and family time, and bring about higher standards of living and the high value jobs that a stronger economy can deliver.

Australia's infrastructure will struggle to keep pace with future expected demand if we do not find better ways to deliver the infrastructure we need. We are already experiencing capacity constraints and traffic congestion in some of our biggest and busiest cities. As highlighted in the Australian Government's Third Intergenerational Report, these challenges will only compound in the future.

There is not an endless supply of funding for infrastructure. To bridge the funding gap, a good starting point is tackling two hurdles to getting the infrastructure we need.

The first hurdle is accepting that Government budgets do not have sufficient headroom to fund all the infrastructure we require, even if they increase their borrowings.<sup>31</sup>

The second hurdle is a fundamental disconnect between the infrastructure we want and our willingness to pay for it – either through higher taxes or user charges.<sup>32</sup>

Part of the answer is that Governments will need to get smarter about spending the available funds they do have, recycling capital on their balance sheets into new assets, and putting in place the right conditions for the private sector to finance more infrastructure through user charges.

It is up to governments to ensure that private capital can receive a proper rate of return, to meet their responsibilities to their investors, such as superannuants.

Australia will face a chronic undersupply of infrastructure unless Governments are innovative with using available funds effectively, and the community gets used to paying for the infrastructure it wants.

## Seven bold reforms

We face big challenges, and we need bold reforms.

The seven reforms set out in this chapter are aimed at boosting our infrastructure performance – and our capital productivity – across the country.

These seven reforms sound like simple ideas. However experience proves they are difficult to implement.

- 1 Establish a Single National Infrastructure Fund
- 2 Use Government Budgets Innovatively
- 3 Recycle Capital for New Infrastructure
- 4 User Pays – User Says
- 5 Reduce Layers of Government
- 6 Be World Leaders in Project Governance
- 7 Smarter, Leaner Infrastructure Procurement



## A NATIONAL INFRASTRUCTURE FUND WITH A SINGLE ASSESSMENT AND PRIORITISATION PROCESS WOULD TRANSFORM THE QUALITY AND EFFICIENCY OF INFRASTRUCTURE SPENDING AND PUBLIC TRANSPARENCY.

### Reform 1: Establish a single national infrastructure fund

Australia cannot afford to invest in the wrong projects. Investing in infrastructure that does not deliver real benefits remains the biggest risk to limited infrastructure budgets.

While Government budgets alone will not bridge the infrastructure gap, Australian Governments do spend a significant amount on infrastructure. Public sector construction activity represents around 1 per cent of Australia's GDP<sup>33</sup> representing infrastructure engineering construction activity of around \$14 billion in the 2011 financial year.<sup>34</sup>

There is over a hundred billion dollars worth of Commonwealth Government investment for economic infrastructure, across the nation building program, National Broadband Network development, community infrastructure grants, clean energy funding, and grant programs for water, energy and regional infrastructure.

These Commonwealth funds and investment sources have overlapping purposes, different assessment frameworks, and different decision making mandates.

Consolidation of Commonwealth funding sources into a national infrastructure fund with a single assessment and prioritisation process would transform the quality and efficiency of infrastructure spending and public transparency.

It would mean that across different types of infrastructure, only the best projects – the ones that make a positive contribution to Australia's economy – would be funded and delivered.

A single assessment and prioritisation framework – Infrastructure Australia's reform and investment framework – will ensure all major projects are informed decisions, supported by a sound economic case, and tested with a robust, independently assessed cost-benefit analysis.

It would also ensure Australia moves away from a project-by-project view of infrastructure development and focuses on big-picture national priorities. For example, in Singapore, every transit project is assessed against the national goal of supporting urban density and contributing to a 70 per cent public transport target.<sup>35</sup>

The ultimate outcome would be much better use of available funding, and greater benefits for every dollar spent. Australians should expect no less.

The impacts of these varied approaches include inefficient program costs, less transparency over how funding is administered and allocated, variable levels of rigour, and inconsistent value for money outcomes.

State Governments also have a wide range of infrastructure funding programs, with varying assessment processes. In Queensland, the Government's recent response to the Independent Commission of Audit into Queensland Finances outlined an intention to consolidate state infrastructure funding. Other State Governments could advance a similar approach.



Construction of the South Road Superway  
– Adelaide's north-south transport corridor  
between the Port River Expressway and  
Regency Road.



# THE AUSTRALIAN GOVERNMENT CAN AND SHOULD BE MORE INNOVATIVE WITH HOW THEY USE THEIR BUDGET CAPACITY TO GET INFRASTRUCTURE PROJECTS OFF THE GROUND, AND TO MAKE ITS INFRASTRUCTURE BUDGET GO FURTHER.

## Reform 2: Using Government balance sheets more innovatively to spread available funding

The days where Commonwealth infrastructure funding is invariably a simple state grant should come to an end.

These days, the Australian Government can and should be more innovative with how it uses its budget capacity to get infrastructure projects off the ground, and to make its infrastructure budget go further.

The grant-based model for funding infrastructure projects lacks appropriate incentives to encourage private sector investment outside of the actual delivery of the project.<sup>36</sup>

Implementing funding reforms of this nature represents a new way of doing business. It requires a considerable change in mindset from the current grants-based model of Australian Government investment.

Moving towards more innovation in funding also represents a significant opportunity for the Australian Government to be more proactive in connecting with the private sector to bring new infrastructure projects to market.

The Australian Government could leverage more private investment in infrastructure by structuring its contributions and funding conditions to state and territory projects differently.

For example, it could:

- Provide seed or viability gap funding to bridge the gap that prevents an otherwise commercially attractive project with strong economic benefits from proceeding;
- Take on some project risk or provide project guarantees in certain circumstances, for example, guaranteeing patronage risk, establishing an insurance provider, or guaranteeing a portion of private sector debt for a private public partnership;
- Provide a portion of lower ranked debt to reduce the risk and cost of the remaining private debt; or
- Establish an ongoing broker capability to bring together the public and private sectors, as it has done with the Moorebank Intermodal terminal project.

These initiatives would promote a better developed infrastructure market, and re-imagine the role of Government in advancing critical infrastructure projects that otherwise would not be affordable.

However, without detailed consideration of these new models, the Australian Government could be exposed to significant financial risk, given the complexity of the new arrangements. Substantial investments in skills and expertise are needed to build the capacity of the Australian Government to effectively deliver such reforms according to best practice and produce the optimal financial arrangements for each project.

Adopting a similar approach to Infrastructure UK, a specialist commercial unit, could ensure the required due diligence is conducted that takes into account the specific circumstances of each project on a case-by-case basis.

# TODAY, MORE THAN \$100 BILLION OF COMMERCIALY SUITABLE INFRASTRUCTURE ASSETS SIT WITHIN AUSTRALIAN GOVERNMENTS' INFRASTRUCTURE INVESTMENT PORTFOLIOS.

## Reform 3: Recycle capital

Make the necessary changes to encourage Governments to efficiently recycle capital in mature assets into new, much-needed infrastructure

Today, more than \$100 billion of commercially suitable infrastructure assets sit within Australian Governments' infrastructure investment portfolios.<sup>37</sup> Recycled assets could include airports, roads, water services, ports, freight rail and electricity generation, transmission and distribution. Together, their value is large enough to fund a significant proportion of our most critical infrastructure priorities.<sup>38</sup>

We have the opportunity to make these assets work harder for us and to turn our national infrastructure backlog into a national pipeline of long term infrastructure development.

By recycling capital to new infrastructure investment, we can free up Government financial commitments and release funds to make new infrastructure investment possible.

This strategy has been successfully applied in Australia already, with Victoria and South Australia having led the way.

Recently, the New South Wales Government awarded a 99-year lease on Port Botany and Port Kembla to a private consortium valued at over \$5 billion. Much of these proceeds will be invested into the Government's infrastructure fund for new infrastructure, including new motorway infrastructure, and regional infrastructure projects in the Illawarra.<sup>39</sup>

Likewise, the sale of Hobart Airport enabled the Tasmanian Government to develop the Brighton Transport Hub and invest in new agriculture water storage and irrigation.<sup>40</sup>

The Queensland Government's sale of a large share of QR National freed its responsibility for an estimated \$7 billion in future capital expenditure.<sup>41</sup>

The Queensland Government also finalised the sale of the Port of Brisbane in 2010, with a consortium paying \$2.1 billion for a 99-year lease on the Port, and also paying another \$200 million for the future upgrade of section 3 of the Port of Brisbane Motorway.<sup>42</sup> The Queensland Government stated that, as a result of the sale of the port, taxpayers would avoid expected infrastructure expansions at the port worth up to \$1 billion.

Governments at all levels need to consider how to maximise the value of their infrastructure portfolio – is it by owning and operating all of the assets currently held, or by transferring the capital value of suitable assets to invest in new, priority infrastructure? Many assets put under this scrutiny would not have a strong case for continued Government ownership.

Recycling capital can improve economic efficiency and reduce the price paid by consumers by lowering operational costs, improving competition and service delivery, and by removing conflicts of interest that exist between the ownership and regulation of that asset.

Asset sales such as these help to encourage investment in infrastructure by superannuation funds, which prefer to invest in established brownfield assets such as ports and airports.

Studies have shown higher labour productivity and real falls in electricity network prices in the privatised Victorian electricity

industry compared to its publicly held counterpart in New South Wales.<sup>43</sup> Similarly, evidence points to publicly owned ports delivering lower returns than their commercial counterparts due to lower efficiency or inadequate user charges, meaning taxpayers are subsidising commercial freight activity.

Tendering wharf access to private operators on the Manly to Circular Quay ferry route led to two new operators, grew patronage by some 80 per cent, and transformed a loss-making service into a profitable one.<sup>44</sup>

Despite the proven benefits of asset recycling, examples of Governments in Australia selling or leasing public assets are few and far between. If we do not make changes, individual Governments are unlikely to act for two important reasons:

- Some Government asset sales remain politically sensitive – there are genuine concerns around community access and benefits where an asset is held, either by a long term lease or sale, by a private operator.
- The large transaction costs involved limit opportunities for smaller institutional investors to participate.

Governments today have a wide range of tools they can use to protect community benefits, including regulation against unfair price increases, minimum access and service standards, and requirements to commit to key environmental outcomes.

Using these tools and through bold reforms we can address the historical challenges of asset recycling to make it the logical – and more attractive – strategy for Governments to deliver the infrastructure Australia needs. With a national infrastructure deficit and long term fiscal constraints, Governments will not bridge the infrastructure funding gap without divesting of mature assets.



CityLink is a 22 kilometre fully electronic toll road in Melbourne, Victoria.



# TO GET THE INFRASTRUCTURE WE WANT, WHEN WE WANT IT, WE NEED TO PAY MORE AS USERS.

## Reform 4: User pays – user says

Users make a direct contribution to infrastructure and in turn, get a say on the level of service provided.

While there are different ways to finance projects, infrastructure is ultimately funded or paid for by user charges or taxpayers, or some combination of both.

To date, most of Australia's public infrastructure has been largely funded by Government subsidies, with insufficient or no cost recovery at all from direct users.

This needs to change: when all taxpayers pay for infrastructure, it reduces the accountability of Governments to provide infrastructure that meets the needs of direct users. Government subsidies only go so far. To get the infrastructure we want, when we want it, we need to pay more as users.

Private investors that finance a project will seek commercial returns from users that reflect the investment risks they bear.

In general, the primary benefit of that infrastructure is that it is more often developed with users in mind, at a standard and price they are willing to pay for.

This stronger link between financiers and customers means that the infrastructure is often better suited to customers' needs, as well as helping to free up Government capacity to fund core social and economic infrastructure that would not

otherwise be developed by the private sector. Additionally, when superannuation funds invest, it provides an opportunity for Australians to have ownership in the infrastructure and earn a return on it.

The second major benefit of imposing user charges is it manages demand and better uses existing infrastructure, improving the network's productivity overall and reducing the need for costly new investment. In the United States, there is an estimated 28 to 38 per cent savings potential as a result of congestion charging on existing roads.<sup>45</sup>

Direct charging for infrastructure, such as road pricing, allocates it to higher value uses. For example, a freight company with a tight deadline for delivery may be prepared to pay a toll to reduce journey time to avoid a financial penalty for delivering goods late. A recreational driver going for a scenic drive may not place a high value on reducing journey time and would therefore avoid paying the toll by taking an alternative route.

Pricing reform can improve infrastructure use more widely across transport networks to produce sustainable network outcomes, manage existing infrastructure better and delay the need for costly new investment.

There are plenty of examples where this is done effectively. Congestion pricing in London reduced traffic by 21 per cent, increased average travel speeds by 37 per cent and reduced road emissions. Revenue raised was invested back into public transport, contributing to increased bus and passenger rail patronage.<sup>46</sup>

# AUSTRALIA NEEDS INTEGRATED INFRASTRUCTURE PLANNING ACROSS GOVERNMENTS.

## Reform 5: Reduce layers of Government involvement in infrastructure

Australia's complex Government structure delays infrastructure development and drives up the cost of Australian infrastructure.

Australia has nearly 600 different local, state and territory Governments that, together with the Australian Government, fund and plan infrastructure.<sup>47</sup> Through this multitude of players, our infrastructure development is slow and delivery risks are high, which constrains our productivity and makes our projects less attractive for potential investors.

For example, a Productivity Commission review of the upstream petroleum sector found a single liquefied natural gas project could require up to 390 regulatory approvals. Regulatory duplication and overlap involves higher costs, higher risks around deferred or cancelled projects, and lower returns. Expediting regulatory approval for a major oil or gas project by one year could increase the value of its returns by up to 20 per cent.<sup>48</sup>

Australia's transport, water and energy infrastructure form complex webs of connected services. Projects are too often considered in isolation without proper analysis of the potential impact on wider infrastructure networks.

Australia needs integrated infrastructure planning across Governments that clarifies which level of Government funds and delivers which projects. Efficiencies can be driven by clear accountability between the layers of government. This would reduce costs and attract further investment.

Overlapping environmental assessments and approvals across jurisdictions is one example of wasteful and messy duplication between levels of government. A single planning and environmental approval process is crucial for efficiently delivering significant projects. A single process would bring all approvals into one entity, standardise each step of the process, clarify the timetable for assessment, and cap the cost at each stage for applicants. It would also manage responsibly any approval of larger, environmentally-sensitive projects.

A streamlined approval process would also make Australian infrastructure projects more attractive for both local and global investors, improving our global competitiveness and increasing the availability of financing to facilitate delivery of the projects we most need.

Canada has recently done this, establishing a lead agency for all major project approvals, reducing the number of federal departments undertaking environmental assessment from 40 to three, and implementing agreements with provincial Governments that allow provincial assessments to satisfy federal requirements.

The Productivity Commission is examining this issue in its inquiry into major project development assessment processes.<sup>49</sup>

However, in the long term, we need to think about whether three levels of Government deliver the best planning, funding and delivery outcomes for nationally significant infrastructure.

# POOR PROJECT GOVERNANCE IN AUSTRALIA IS A MAJOR REASON WHY PROJECTS FAIL TO MEET THEIR TIMEFRAMES, BUDGETS AND QUALITY OBJECTIVES.

## Reform 6: Be world leaders in project governance

Resource projects in Australia are around 40 per cent more expensive than in the United States, and require 30 to 35 per cent more labour input.<sup>50</sup>

Another recent comparison shows per kilometre costs for Australian road, heavy and light rail projects toward the upper end of similar projects in developed countries around the world.<sup>51</sup>

Poor project governance in Australia is one major reason why projects fail to meet their timeframes, budgets and quality objectives.<sup>52</sup>

The delivery of major projects is challenging, with long planning horizons and complex interfaces, multiple stakeholders and the potential for significant scope changes to occur over time.

Weak project governance is one of the major causes of project failure.<sup>53</sup> It translates into higher costs, poor risk management and inadequate scrutiny of overruns, delays and other problems.<sup>54</sup>

Common failings include inadequate governance or project assurance plans, a failure to measure the performance of the project team and sponsors, gaps in project governance skills, and a lack of independence between the project governance and project delivery.

Best practice project governance is something Australia must actively aspire to. Billions of dollars can be saved where the timing, cost and quality of projects are intensively managed.<sup>55</sup>

A study of 23 major resource projects in Australia found that strong performance management of major capital projects, best practice management from concept and design through to contracting, and a project team with superior execution skills, could yield cost savings between 20 and 50 per cent.<sup>56</sup>

Against Australia's significant investment pipeline, best practice across the resources sector alone would translate to 0.6 to 2.3 per cent of additional GDP.<sup>57</sup>

The Victorian Government introduced an assessment framework for "high value high risk" projects in 2010. The framework imposes a higher degree of scrutiny and approval hurdles (for example, the need to obtain the Treasurer's approval of key project documentation) for high risk projects. Gateway reviews are mandatory for all high value high risk projects.



# BIDDING FOR MAJOR INFRASTRUCTURE PROJECTS IN AUSTRALIA IS MORE COSTLY THAN IT SHOULD BE – FOR BIDDERS AND FOR GOVERNMENT.

## Reform 7: Smarter, leaner infrastructure procurement

Australian Governments must improve their project procurement processes to manage rising cost structures, support project viability and attract private sector investment.

Bidding for major infrastructure projects in Australia is more costly than it should be – for bidders and for government.<sup>58</sup> Costly and often long bidding processes deter new entrants and reduce the competitiveness of the bids we receive. Rising costs and infrastructure delays severely impact Australia's economic potential.

In 2012, project contractors, financiers, Government infrastructure agencies and treasuries from around Australia agreed on best practice benchmarks for the procurement of major infrastructure.<sup>59</sup> Quantitative and qualitative benchmarks were set for Public Private Partnerships, and design and construct and alliance contracts. More consistent achievement of these benchmarks will bring about significant efficiencies for all involved.

There is more that can be done by Governments to make major project procurement more efficient:

- acquire specific knowledge, and expert resources for procurement;
- design procurement to align with market capability, capacity and appetite;
- undertake comprehensive procurement planning, in consultation with the market, and communication of accurate and sufficient project and procurement details;
- provide early resolution of approval processes, Government/Agency issues and project interfaces;
- minimise requirements for non-material documentation;
- provide early resolution of risks and minimise delays and changes during the procurement process; and
- establish appropriate time metrics for procurement processes.<sup>60</sup>

Government procurement and commitment to Government-led projects have a big role in providing clarity and certainty to the private sector.

In 2010 the North Queensland Bulk Ports invited the private sector to develop four new coal terminals at the Abbot Point Coal Terminal to support Galilee Coal basin development.

While the expression of interest process garnered over 30 responses from both miners and infrastructure developers, the process slowed due to a lack of funding certainty around common user assets, no provision for integrated design and environment approvals and the lack of an overall rail strategy to support supply chain capacity.

As a result, North Queensland Bulk Ports was unable to execute framework agreements with any of the shortlisted entities by the target date. A key participant withdrew citing uncertainty over costs and approval processes. The entire process was halted by the new Queensland Government in January 2013.



Murdoch station, Perth, Western Australia.





Sydney Harbour Bridge with Sydney Opera House and city skyline in the background, New South Wales.



04

# CONNECTED GLOBAL CITIES

## EACH OF OUR FIVE BIGGEST CAPITAL CITIES WILL NEARLY DOUBLE THEIR POPULATION BY 2056.

Today, Australia's capital cities consistently rank among the world's most liveable cities.<sup>61</sup> The job of Governments is to plan for the future, to make sure our cities stay on top.

Australia is an urban nation with four-fifths of our population and economic activity occurring in cities – and these intense population and economic centres are a major driver of national productivity.

Density is an economic virtue in our cities.

The closer businesses are to each other, and to a deep pool of skilled labour, the higher their productivity, with greater specialisation, more intensive knowledge transfer, and employees who are better suited to their organisation. For individuals, this proximity means lower search costs when looking for a job.<sup>62</sup>

Likewise, higher density residential areas can offer more affordable housing options with better access to services and employment, and support more liveable, vibrant communities.

Success in our cities is also a virtuous cycle, where higher living standards draw global talent, attract global businesses and investment, and boost trade opportunities.

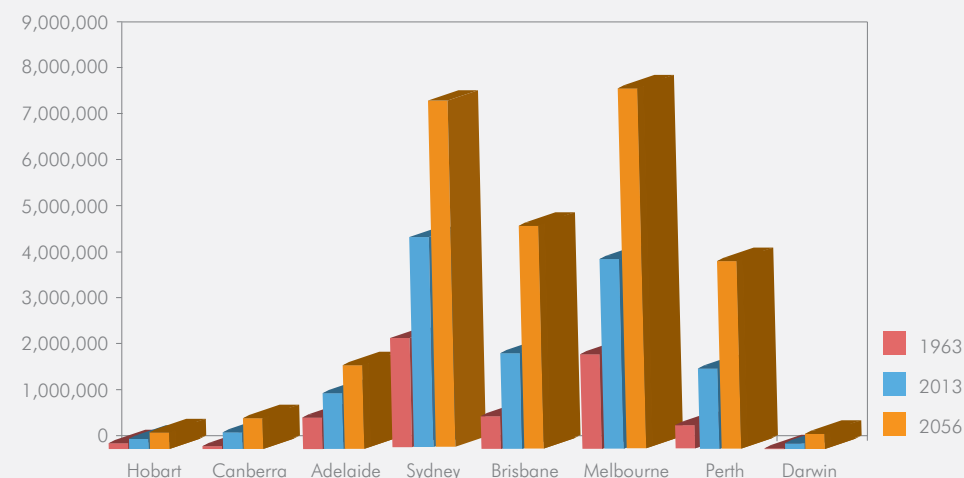
This phenomenon in cities is called 'agglomeration' – where clusters of economic activity produce bigger effects than the sum of their parts.

Urban density has a multiplier effect on economic growth, with businesses and employees thriving when located close to one another. For every doubling of job density, there is up to a 13 per cent increase in labour productivity.<sup>63</sup>

So the economic performance of our cities will make or break national productivity in the decades ahead.

Our cities face big growth challenges in the next 50 years. Each of our five biggest capital cities will nearly double their population by 2056.

Figure 4: Population growth in capital cities to 2056



Source: Australian Bureau of Statistics 2008, Population Projections, Australia – 2006 to 2101, cat. no. 3222.0.

Tram travelling along Swanston Street  
in Melbourne, Victoria.



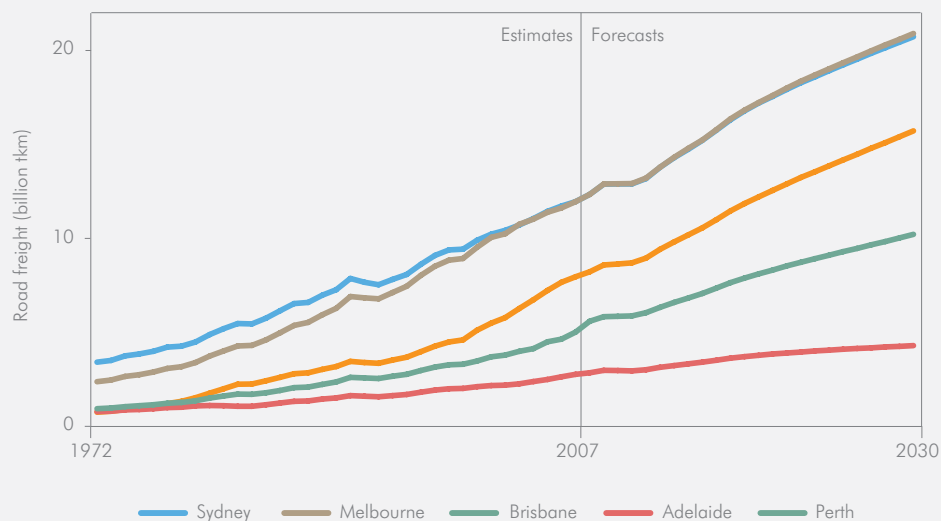




Skyline of Perth city at night, Western Australia.

The freight task in our cities will significantly increase by 2030, with goods making their way to and from our international gateways through what may become increasingly congested urban transport networks. Increasing congestion costs will erode national productivity and competitiveness.

Figure 5: Road freight task by capital city, 1972-2030



Source: Department of Infrastructure, Transport and Regional Economics 2010, *Road Freight Estimates and Forecasts in Australia: interstate, capital cities and rest of state*.

The right infrastructure will make it easier for businesses and skilled employees to access one another, reducing transport costs for businesses and enabling national industries to get their product and services to market efficiently. And it will support density, manage congestion and improve liveability and sustainability in our cities.

Australia's cities will perform better if they are affordable, sustainable, compact, innovative and well-designed places that offer high living standards.

In 2009, the Council of Australian Governments broke new ground. They agreed to an overhaul of strategic planning in our capital cities.

This agreement set in place national objectives and criteria aimed at effective partnerships across governments on investment priorities and infrastructure and land use policy, to meet the future demands of population and economic growth, climate change, housing affordability and urban congestion.

This new infrastructure agenda in our cities cannot afford to lose steam.

It will need a continued focus over the long term. Transformational city planning needs genuine investment partnerships across Government and across the public and private sectors.

## SMALL SCALE PROJECTS AND BETTER USE STRATEGIES IN GENERAL CAN OFFER HIGHER ECONOMIC BENEFITS, AND ARE QUICKER AND EASIER TO IMPLEMENT.

### Action 1: Better Use of Urban Networks

Capital cities across Australia struggle with underperforming, legacy transport and infrastructure networks, many of which were not designed with the needs of a 21st century population and economy in mind.

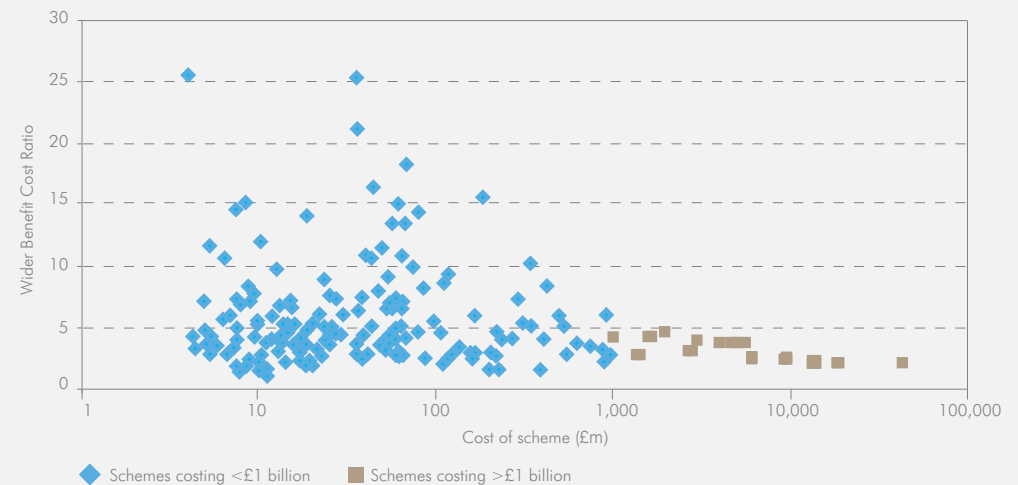
Better use of urban networks will be critical to lifting infrastructure productivity, optimising network performance, managing limited capital budgets, and deferring costly new investment in 'mega' projects.

The United Kingdom's 2006 Eddington Transport Study found that small scale projects and better use strategies in general can offer higher economic benefits, and are quicker and easier to implement.<sup>64</sup>

There is a wide range of better use strategies that can be applied to urban networks. These include:

- Re-pricing of transport to manage transport demand by location or to spread demand across different times of day.
- Smart infrastructure to manage real-time infrastructure performance. For example, retrofitting technology such as ramp signalling, intelligent transport systems and variable speed limits onto existing motorways in Melbourne, Sydney, Brisbane and Perth have the potential to improve congestion, lower emissions, and expand the effective capacity of these road networks.
- More intensive or efficient service provision, such as through public transport timetabling, coordination of bus and rail services, interchange upgrades, and rolling stock replacement.
- Transit oriented development to densify residential housing around existing transport corridors.
- Improved maintenance of existing assets to ensure these maintain their level of service over time.

Figure 6: Economic returns of smaller investments versus larger investments



Source: Eddington, Sir Rod 2006, *The Eddington Transport Study - The case for action* Sir Rod Eddington's advice to Government.

\* Costs are in a log scale.





Commuters waiting to catch a public bus on Currie Street, Adelaide, South Australia.





Kwinana Freeway south of Perth is a shared public transport and private vehicle use corridor, Western Australia.



# MERGED LOCAL GOVERNMENTS WOULD SUPPORT SUSTAINABLE TAX BASES AND MORE SUBSTANTIAL INFRASTRUCTURE INVESTMENTS.

## Action 2: Provide incentives to build higher residential densities and dense commercial centres in our cities

While greenfield development has the immediate appeal of more affordable housing, it imposes more than double the development and transport costs of infill development.<sup>65</sup> The costs of fringe expansion, which are borne by Governments and residents, are unsustainable and will reduce economic performance and liveability into the future.<sup>66</sup>

Despite this, current metropolitan plans still envisage significant greenfield growth, and standalone houses continue to dominate new housing stock. Attached dwellings make up only 28 per cent of the existing housing stock across our major cities.<sup>67</sup>

The Grattan Institute report 'the housing we'd choose' shows that people want to live in accessible locations and recognise that higher density options enable this.<sup>68</sup>

Higher dwelling densities around existing and prospective public transport corridors and interchanges will provide a more compact, less expensive and affordable city design, improve communities' access to economic and social opportunities, and make much better use of existing infrastructure. As a guide, we should aim for at least four to six storey developments along roads and routes that are well serviced by public transport, and for higher dwelling densities in larger centres.

To achieve this, incentives should be placed on Government funding for new infrastructure to provide higher dwelling densities that match the scale and associated costs of the project.

Redevelopment in established areas must go hand in hand with a focus on urban renewal measures to safeguard a high standard of living for communities and attract people to a compact living lifestyle.

Solutions will vary across cities, and may include planning and providing for more open spaces as existing areas are redeveloped, raising architectural standards to make high-density living as attractive as possible and increasing public transport capacity.

In addition, establishing dense centres of employment across cities, not just in the central business districts, will encourage agglomeration to occur in more accessible locations.

## Action 3: Consolidate local governments

In all our cities, metropolitan planning needs radical improvement. Part of the answer is to consolidate local governments.

Fragmentation prevents metropolitan local governments from being effective infrastructure partners, and weakens strategic planning of city networks.

Brisbane has five local governments for its metropolitan area, while Sydney has 38.<sup>69</sup>

Merged local governments would minimise complexity and support sustainable tax bases and more substantial infrastructure investments.

Options to strengthen metropolitan planning and infrastructure use and delivery should consider the basis for local government boundaries and their potential to better reflect local transport networks and economic regions.



## Case Study – Brisbane Cross River Rail

The Brisbane Cross River Rail project aims to better connect the inner metropolitan area of Brisbane and address the strong forecast growth in the city's population.

Ten kilometres of two running tunnels will be constructed between Yeerongpilly in the south to Victoria Park in the north, with the construction of four new underground stations. This will increase public transport capacity by around 30 per cent to inner Brisbane.

It means 96 more trains arriving into the city in the two hour morning peak period, adding additional transport capacity of 120,000 people from the north and south. By 2021, it is expected that rail patronage will be more than 12 per cent higher with the project compared to without, alleviating congestion on the city's road network.

In addition to providing a sustainable public transport network in Brisbane, the project will transform the metropolitan area by supporting higher density living in inner areas such as Woolloongabba and Bowen Hills, and supporting the city's sustainability, productivity and employment access.

Cross River Rail project, conceptual image of Gabba station, Queensland.



# USER CHARGING FOR URBAN TRANSPORT SHOULD BE THE NORM – BUT IT REQUIRES COURAGE BY GOVERNMENTS.

## Action 4: User pays, user says – charging for urban transport

Governments alone cannot deliver the truly competitive infrastructure we demand in our cities. User charging for urban transport should be the norm – but it requires courage by Governments.

Efficient road pricing for major city roads creates sustainable revenue sources for new infrastructure and makes much better use of congested road assets. Road charging also has the benefit of improving use on surrounding public transport networks. The recent New South Wales financial audit suggested that efficient congestion pricing could raise up to \$5 billion in gross revenue per annum.<sup>70</sup>

A move to congestion charging will be needed if we are to reduce the growing economic burden of congestion and make best use of existing network infrastructure. The alternative would be to increase registration fees, fuel excises or taxes to fund new infrastructure as we try to keep pace with unmanaged demand growth.

New approaches to network-wide pricing are one way to achieve this. Different types of charging are available, ones that vary user charges by time of day, by network location or by distance travelled.

Infrastructure Australia's 2012 report to the Council of Australian Governments highlighted the potential to establish a common charge for Sydney's motorway network.<sup>71</sup>

In Sydney, Melbourne and Brisbane, users are already benefiting from additional infrastructure paid, in full or in part, from direct charging. In other cities, trials or innovative charging arrangements will be required to find politically durable solutions. For example, the Gold Coast City Council applies a transport levy to rate payers to fund the costs of the new light rail project. The fiscal circumstances facing all Governments are such that tolling or other types of charges can and should form part of the solution for infrastructure funding.

Importantly, once revenue streams and their volatility is established, tolled roads become attractive to private sector investors, and may offer additional opportunities for governments to divest of road assets to fund new infrastructure investment.

There are currently 15 tolled roads in Australia's major capital cities.

The Australian Government may need to reprioritise transport investment programs to provide incentive funding for jurisdictions that are prepared to pursue reform. Essential to its success is that it has to be done in partnership with State Governments and the community.

# OUR CITIES MUST HAVE GREATER PUBLIC TRANSPORT CAPACITY TO MEET THE GROWING TRANSPORT TASK.

## Action 5: Invest in public transport and high value vehicle links

Our cities must have greater public transport capacity to meet the growing transport task.

Population and economic growth around Australia's city centres has increased the urban transport task to more than 180 billion passenger kilometres per annum.<sup>72</sup> Cars dominate urban travel and accounted for 81 per cent of all urban passenger transport in 2011, with buses accounting for less than five per cent of all transport use.<sup>73</sup>

Although cars are presently the dominant form of private travel, we need to shift the balance of investment and regulation to prioritise higher volume or higher value transport options. This could involve priority for buses, commercial and freight vehicles at peak times and improving the efficiency and convenience of our transport network.

The smarter solutions to our urban transport needs focus on freight, commercial and public transport, and for local trips, cycling and walking.

Public investment in urban transport should focus on public transport, with expansions to the urban road network funded by users, not all taxpayers.

Australia's cities are growing at different rates. Appropriate public transport solutions depend on the size of our cities.

The national priority list has identified well developed proposals that would support liveability in our cities and benefit growing urban areas.

### Melbourne

**Rail and tram developments:** Melbourne should continue to expand existing heavy rail and tram networks when viable. Melbourne Metro will provide a 30 per cent increase in capacity on its passenger rail networks.<sup>74</sup> Melbourne's Tram Route 86 project is a good demonstration of a relatively low cost means of accommodating growing public transport demand, addressing congestion, and integrating the tram services with surrounding redevelopment.

### Adelaide

**Enhancing public transport measures:** A priority on integrated public transport links over road expansion should be the focus for South Australia's growing transport task.

The East West bus link, submitted to Infrastructure Australia in 2012, prioritises road space to bus users during peak times, making public transport a faster and more attractive option for regular commuters. Improved rail services north and south, including the electrification of the Gawler line, are still necessary to meet the needs of the current and growing population.

### Brisbane and south east Queensland

**Cross River Rail:** The river rail crossing features a 10 kilometre tunnel and the development of four new underground stations in the first stage. The project has the potential to enhance Brisbane's role as a competitive city by expanding the coverage of inner city rail to cater for rapid employment and population growth.

**Bus lanes:** Bus lanes can provide better, affordable public transport access for outer suburbs of the Gold Coast, Sunshine Coast and Brisbane, building on the successful inner city bus network. Bus lanes provide lower-cost public transport solutions for low density areas while increasing connectivity and access to services and employment opportunities.

**Gold Coast Rail:** Upgrades of the urban rail link between Brisbane and the Gold Coast in the medium to long term would provide greater connectivity and enable people living on the Gold Coast to easily access jobs and services in the Brisbane area.

Planning for future growth will require investment in rail line infrastructure, including in the Sunshine Coast and perhaps more importantly, west Brisbane and Ipswich, where there is projected to be significant population growth in coming years. The Queensland Government is currently progressing plans for new line capacity in both regions.



## Perth

**Public transport access to the central business district and the airport:** Planning for cost-effective and efficient public transport links to key inner and middle suburb areas, and Perth Airport. Work is underway to identify the best way of achieving this including analysis of the Perth Rapid Transit and Perth Airport Link proposals.

## Hobart

**Bus lanes:** In the short to medium term, improved bus services, including priority bus lanes, will be needed to provide public transport links between Hobart and Glenorchy. Bus lanes provide low-cost public transport solutions for low density areas while increasing connectivity and access to services and employment opportunities. Recent plans for Hobart emphasise the potential for redevelopment in this corridor to provide additional housing and to broaden the mix of housing.

## Sydney

**Metro system:** An efficient metro style public transport system across the metropolitan area is needed to provide mass transit between high density population centres and economic activity centres, alleviate congestion, reduce dependency on motorways and avoid car parking short-falls. As Sydney grows from around 4.5 million people at present to around 7 million by 2050 and even more later in the century, metro lines serving higher density development will need to be part of the city's future. There should be a greater focus on public transport measures, especially to high-growth population centres such as western Sydney and within western Sydney itself. This will improve access to jobs and services and increase connectivity between business centres.

**Sydney Harbour second crossing:** Population and employment patterns mean that Sydney needs a second crossing of Sydney Harbour. A second crossing will address a major pinch point in the network and ensure that inner Sydney remains accessible to everyone, regardless of where people live. In planning for the project, thought will need to be given to whether and how such a link might also connect with Kingsford Smith Airport, the largest airport in Australia. Projections suggest a doubling of passengers passing through the airport within 20 years. Many of those passengers will be travelling to and from locations in Sydney's 'global arc' extending from the central business district, through North Sydney and Chatswood to the business parks in Sydney's north-west.

**Sydney second airport:** A second airport in Sydney will increase access and connectivity between cities and with the rest of the world. This has the potential to drive economic and employment growth, especially in western Sydney, and increase living standards.

## Darwin

**Low-cost public transport measures and consolidated urban development:** Low-cost public transport options such as bus transit lanes to outer regions accompanied by consolidated urban development and land-use decisions to control urban sprawl.

## Canberra

**Bus lanes on Northbourne Avenue:** Low-cost public transport measures such as bus transit lanes along Northbourne Avenue connecting the high-growth area of Gungahlin with the Canberra central business district. This will provide greater access and connectivity to activity centres and support the Australian Capital Territory Government's plans for redevelopment along Northbourne Avenue.

The project needs to be accompanied by a change in the pricing of parking in Civic and other centres in Canberra. This is also in line with the Australian Capital Territory Government's existing plans.



Aerial view of Port Hedland, Western Australia.

05

**OUTWARD-FOCUSED  
NATIONAL PORTS  
AND FREIGHT  
NETWORK**



## THE FREIGHT TASK IN AUSTRALIA QUADRUPLLED OVER THE PAST 40 YEARS, AND WILL ALMOST DOUBLE AGAIN IN THE NEXT 20 YEARS.

In the next 50 years, the global centre of commerce will move into Australia's vicinity and demand for Australian goods will grow. With a connected and integrated national freight network, we can move goods to and from local and overseas markets faster and safer. This will lower the cost of transport, and enable us to exploit our close proximity to Asia to our competitive advantage.

The freight task in Australia quadrupled over the past 40 years, and will almost double again in the next 20 years.<sup>75</sup> In 2009-10, Australia moved around 520 billion tonne kilometres of freight.<sup>76</sup> Freight accounts for an estimated 9 per cent of GDP<sup>77</sup> and supports employment in around a quarter of a million Australian businesses.

And yet, in most people's daily experience, freight makes up a small proportion of traffic on roads and rail lines. For example freight makes up less than 9 per cent of traffic on the Stirling Highway in Perth and makes up around 10 per cent on most of our metropolitan arterial roads.<sup>78</sup>

Freight activities should be less visible and intrusive to the community and freight must be seen as a positive contributor to the community, providing us with the goods we need, while also supporting prosperity and jobs.

Australia needs a freight network that is seamless across state and territory borders. Since before Australia's federation, our politicians have talked of an idea to link all our major industrial areas in a single national network of ports, roads and rail.

While significant steps towards interoperability have included the one nation infrastructure program, the national rail summit, the creation of the Australian Rail Track Corporation, the establishment of single national regulators in rail safety, heavy vehicles and maritime and the national ports strategy, a single national freight network remains elusive.

*'Let the whole of the paying and non-paying railways of all the colonies, together with the public debt, be taken over by the federal authority, and they will prove instrumental in building up the prosperity of the people. But they must be under the control of one power. If they are under six or seven authorities, instead of being instrumental in creating prosperity, they will be weapons for destroying the best influences upon national life in the future'*

22 February 1898, The Hon. Mr. J.H Carruthers

The national freight network – which should have been done at Federation – is an idea long overdue.

The national freight network will need the right infrastructure to meet the growing freight task, and the right policies to ensure well-planned, well-funded, seamless transport connections.

Why has such a simple idea been so impossible to deliver?



The Sandgate Flyover in Newcastle improves access to the Port of Kooragang, New South Wales.





A road train in Australia's Northern Territory.



# THE NATIONAL FREIGHT NETWORK IS A LASTING SOLUTION THAT WILL ADDRESS THE SYSTEMIC AND LONG TERM CHALLENGES FACING FREIGHT.

## Fragmentation Galore

There are too many levels of Government involved in freight infrastructure planning and delivery, too many distractions about short term local issues, and not enough consideration given to the importance of freight to our economy when planning Australia's infrastructure.

All levels of Government have different planning responsibilities and mechanisms for freight – the Australian Government finances the national rail network, and provides some funds for major interstate road routes; State Governments and private operators own and manage metropolitan rail networks and state roads; Local Governments control local road access and can impose restrictions on operating hours.

Despite all this planning, some in the freight industry say no-one is listening about the infrastructure they need to be competitive locally and globally.

Attempts to address the myriad of localised issues is clouding the bigger picture, resulting in a lack of perspective about what freight and the economy needs. There has been a failure to recognise a hierarchy of places for freight, and a failure to protect and plan for the most important freight infrastructure.

It seems self-evident that some places are more important for freight than others. Not everywhere should be on a national freight network, but all nationally significant places should be. The networks identified by Governments today are not adequate for freight; some are ill-defined, others too broad, some do not allow seamless vehicle movement and others omit some of the most important freight facilities – such as the Port of Newcastle, the world's largest coal port facility. These existing networks fall short of what we need from a national freight network.

Policy makers continue to value the movement of goods less than the movement of people when planning infrastructure. Freight vehicles have a higher value of time than private vehicles. Therefore, more efficient freight movements and faster freight travel times have a bigger impact on productivity.

Freight efficiency also has real impacts on Australian households. The harder it is to move freight around the higher the costs we eventually pay for everyday goods and services, and the more expensive and less competitive our products are on global markets.

The community and policy makers need to understand that freight operators apply a simple rule when deciding whether they travel by road or rail, or by state or local road. They will seek the lowest cost transport pathway.

Where freight routes are not clearly defined, or access is restricted, freight will follow the next lowest cost route they can, with freight trips spilling onto local and community roads.

Freight and the community need to reach an understanding – one that balances community need by consolidating routes where freight can travel, with the economic importance of freight activity, by providing highly efficient infrastructure links between our most important freight locations.

The national freight network is a lasting solution that will address the systemic and long term challenges facing freight.

Short term actions will not deliver the policy mechanisms to identify, plan and deliver the port, railway and motorway infrastructure that can support a prosperous outward looking economy.

Australia's major freight generators should be connected by a national network irrespective of who might own segments.

This is not a national 'takeover' of freight infrastructure, but an approach that ensures interoperability, with national specifications for rail, roads, communications, corridors and shipping.

Figure 7: Indicative map of key national freight routes



Source: Infrastructure Australia 2012f, National Land Freight Strategy, update.

# A NATIONAL FREIGHT NETWORK SHOULD IDENTIFY AND LINK PLACES FOR FREIGHT AND SET THE GROUNDWORK TO PLAN FOR AND DELIVER FREIGHT INFRASTRUCTURE OVER THE NEXT 50 YEARS.

## Action 6: Create a complete national freight network

A national freight network should identify and link places for freight and set the groundwork to plan for and deliver freight infrastructure over the next 50 years. It needs to focus on limited set routes as places for freight to reduce business costs.

A national freight network requires a long term direction towards:

- availability of a standard gauge freight priority rail line from principal freight nodes to the designated interstate network;
- standard gauge rail tracks/freight priority routings in capital cities, the Inland Rail Route and further rail standardisation in Queensland, Victoria and Western Australia;
- a single rail control system or seamless interface with city train control systems;
- use of smart technology in infrastructure and operations;
- greater intermodal terminal capacity in the capital cities, in major cities and at strategic interchange points;
- a high productivity/performance based standards road network for certain national highways, including the Newell, Hume, Pacific, and Bruce Highways, supported by town bypasses and grade easing works;
- introduction of dedicated road freight infrastructure where traffic density permits, between capital city ports and intermodal terminal/freight cluster sites;

- a second tier of designated freight roads removed from local jurisdiction to support strategic freight clusters on the national network; and
- connection from the designated National Land Transport Network by road to all nationally significant container and bulk freight ports, including Newcastle, Port Kembla, and preferred truck routes to Melbourne and Fremantle ports.

Governments recently released a freight strategy drafted by officials. This is a start to the reform journey that is needed to ensure Australia's competitiveness, however, more needs to be done to create a true national freight network. Matters needing further attention include:

- industry involvement, including 'signing-off' on any national strategy;
- a long term program of priority investment on the network;
- a transition program from the current situation of Government-only identification and funding of projects to a much more active role for industry and the private sector;
- infrastructure governance more generally, including the ownership, control and economic regulation of publicly owned facilities; and
- long term planning based on a much more rigorous analytical approach.

Without these measures, Australia will not see the benefits of a functioning, efficient freight network.



## THE NATIONAL PORTS STRATEGY, DEVELOPED IN 2010, CALLED FOR THE DEVELOPMENT OF 30 YEAR PLANS FOR AUSTRALIA'S MAJOR PORTS.

### Action 7: Deliver 30 year plans for Australia's major ports

Asia's demand for Australian minerals and resources is having a dramatic effect on the national economy and on our infrastructure needs.

Existing ports and rail systems are approaching capacity and increased production from regions will attract significant investment in infrastructure in the coming decades.

Despite the national ports strategy being in place since December 2010, only the Port of Gladstone has a long term plan in place. This is a significant national problem. Three years since it was first released, it is time our ports and governments committed to the development of long term plans for Australia's major ports. We need:

- Thirty year plans for every major port including its channel, the port itself and its hinterland road and rail connections; and
- Regular reporting by every port against a series of agreed national performance indicators.

Australia's major ports sit within each of our major cities, largely as container ports, and as key economic centres in our regions as bulk commodity ports. They are large, immovable nodes that are the import and export hubs for Australia's tradeable resources. The need for long term planning of this infrastructure, and their relationship to economic activity and communities, is clear – as our economy and society continues to develop and expand, so too will the activity in and around Australia's ports.

We have an opportunity to manage the expanding role of our ports in an efficient and productive manner, taking into account interdependencies with international trade, and interaction with community needs such the challenge of urban encroachment, to create competitive port and freight operations.

Long term plans will create greater certainty for ports, local communities and the supply chains that feed into and out of our ports. These will enable decisions to be made on the expansion of our import and export trade networks, including the future and location of our multi modal terminals, road and rail infrastructure, and promote better relationships between ports and their communities.





## Case study – The 50 year plan for Gladstone Port

Gladstone Port is a natural deep water port and the largest port in Queensland.

Gladstone Port developed its first 50 year port strategy in 1992, outlining its long term infrastructure development and relationship with the local community. Since then, the port authority has updated the strategy approximately every five years.

The port handles coal and alumina exports from Central Queensland and continues to experience high growth of its operations and services, a direct result of sound long term planning. A number of areas of the port are being extended or upgraded. In addition to the duplication of the channel, a new coal terminal is to be constructed on Wiggins Island which will double coal export capacity. At port central, new berths will be able to handle between 250-300 million tonnes of cargo each year.

The port expansion will play a vital role in facilitating the development of industrial activity in the Gladstone State Development Area, with the development of Fisherman's Landing, Friend Point, Hamilton Point and Tide Island in the Western Basin providing the necessary marine infrastructure to meet regional activity.

A key achievement of the long term plan is alignment with regional industrial development plans to ensure the port expands to support growing regional activity.

Port of Gladstone, Queensland.



## A 'USER PAYS, USER SAYS' MODEL WILL BETTER ALIGN INFRASTRUCTURE DECISIONS WITH THE NEEDS OF THE FREIGHT SECTOR.

### Action 8: Create a pipeline of priority freight infrastructure

A national long term pipeline of freight infrastructure is required to achieve long term freight outcomes.

Currently, priority infrastructure projects vary from State to State depending on existing infrastructure and the needs of industry. These must be consistent with long term plans for ports, corridors and industrial precincts to provide certainty to major projects, support industry planning, and improve national connectivity.

Projects on the national infrastructure priority list include the M80 ring road in Melbourne, the Gateway Motorway upgrade in Brisbane and the North West Coastal Highway in Western Australia.

Other important projects include:

- **Queensland:** Development of intermodal terminals in suitable freight areas, such as Bromelton and/or North Queensland.
- **New South Wales:** Development of the Sydney Moorebank Intermodal terminal to facilitate container freight to and from the Port of Botany.
- **New South Wales – Victoria:** Efficient links for high productivity vehicles between Sydney and Melbourne along the Hume Highway.
- **Western Australia:** Development of the Portlink between mining sectors in the northwest and south of the State.

Freight and commercial operators are willing to fund projects that increase their productive capacity and efficiency. We should leverage this potential.

### Action 9: User pays, user says – for freight infrastructure

The freight sector stands to benefit from investment in freight and should pay for it. The industry itself must be given a greater say in what infrastructure they are willing to fund in a 'user pays, user says' model. The role of Government in facilitating this is three-fold:

- Government must shift to a stronger commercial focus on roads, similar to the progress that has occurred in the utilities sector.
- Government must set the right conditions for this investment including a national investment-access regime, accelerated and single national approvals and regulation for the national freight network, and recognising long term plans for major locations such as ports.
- Government must enable the freight sector to identify, plan and deliver the port, rail and road infrastructure needed by businesses.

A 'user pays, user says' model will better align infrastructure decisions with the needs of the freight sector and relieve the Government of the difficult task of identifying and funding freight infrastructure. It will work best where there is the greatest volume and value of freight traffic – that is, on a defined national network.

Industry involvement in infrastructure decision making is critical. A user pays, user says approach to freight will facilitate much greater private sector investment in existing roads, such as the Hume Highway.

This funding model is already used in ports, airports, energy, industrial precincts and railways and privately initiated and funded investment in roads is not new. However, the model will only succeed with a national policy framework to enhance and extend these initiatives as appropriate.

Recent efforts to reform freight infrastructure funding arrangements include the heavy vehicle charging and investment reforms, and joint work by some state governments for improved heavy vehicle access on some major roads.





## Case study – Chullora freight access

The Australian and New South Wales Governments recently announced targeted joint investment to enable continuous heavy vehicle access to the Chullora intermodal terminal from the Hume Highway.

The constraints to accessing the terminal have been long standing, a symptom of a lack of a properly defined network for national freight flows. Despite handling a comparable freight task to some of Australia's major container ports, Chullora is not a part of the existing national land transport network and thus was treated by government agencies as a case of 'first/last mile' access, akin to a small urban truck depot or a rural farm. The current constraint in accessing the terminal is estimated to have cost the economy and freight operators some \$22 million over the past five years.

The first stage of the upgrade focuses on low cost works, and includes resurfacing the approach roads and the entrance to the terminal. The minimal cost outlay will address local road constraints and incorporate the freight hub into the national freight network.

Once completed, road freight travelling to Chullora from Melbourne will no longer be restricted to two containers to meet the lower loading limits of the Chullora section. The upgrade will mean many trucks will be able to carry three containers, so two trucks will do the job of three trucks, significantly reducing the number of trucks on our roads.

The project shows the importance of identifying places that generate or handle large amounts of freight – irrespective of any current definition of national land transport network, and effectively including them on national networks that offer the highest levels of access and service.

Chullora intermodal terminal, Sydney, New South Wales.

### Action 10: Create a national road portfolio manager

Australia has more than 825,000 kilometres of existing roads, and their maintenance and management is a significant cost to governments. Many local governments struggle to keep up with their road maintenance responsibilities.

A national roads portfolio manager would have two critical functions:

- to coordinate road funding across governments and direct funding towards high priority road maintenance projects that deliver higher net benefits; and
- to identify opportunities for private sector investment in the existing network, linked to improved freight access or to innovative models of road asset management.

Managing our roads as a portfolio of assets will ensure money is directed toward road infrastructure that provides the greatest benefits, and is not wasted on lower priority projects. It would also support a national assessment on the condition and safety of our roads, and uniform national reporting.

### Action 11: Boost efficiency through private ownership of freight assets

Governments across the country currently own port and rail assets valued at \$10-13 billion that are suitable to be transferred to the private sector.<sup>79</sup> Transferring these assets to the private sector would not only free up much needed public funds that can be recycled into new infrastructure, they could also deliver efficiency benefits to the freight sector and boost productivity through:

- Better coordination and integration of rail, road and port supply chains;
- More timely investment in infrastructure and greater responsiveness to market needs; and
- Greater access to capital and enhanced ability to facilitate commercial expansions when required.

Historically all Australian container ports and many major bulk ports have been publicly owned. There has been strong interest in port assets with many ports already successfully transferred to the private sector. Ports in Brisbane and Adelaide are currently under private sector management and the New South Wales Government recently announced the long term lease of Port Botany and Port Kembla.





## Case Study – Long term lease of Port Botany and Port Kembla

Following a six-month competitive bidding process, the New South Wales Government recently awarded the 99-year lease of Port Botany and Port Kembla to a private consortium. The successful consortium was made up of 80 per cent local investors, including superannuation companies representing five million Australians.

The New South Wales Government intends to invest the \$5.07 billion proceeds of the sale into the Government's infrastructure fund.<sup>80</sup> This fund will help to finance key Government infrastructure projects including a new motorway (WestConnex), Bridges for the Bush, the Pacific Highway, the Princes Highway, as well as providing \$100 million for spending on new infrastructure projects in the Illawarra region.<sup>81</sup>

Leasing the ports included several agreements to protect the interests of stakeholders. These include the removal of the annual container movement cap, transfer of employee enterprise agreements (with a two year employment guarantee) and the construction of WestConnex.

The fact that the sale yielded some 60 per cent more than originally expected, demonstrates the enormous latent value in Australia's transport infrastructure that is able to be unlocked by setting the right governance – including ownership – arrangements.

Port Botany, Sydney, New South Wales.





Hydroelectric power plant in Australia.

06

**AN ADAPTABLE,  
SUSTAINABLE  
WATER SUPPLY**



## THE LAST ROUND OF WATER RESTRICTIONS CAME AT A PRICE – INDUSTRIES WERE SEVERELY IMPACTED, THE REVENUE OF OUR WATER INDUSTRY DECLINED, AND THE QUALITY OF LIFE FOR MOST AUSTRALIANS WAS AFFECTED.

Australia's last drought extended from 2003 to 2012. During that time, every major city in Australia invested heavily in water infrastructure to supplement its water supply. This included at least one new desalination plant as well as recycled water, groundwater and many private rainwater tanks partly funded by rebates. Water restrictions became a part of everyday life.

In a country that is by far the driest inhabited continent<sup>82</sup> on earth; the issue of water security is not new.

Australia's water industry is constantly faced with problems, such as how to best manage the existing water supply, when to invest in new infrastructure, and how to defer capital expenditure through water restrictions and other demand management measures.

Our success is measured by how well we respond.

To prepare for the future, Australia needs a water industry that can plan for the long term, whilst being flexible enough to cope with extreme weather events.

The last round of water restrictions came at a price – industry was severely impacted, the revenue of our water utilities declined just as additional capital spending was happening, and the quality of life for most Australians was affected. Hefty investment in new water infrastructure compromised our ability to plan and deliver other, much needed infrastructure and services.

The ability to plan for the long term is being compromised by a complex regulatory system. Reforming the regulatory framework is needed to deliver long term outcomes, rather than responding to short term challenges.

We need a stable regulatory system that supports the long term needs of the industry.

We need our water industry to plan for the long term to ensure the security and adaptability of our water supply in the face of climate change. The water industry must be supported by stable regulation and commercial returns on its regulated or approved investments.

We must broaden the implementation of full cost recovery pricing.

We must progress the agreement to seek full cost recovery of water services and infrastructure, an agreement forged some years ago. This will ensure our assets are maintained and sufficient funds are available to deliver necessary new infrastructure. Importantly, commercial returns are needed if water utilities are to be sustainable. Currently a number of state regulators do not provide for utilities to recover their efficient cost of capital through regulated pricing.

We need to strengthen the partnership between Governments and the private sector, to build a more competitive, innovative and professional water services market.

Working with Governments, the private sector can participate more widely in asset operations and ownership, bringing with it new innovations to competitively deliver water services.





A Department of Water industry liaison officer checking a meter at an iron ore mine in the Pilbara, Western Australia.



## WITHOUT FULL COST RECOVERY PRICING, THERE WILL BE INSUFFICIENT FUNDS TO MAINTAIN THE REQUIRED STANDARDS TO MEET SERVICE LEVELS FOR WATER INFRASTRUCTURE.

### Action 12: Introduce a national economic regulator for water

Australia's water industry has a complex regulatory system. Each state and territory has its own economic regulator, some more mature than others, with the seven regulators serving a population of 22 million people. By comparison one water regulator in the United Kingdom serves more than 60 million people.

As a result of changing priorities, short term political and public pressures can strongly influence the direction of the water industry, and pull states in different directions.

Investment in desalination has seen capital expenditure skyrocket at the same time as revenues declined because of lower water use due to demand management measures and water restrictions.

This has tested regulatory systems and they have not met the challenge. The pressure to keep prices down during some recent pricing determinations has seen a move away from full cost recovery and commercial returns in favour of more socially and politically acceptable price increases. This means that these utilities cannot afford the capital expenditure necessary to keep the systems working.

The water industry's regulatory system needs to adapt to support innovation, efficiency and greater private involvement; however, it is not currently well placed to do this. There is little consistency across Australia, little certainty for investors and little stability for customers, with prices rising sharply in some jurisdictions in the last five years, only to decrease in the next round of price setting.

There are clear benefits to moving away from the complex and ineffective state-based regulation, as has been demonstrated in the United Kingdom. A national regulator could:

- Provide stability in the short term for customers and investors, and certainty in the long term for water services and assets: implementing full cost recovery pricing across the water industry and clear price paths.
- Provide a more efficient regulation system: with clear national objectives, supplemented by state-based objectives where necessary, resources would be centralised, benchmarking would be improved and the cost of regulation would be lower.
- Improve opportunities for competitive private sector investment: a multiplicity of regulation across states would be removed, accountability would be greater, and, ideally, an appeals process would make the regulator accountable for its decisions.
- Improve the corporatisation model: this would put distance between Government owner-stakeholders and the regulator.

### Action 13: User pays, users says – set prices to recover the full cost of providing water services

For a water corporation to function well as a business and provide the level of service the community wants, it needs to recover the efficient cost of its investments and operations. In doing so, it can adequately maintain its assets to meet the service levels required and build new infrastructure needed to grow.

In 2008, all of the major water corporations and regulators across Australia agreed to pursue full cost recovery, in line with the National Water Initiative's pricing principles released that year. Not all jurisdictions have progressed full cost recovery measures, and disappointingly, those that have seem to be going backwards.

An important element of a single water regulator is the opportunity to finally deliver on this agreement.

Without full cost recovery pricing, there will be insufficient funds to maintain the required standards to meet service levels for water infrastructure, such as maintenance regimes to reduce the incidence of burst water mains and funding to secure our future water supply.

In implementing full cost recovery, there is also an imperative on the regulator to ensure it only builds the right projects, at the right time, with the procurement model that provides best value for money. Service levels need to reflect what the community is willing to pay for, with infrastructure planned and built to meet these standards.



Lower Molonglo Water Quality Control Centre,  
Holt, ACT.



## Case Study – Central Park Water Factory, Sydney

Central Park is a mixed use commercial and residential development located near Sydney's central station on the southern edge of the central business district. It will feature a world-class recycled water network servicing 5,000 residents and 15,000 workers and visitors daily.<sup>83</sup>

The innovative recycled water network will harness multiple water sources including rainwater, stormwater, groundwater, sewerage, irrigation and drinking water from the public water main. The water sources have varying qualities to enable users to sustainably manage their water use. The network will save residents between 40-50 per cent of their potable water, reducing water costs and preserving water sources.

Central Park Water will be the biggest membrane bioreactor recycled water facility in the world built in the basement of a residential building. The recycled water centre will be built over four basement levels with technology designed to simplify operational management.

The water factory will treat sewage generated within the development and supply recycled water within the site for toilet flushing, clothes washing, irrigation and general outdoor use. Central Park Water will own and operate the water cycle in the precinct and bill customers directly for water use.

Conceptual image of the Central Park Water Factory, Sydney, New South Wales.





## CAREFUL, RATIONAL, UNEMOTIONAL THINKING IS NEEDED WITHIN THE WATER INDUSTRY, GOVERNMENTS AND THE COMMUNITY ON HOW WE PLAN FOR SUSTAINABLE FUTURE SUPPLIES.

### Action 14: Support alternative water sources

Careful, rational, unemotional thinking is needed within the water industry, Governments and the community on how we plan for sustainable future supplies.

The proliferation of desalination plants across the country reacted to the immediate pressure of water shortages. With time for a longer national debate, indirect potable reuse could have also been a consideration.

This is where highly treated wastewater is introduced back into the water system, typically through dam or aquifer recharge, to supplement the water supply. The water is free from pathogens and, depending on the treatment process selected, can be treated to the same quality as existing potable water supplies.

However it is too often dismissed by the community due to the fear associated with introducing purified water from sewage treatment plants into the water supply. Such thinking is ill-informed.

Perth is highly vulnerable to climate change induced lower rainfall and has moved to 55 per cent desalinated water that is powered by renewable energy sources. The next major source

will be indirect potable reuse through aquifer recharge. Similarly, Adelaide has shifted to around 50 per cent desalinated water use based on renewable energy sources.

As a nation, we have dealt with far more complex water issues. The quality and quantity of our natural water supplies have made our water industry world leaders in dealing with water conservation and water treatment. In South Australia, the River Murray contributes to the bulk of the State's water supply. Despite the Murray being a less than pristine water source, South Australia has built expertise in water treatment to treat this water. As a result, it now operates the country's leading research centre for drinking water quality, the Australian Drinking Water Quality Centre.

It is time Australians had a mature, informed debate on this topic before we next run out of water.

There are still a number of areas across regional Australia where the reliability of water quality is poor and water security is a major issue. These issues point mostly to the limitations of the governance structures around the water supplies, predominantly in some regions in New South Wales and Queensland.<sup>84</sup> It is also time for a mature debate on how we can best serve the needs of regional customers.

### Action 15: Transfer water assets to the private sector

Most of Australia's water assets are publicly owned including \$50 billion to \$60 billion of water infrastructure suitable to be transferred to the private sector.<sup>85</sup>

Over the last two decades significant reforms to governance have led to the development of a more commercial water industry. These reforms, including pricing regimes, property rights and water trading arrangements, have paved the way for private ownership of water assets.

In New South Wales, the private sector owns several water treatment plants while most of the Australia's bulk water supplies, water distribution, retailing and waste water infrastructure remains in the hands of Government.

In 2012, the New South Wales Government announced the long term lease of the Sydney desalination plant for \$2.3 billion to a consortium including the Ontario Teachers' Pension Fund Board, Hastings managed infrastructure funds, Utilities Trust of Australia and The Infrastructure Fund. The New South Wales Government welcomed the deal announcing that it would free up much needed funds for critical state infrastructure.





Liquefied Natural Gas ship off the coast of Australia.

07

# ADVANCING THE NATIONAL ENERGY MARKET



## AUSTRALIA'S ENERGY SECTOR SHOWS US HOW A NATIONAL MARKET STRUCTURE CAN DELIVER TANGIBLE PRODUCTIVITY BENEFITS FOR ALL AUSTRALIANS.

After nearly 20 years of collaboration between the Australian, State and Territory Governments on significant reforms, Australia's energy sector shows us how a national market structure can deliver tangible productivity benefits for all Australians.

In 2005, the Productivity Commission estimated that these reforms permanently increased Australia's GDP by 2.5 per cent.<sup>86</sup>

Australia's energy sector now includes a series of markets in which Australians trade energy with each other. Our energy sector is a significant contributor to our nation's wealth with coal, oil and gas export earnings set to deliver over \$70 billion to our economy in 2012-13.<sup>87</sup> An important achievement of these reforms has been the transformation of isolated state-run power supplies on the east coast of Australia into the National Electricity Market – one of the world's longest interconnected power systems – extending from Port Douglas in Queensland to Port Lincoln in South Australia and to Tasmania via Basslink.

The National Electricity Market has seen over \$12 billion of investment in electricity generation since it commenced in 1998, with much of the investment coming from the private sector.<sup>88</sup> This investment has delivered new supply sources to energy consumers across state boundaries and improved the security of our electricity supply. This market has also created new financial trading opportunities with over \$10 billion of electricity traded every year.<sup>89</sup>

Central to the productivity improvements in this market and our gas markets is that they are supported by a framework of national legislation and national objectives that promote efficient investment, operation and use of our energy markets for the long term interest of consumers. Furthermore, to oversee these markets we have nationally focused bodies including:

- the Australian Energy Market Commission to ensure our energy market rules work effectively and to advise Governments on how to further develop our energy markets;
- the Australian Energy Market Operator to operate the National Electricity Market and the eastern gas network and, as national planner, to identify investment opportunities; and
- the Australian Energy Regulator to balance the interests of producers and consumers in our energy markets on the east coast by setting the prices for using network infrastructure within these markets.

But momentum in our Governments, industries and communities must continue. As we move to a lower carbon economy and export energy to the growing Asian region, we need to be innovative in the way we govern, produce and consume energy.

While our energy markets are world-leading, we still do not have a truly national energy market structure that enables the supply of energy through truly efficient and competitive markets across state boundaries. We can achieve this national market structure by continuing the collaborative reform approach between Governments and industry to deliver efficient energy supply to the community.



Australian power lines stretch into the distance.



## IT IS TIME TO IMPROVE SERVICE DELIVERY AND THE COST OF ENERGY BY DIVESTING PUBLICLY-OWNED ENERGY INFRASTRUCTURE IN COMPETITIVE MARKETS.

### Action 16: Transfer energy assets to the private sector

It has been 20 years since the Hilmer Report recommended structural reform of our energy sector as a precursor to the privatisation of Government-owned energy infrastructure.<sup>90</sup>

Despite this, State Governments still own and operate the majority of Australia's electricity network assets and numerous generation assets. Government ownership of energy assets places a financial burden on Governments to fund the next tranche of investment that is required in our energy sector.

Energy infrastructure assets valued at \$52 billion to \$66 billion have been identified as suitable to be transferred to the private sector.<sup>91</sup>

It is time to improve service delivery and the cost of energy by divesting publicly-owned energy infrastructure. This reform will remove the conflict of Government being both owner and regulator and can lead to more efficient overall management of energy infrastructure and competition in our energy markets.

### Action 17: Improve national governance and planning of our energy markets

Australia has made great progress in how it governs our energy markets but there are benefits to further integrating the institutional frameworks, regulation and planning of all Australia's energy markets into a truly national framework.<sup>92</sup>

For example, information on the Northern Territory and Western Australia is not included in the national planning and market activity documents prepared by the Australian Energy Market Operator and the Australian Energy Regulator. These publications are important sources of information for governments, regulators, industry, investors and consumers. As such, we do not have truly national planning documents that can provide information to achieve national integration and efficiency from the regulation of and investment in our energy infrastructure.

While there are benefits from further integration of governance arrangements due to the costs and distances involved, Western Australia and the Northern Territory are not physically part of the east coast electricity and gas markets and it may never make economic sense to do so.



## Case Study – privatisation of Victoria's electricity market

In the 1990's, the Victorian Government corporatised its State-owned electricity utility and sold the components to private entities.

The privatisation of the Government owned monopoly introduced competition to Victoria's energy production and retail market, increased productivity and provided consumers with choice of supplier.

The Pacific Economics Group found that there was an 'identifiable, one-time burst' of productivity growth in the Victorian electricity and distribution operators following privatisation.<sup>93</sup> The Productivity Commission found that while labour productivity improved nationally in the 1990s, Victoria benefited from the greatest gains of 80 per cent following privatisation.<sup>94</sup>

The \$23 billion proceeds of the sale were used to retire debt and provide a much-needed boost to the economy following the 1990-1992 recession.<sup>95</sup>

Wind farm in regional Australia.



## WE CAN MAKE BETTER USE OF EXISTING INFRASTRUCTURE BY MANAGING PEAK DEMAND.

### Action 18: Streamline our national response to the global issue of climate change

Australia has made environmental commitments to the international community to reduce the level of greenhouse gas we emit into the atmosphere.

Climate change is a global problem that is best addressed by a global response.

While small-scale responses may be needed in the interim, such as solar rebates, feed-in tariffs for domestic generation and restrictions on the use of offshore carbon certificates, in the long term these will not be the most efficient way to transition Australia to a lower carbon economy. Similarly, State, Territory or even city carbon targets may impose additional regulatory costs and policy uncertainty without achieving significant environmental benefits.

Where other nations can achieve reductions in emissions at lower cost than Australia, trading will enable us to reduce carbon at the lowest cost possible. Just as we benefit every day from trading with countries that produce the things we want and need at the lowest cost, we should be applying the same approach to carbon. Where we can reduce emissions efficiently, then the local solution should be used.

### Action 19: User pays, user says – making better use of energy infrastructure

In general, Australians enjoy a reliable supply of energy. However, this reliability comes at a cost. Our energy networks are built to transport the peak demand for energy on any given day – this means that at times of lower demand, we are still paying for the level of investment in this infrastructure for the peak period.


Therefore, there is a trade-off between the cost of building and maintaining our energy infrastructure and the level of service we are willing to pay for. We can make better use of existing infrastructure by managing peak demand and reconsidering our reliability standards to match the level of service we are willing to pay for.

A step in the right direction is the development of a nationally consistent framework to manage the reliability standards of our energy supply. This framework will allow the Australian Energy Regulator, as the national regulator, to deliver economically efficient outcomes in the long term interests of consumers.

We also need a regulatory framework that supports innovative investment in our energy infrastructure.

The Transmission Frameworks Review and the National Transmission Network Development Plan are making progress in addressing this issue.<sup>96</sup> These projects aim to encourage better planning of our electricity infrastructure by identifying investment opportunities and offering new ways to balance the investment incentives of generators and transmission network owners.

We must also develop policies that encourage, rather than hinder, more active participation from both producers and consumers. For example, we can generate further competition and innovation from our energy producers by deregulating retail energy prices in competitive markets. We can engage consumers, especially large customers, by providing real-time information through the efficient deployment of smart meters to make more informed choices about the energy they consume.



## Case Study – Electricity demand management – Power of Choice Review

In November 2012 the Australian Energy Market Commission released the “Power of Choice Review”. The review set out a proposed reform package for the National Electricity Market to provide households, businesses and industry with more opportunities to make informed choices about electricity use and expenditure.

It also identified a number of innovative reforms to better manage energy costs for consumers and suppliers. For consumers, the reforms will increase participation by providing better information, price incentives and improved technology. For network operators and retailers, the reforms have the potential to defer the need for investment in capacity by smoothing out peak demand and getting better use of existing infrastructure.

The review estimated that by better managing demand these reforms have the potential to save between \$4.3 billion and \$11.8 billion in future infrastructure investment over the next decade.<sup>97</sup>

At the household level, analysis by the Productivity Commission suggests that the further adoption of demand management could save households between \$1,500 to \$3,400 in net present value terms, with the largest benefits coming from the deferral or avoidance of network augmentations.<sup>98</sup>

Demand management initiatives have already delivered cost savings in Australian electricity consumers, operators and retailers. In New South Wales, a mix of network agreements between Ausgrid and consumers deferred capital expenditure and reduced the risk of non-supply by 58 per cent.<sup>99</sup>

Meter used to monitor energy use in Australia.





Sturt Street, Ballarat, Victoria.

08

# PRODUCTIVE, CONNECTED REGIONS



## OUR REGIONS NEED TO GET READY, WITH THE ROAD, RAIL AND PORT INFRASTRUCTURE TO MOVE A GROWING FREIGHT TASK IN A COST COMPETITIVE WAY.

Australia's regions are home to some of our most vital industries such as mining, tourism, agriculture and food production.

In the long term, population growth, urbanisation, rising incomes and more sophisticated consumer demands in Asia will drive increased demand for the goods, services and resources our regions can provide. Robust economic growth in emerging economies is expected to support continued growth in the consumption of mineral and energy resources over the period to 2025.<sup>100</sup>

Australia's market share of world exports of iron ore is forecast to grow to above 50 per cent by 2015.<sup>101</sup> That is a staggering figure.

Asia's demand for food is also escalating, with the desire for greater quantities and higher quality produce driving the growing demand. The value of global food demand will increase 35 per cent by 2025, with India and China accounting for almost two thirds of the increased demand.<sup>102</sup>

With this growing economic activity will come surging demand for regional infrastructure – efficient links stretching from farms and mines deep in the heart of our regions to global markets all around the world. In 2011, 53 per cent of major investment projects were in Australia's north and west, where by comparison, only 20 per cent of our workforce resides.<sup>103</sup>

We are well-placed to make the most of the growing global demand for food. On average, each of the 135,000 farms across Australia produces enough food to feed 600 people, 150 at home and 450 overseas.<sup>104</sup> Australia produces enough to feed around 60 million people each year, and exports around 55 per cent of its food production.<sup>105</sup>

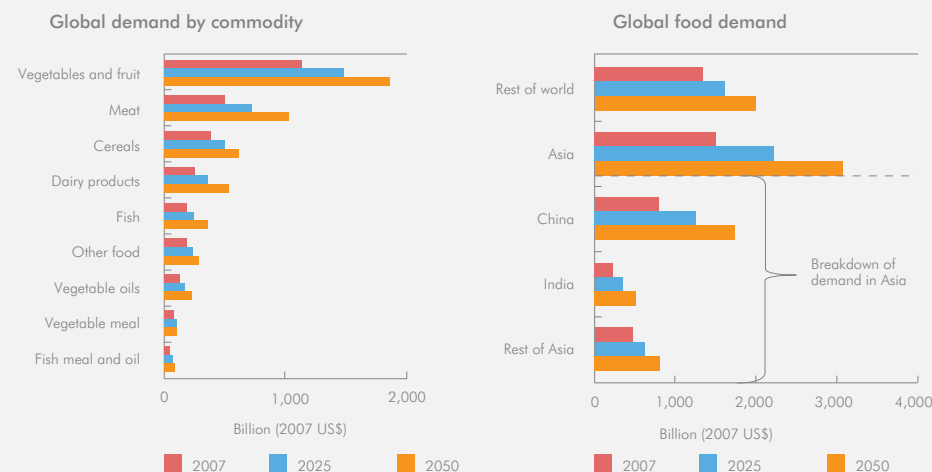
The National Food Plan released in May 2013 sets the goal of increasing our food-related and agricultural exports by 45 per cent by 2025. This has real implications for the productivity of our regions and the infrastructure we need, and will impact significantly on the vitality of our regions.

With sustainable infrastructure improvements such as efficient water irrigation, we can ensure our regions achieve significant economic growth.

Regional Australia is the source of our food and agriculture sector. More than 90 per cent of jobs in food production and about half of all food processing and manufacturing jobs are located in Australia's regions.<sup>106</sup>

A more affluent Asia will demand higher value foods, more choice, and experience changing preferences and diets.

Figure 8: Global Food Demand by Commodity and Region



Source: Australian Government 2012, *Australia in the Asian Century – White Paper*.

Our regions need to get ready, with the road, rail and port infrastructure to move a growing freight task in a cost competitive way. As our regional economies grow and prosper, so will our regional communities.

Australia's regional population is around 7 million people,<sup>107</sup> with people residing in large regional centres such as Townsville, small towns such as Ganmain in New South Wales and in other communities across the continent.

The population of Australia's regions has grown by around 10 per cent since 2001, much of this in resource rich areas where strong job markets exist.<sup>108</sup> Regional infrastructure development must keep pace with population growth to ensure that Australia's regions are liveable and sustainable communities.

Dalrymple Bay Coal Terminal, Queensland.







Silos situated alongside railway lines in regional Australia.

# THE RESILIENCE OF AUSTRALIA'S REGIONAL SUPPLY CHAINS IS BEING TESTED BY THE UNPREDICTABILITY AND EXTREME WEATHER CONDITIONS CAUSED BY CLIMATE CHANGE.

Over the next 50 years our regions will continue to change and be shaped by a range of factors including global economic forces, climate change and the attraction of younger generations to larger cities. In the face of these changes, we must enable Australia's regions reach their full economic and social potential by unlocking the opportunities stemming from growth in Asia in the 21st Century. This will deliver prosperous and sustainable communities.

Through each region capitalising on its opportunities, building on its own unique competitive advantages, the Australian economy as a whole will grow and prosper.

## Action 20: Coordinated, short and long term infrastructure plans in our regions

While demand for resources in our regions is rising steeply, planning in our regions is not keeping pace.<sup>109</sup>

There is poor coordination and integration between different planning bodies, and disconnect between regions.

A 2012 report found the full potential of regional planning was not harnessed because individual regions have limited powers and mandates to move from planning and advocacy to funding, financing and delivering infrastructure.<sup>110</sup> Regional infrastructure plans fail to adequately respond to the long term freight challenge, with limited focus on regional freight systems and supply chain coordination.

Greater integration and coordination is needed between Government entities and the private sector (resources, transport and agricultural industries). Such coordination would enable

scale, support economic development, improve planning outcomes and maximise opportunities for funding through sources such as the regional infrastructure fund. As our regions grow, our ability to plan and fund regional infrastructure must also grow.

This means investing in regional infrastructure that strengthens our economy – providing the freight links to the nodes in our export market, our international ports. This is not simply the task of Governments, but a coordinated effort between the major beneficiaries of that infrastructure and the regulators that dictate how and when it can be developed.

Our regions must take advantage of the opportunities to grow at a time when climate change is impacting the seasonal patterns that they have come to rely on. This means we must build the community infrastructure to support growth in our regions and provide the necessary infrastructure to facilitate wider growth across regions.

The resilience of Australia's regional supply chains is being tested by the unpredictability and extreme weather conditions caused by climate change.

Devastating floods, bushfires and severe droughts have all impacted the regional economy, with alarming frequency. They impact on our agricultural production capacity (food security), natural resources (water security) and the reliability and productivity of our networks.

Engineers Australia 2010 infrastructure report card identified the big climate change effects on infrastructure. These included reduced water entering dams, placing greater emphasis on water demand reduction and manufactured water, and infrastructure damage from flooding, bushfires and intense storm activity.

Adapting to extreme weather conditions through resilient infrastructure and response and recovery after extreme weather events avoids significant social and economic cost. For example, capital investment in Queensland was significantly reprioritised after the 2011 floods to rebuild the economy, which was forecast to reduce national GDP by 0.50-0.75 per cent in 2011.<sup>111</sup>

Without resilient regional supply chains, Australia not only risks erosion of existing productivity and higher inflation in the short term but also misses an opportunity to position itself to take advantage of stronger forecast growth from Asia over the long term.

A working group, comprising of members from the Commonwealth, state and territory jurisdictions and the Australian Local Government Association, is currently developing the draft regional infrastructure investment strategy.

The strategy will be a guide for identifying, prioritising, financing and funding decisions for regional infrastructure projects, complementary to the work of Infrastructure Australia.

This is a first step in trying to bridge the gap in mid-range infrastructure in regional Australia in a nationally coordinated way. Planning and prioritising infrastructure investment to create a pipeline of investments across regions and jurisdictions that will be attractive to private investment is a huge task. Such a significant change in the way we plan and finance infrastructure will take time but the work has now commenced on putting in place the right parameters.



## Case Study – Pilbara Cities – Diversifying the Pilbara Economy<sup>112</sup>

The Pilbara Cities initiative was launched by the Western Australia Government in 2009 to increase the population of Karratha and Port Hedland to 50,000 people each, and Newman to 15,000 people by 2035, with other Pilbara towns growing into more attractive, sustainable local communities.

Over \$1 billion of funding has been allocated from the State's Royalties for Regions program.

In order for the Pilbara to become normalised and to grow sustainable functioning cities, a broader more diverse economic base is required. The Pilbara Cities Economic Diversification Framework will facilitate major capital investment in new projects, products or services of strategic importance to expand the Pilbara's economic base. The allocation of \$30 million of royalties for regions funding will support and encourage economic diversification in the Pilbara by reducing barriers to diversification, providing incentives to overcome market constraints and generating knowledge to promote investment opportunities.

The Frank Butler Centre, Karratha, Western Australia.



# WE MUST BUILD ON OUR SUCCESS AND ADOPT A RENEWED FOCUS ON PRODUCTIVITY THAT DRIVES THE NEXT PHASE OF ECONOMIC GROWTH FOR OUR FOOD AND AGRICULTURE SECTOR.

## Action 21: Consolidate regional local governments

Australia's 565 local governments are responsible for local land, roads and buildings.<sup>113</sup> They also have important planning responsibilities such as the rezoning of land, subdivision approval and town planning.<sup>114</sup>

Today, half of Australia's local government entities look after less than 7,300 residents with correspondingly low, unsustainable revenue bases.<sup>115</sup>

Options to strengthen local and regional infrastructure planning and delivery include consolidation of local governments, regional infrastructure delivery models or formal agreements between bodies with infrastructure responsibilities. In New South Wales and Queensland, there is an urgent need for regional governments to amalgamate.

Local government boundaries should reflect economic regions. Merged local governments would minimise complexity and support sustainable tax bases and more sustainable infrastructure investment in our regions.

## Action 22: Make better use of scarce water resources to provide certainty to communities and invest in a thriving food sector

Water is the lifeblood that keeps our regions alive and prosperous. Unfortunately water supply is also very unpredictable.

Australian communities have often found themselves at the mercy of severe drought conditions, which have devastated agricultural communities and forced regional communities to truck-in drinking water. In the long term, and as climate patterns change, the economic growth of our regions will remain at the mercy of seasonal water supply – unless we invest in ways to capture and store our water and use it as efficiently as possible.

In some instances progress has been made, such as investment in desalination plants to provide alternative, non-rainfall dependent water sources predominantly in our capital cities.

Australia's agricultural practices and systems continue to evolve to make the best use of our precious water resources. Water use efficiency on irrigation farms has on average increased by 300 per cent since 2000 through the adoption of advanced water delivery, such as in-ground pipes replacing open channels, and new crop varieties.<sup>116</sup>

The merits of innovative infrastructure solutions, such as diverting surplus water from high rainfall regions in North Queensland to its inland regions for agriculture, deserve further consideration.

Our big opportunity is the significant increase in global demand for food. By 2030 there will be 3.2 billion people in Asia Pacific's middle-class and the value of global food demand will increase 77 per cent by 2050.<sup>117</sup>

These changes present enormous opportunities for Australia's food and agriculture sector. We must build on our success and adopt a renewed focus on productivity that drives the next phase of economic growth for our food and agriculture sector.

Implementing the national ports strategy and national land freight strategy are essential to planning and delivering the infrastructure we need now and into the future.

Our transport infrastructure needs to provide reliable and fast connections from farm gates to global markets. We must make sure we have the right infrastructure today and the right processes for identifying and delivering the infrastructure we need tomorrow. This means food and transport systems that enable the food and agriculture sector to quickly respond to rapidly changing global food demands.

The national food plan provides some of the foundation work needed to identify the infrastructure plans and investments we need to seize market opportunities and shape how we respond to the challenges involved in growing, processing, moving and selling food.



## Case study – Tasmanian irrigation scheme

Tasmania is not short of water. It has 13 per cent of Australia's total rainfall run-off, so it would seem that there is little need to invest in irrigation water in Tasmania.<sup>118</sup> However, the first stage of the irrigation scheme, which delivered ten new irrigation projects, is clearly showing the benefits that can be achieved as irrigated water removes the guesswork of relying on rainfall.

Tasmania is home to a growing industry of highly skilled farmers and agricultural scientists. Along with naturally fertile soils and a temperate climate, many farmers will be in a position to transform their lands to grow new produce, or build on existing farms with greater certainty if they have a reliable water supply.

Certainty of water supply allows farmers to invest in on-farm infrastructure and establish all important long term contracts with retailers and suppliers. Similarly, upstream businesses, such as packaging and processors are able to reliably invest in new infrastructure with greater certainty to expand their operations.

The first stage of the scheme has seen Tasmania's regions grow more prosperous. There has been significant expansion of many industries, including an increase in lettuce production which grows best under a dry climate and an irrigated water supply. There are also new plantations of expensive Japanese cherries, pyrethrine, carrot seeds, expansion of dairy and cattle farms – the list is quite limitless.

The second stage of the scheme is seeking to transform five more regions by harnessing and storing the winter run-off, and reintroducing it when it is most needed over the summer months, typically as direct recharge back into the river system. The benefits will not just be to business, they will positively impact those communities that support them by providing much needed employment and opportunities for downstream and upstream industries.

Farmer tending to pivot irrigation system on split field of poppies and potatoes, Winnaleah, north-east Tasmania.





# ASIA'S DEMAND FOR AUSTRALIAN MINERALS AND RESOURCES IS HAVING A DRAMATIC EFFECT ON THE NATIONAL ECONOMY AND OUR INFRASTRUCTURE NEEDS.

## Action 23: Moving minerals and resources from pits to ports

Australia's minerals and resources sector will continue to play a vital role in the Australian economy.

Asia's demand for Australian minerals and resources is having a dramatic effect on the national economy and our infrastructure needs. Existing ports and rail systems are approaching capacity and increased production from regions will attract significant investment in infrastructure in the coming decades.<sup>119</sup>

We need to make sure we have the right infrastructure planning to move our commodities from Australia's regions to global markets. This will require a whole of supply chain focus across rail, road and port infrastructure.

Consistent with the national ports strategy and the development of a complete national land freight strategy, a major effort around all our mining ports must start with:

- Thirty year plans for every commodity port to ensure it will meet future trade and production requirements;
- Regular reporting by every port against agreed national performance indicators;
- Much more efficient coordination and planning of both inbound and outbound logistics. This means planning for the efficient movement of inbound fuel, equipment and supplies similar to the approach being proposed for Gladstone and in the Western Australia Regional Freight Transport Strategy, and supply chain coordination similar to what has been done in the Hunter Valley and proposed for Townsville and Mount Isa;

- Reform to ensure the national access regime supports the optimal development and use of infrastructure (currently being progressed by the Productivity Commission); and
- Adding two missing links in regional Australia to the national freight network, Newcastle Port in New South Wales and the North West Coastal Highway in Western Australia.

## Action 24: Recycling capital from regional assets to much-needed regional infrastructure

Governments currently own regional airport assets that could be transferred to the private sector to drive productivity in our regions and unlock funding for much-needed regional infrastructure.

Private ownership of Australia's capital city airports has delivered some productivity gains that could be replicated across regional airports. A study by the Productivity Commission noted Australian research that found that in a sample of 13 Australian airports, the rate of productivity growth following their privatisation was generally faster than in the period prior to privatisation.<sup>120</sup>

Airports have strong regulatory arrangements that protect community interests through the Airports Act 1996. This Act requires owners to detail plans for land use, development, ground transport access arrangements, aircraft noise management, and their environmental management.

State Governments also own plantation forests suitable for sale to the private sector. Many of these plantations are commercial and, with the right approach to public policy issues, could be easily transferred to the private sector.





Lajamanu town in remote Northern Territory has a population of 669 people, of which 92 per cent are Indigenous.



09

# ESSENTIAL INDIGENOUS INFRASTRUCTURE



## THERE HAS BEEN A FAILURE TO DELIVER ESSENTIAL INFRASTRUCTURE ASSETS AND SERVICES IN REMOTE INDIGENOUS COMMUNITIES THAT ARE CONSISTENT WITH OTHER COMMUNITIES IN A SIMILAR LOCATION AND OF A SIMILAR SIZE.

Almost 70 per cent of Indigenous Australians live in regional, remote and very remote areas of Australia.<sup>121</sup> This means that just under 400,000 Indigenous people live in highly diverse communities ranging from discrete towns with several thousand people, to tiny outstations with up to 20 people.<sup>122</sup> There are approximately 1,200 discrete Indigenous communities in remote Australia<sup>123</sup> and significant Indigenous populations in large towns in regional areas and smaller towns in remote Australia.

Essential infrastructure is energy, water and waste water, transport (roads, aviation and ports) and telecommunications. Without essential infrastructure, homes, schools and health services cannot be provided to remote communities.

Thus if we are serious about Closing the Gap – and we all are – then we must be equally serious about delivering the required essential infrastructure assets and services to agreed standards of service and reliability.

### What is the problem?

The problem is a failure to deliver essential infrastructure assets and services in remote Indigenous communities that are consistent with other communities in a similar location and of a similar size.

Australians expect and typically enjoy a relatively high standard of essential infrastructure and services in regional towns and cities. However, the standards of essential infrastructure and services vary widely between discrete Indigenous and non-discrete communities of similar size and remoteness. There is no acceptable reason for this and Indigenous Australians living in remote and very remote communities should be able to expect the same standard of essential infrastructure and services as other Australians in similar circumstances.

A review of infrastructure in 2010 found that there was “a serious deficiency in available infrastructure in remote regions. Poor roads and inadequate telecommunications services are impeding people from accessing services, education and training facilities and economic opportunities”.<sup>124</sup>

Indigenous investments across health, housing, education, and economic infrastructure have increased rapidly in real terms since the 1970s, with modest and mixed results.<sup>125</sup> Direct expenditure nationally in 2010-11 was \$25.4 billion, including funding provided to local governments and non-Government service providers with approximately 75 per cent being allocated to fixed costs such as welfare payments.<sup>126</sup>

All jurisdictions in Australia have allocated budgets that do not match their essential infrastructure requirements in remote Indigenous communities. They all seek to ensure their budgets deliver the greatest benefits, but are challenged by the high cost of delivery and servicing.

High costs are driven by several factors including: difficulty of access (distance and road conditions); very high demand for contractors and tradespeople; the need for resilient materials; and quality work that can withstand extreme climates and higher intensity of use from the typically higher number of residents per house than in non-Indigenous communities.

But an even more significant impact on affordability is the waste from far too much duplication, overlap and competition for funding within and across governments. We simply do not get enough value out of the money that is currently invested. The result is a lack of integration as planning for essential infrastructure in remote Indigenous communities often occurs in separate agencies under different programs at different levels of government.

More than 230 Indigenous-specific and mainstream programs serve the Indigenous community. The competition for resources between regional and remote housing, municipal and essential services and infrastructure programs increase cost pressures for these programs.<sup>127</sup>

Despite all this investment and activity, there are still limited opportunities for economic development in remote and very remote Australia. In particular, the potential for essential

infrastructure delivery, operations and maintenance to drive economic development is rarely taken up. Governments have the capacity to lead a step change in their procurement policies and practices. They must do so to support the economic development of Indigenous communities in remote Australia.

Maintaining the status quo will perpetuate the duplication of services, poor financial management and deficient asset risk management. The complete absence of expectation of a return on investment may not be using existing budgets most effectively.

While Commonwealth agencies are not the sole source of these problems, the Australian Government should lead the way to help solve them.

## Essential infrastructure is the foundation to Closing the Gap

In December 2007, the Council of Australian Governments agreed to a partnership between all levels of government to work with Indigenous communities to achieve the target of Closing the Gap in Indigenous disadvantage.

In some areas the gap is closing due largely to improvements in urban areas, while the gap in remote and very remote areas is staying the same or widening. For example, the average gap in education outcomes across all indicators is an alarming 24 per cent nationally, 38 per cent in remote areas, 61 per cent in very remote areas and a scarcely believable 81 per cent in very remote schools in the Northern Territory.<sup>128</sup>



## THERE ARE A NUMBER OF MAJOR CHALLENGES THAT MUST BE TACKLED TO ENSURE IMPROVED PLANNING, PRIORITISATION, FUNDING AND DELIVERY OF ESSENTIAL INFRASTRUCTURE ASSETS AND SERVICES.

The cause of the problem is multifaceted and there are a number of major challenges that must be tackled to ensure the improved planning, prioritisation, funding and delivery of essential infrastructure assets and services. These are:

1. Resolution of tenure impediments, including those associated with Native Title (under the *Native Title Act 1993*), Aboriginal Land (under the *Aboriginal Land Rights (Northern Territory) Act 1976*), Deed of Grant in Trust and Crown leases.
2. Consistent and comprehensive town planning (community master plans) with the necessary cultural overlays. The purpose of cultural overlays is to meet the needs of Indigenous communities in recognising cultural matters such as men's and women's business, lore sites and creation story sites, and to avoid problems with the location of new infrastructure. Accordingly, significant engagement with local Indigenous people must occur at this stage.
3. Clarity of asset governance responsibility, including ownership, management and maintenance.
4. Enabling Indigenous wealth creation through employment and enterprise, specifically through procurement targets and reporting.
5. Risk management regarding operation and life of asset and capacity to service the population.
6. Formalising (in law if required) 'minimum service standards' for essential infrastructure in remote communities to ensure we are working toward standards that apply to everyone living in remote Australia – Indigenous and non-Indigenous.

These six matters are not adequately addressed in any jurisdiction. There are successful initiatives in two jurisdictions that are providing greater coordination, accountability and focus, though much more needs to be done.

A key feature of the initiatives in these two jurisdictions is the governance reforms that see one entity being largely responsible for the coordination of remote Indigenous infrastructure with the authority to address the matters mentioned above. These governance reforms have overcome the major challenge created by the plethora of competing Government bodies, misaligned incentives, funding sources and decision makers that see poorly coordinated essential infrastructure assets and services failing to close the gap.

Similar outcomes can be achieved through essential infrastructure delivery and services in remote Australia. Such outcomes will transform remote Indigenous communities from largely welfare based regional economies to sustainable communities where individual and household wealth creation is derived from the private sector.



## Case study: Indigenous employment and enterprise in remote Australia<sup>129</sup>

GLH Contracting is Australia's largest 100 per cent Indigenous owned civil contracting business. GLH Contracting predominantly operates in remote Western Australia delivering a range of services to clients in the resources sector, including Rio Tinto, BHP Billiton, Fortescue Metals Group, Anglo Ashanti, Newcrest and the WA Water Corporation. Their services include road building, tailings dam construction, bulk earthworks, airport runway construction, as well as equipment, plant and labour hire.

GLH Contracting recently won the head contract with Rio Tinto Iron Ore at the Marandoo Iron Ore Mine, Pilbara Western Australia. The project is large and complex with six separate work fronts running simultaneously and with significant procurement and labour hire challenges. GLH Contracting brings to this project their considerable health and safety record of no lost time injuries in 14 years, as well as their impressive Indigenous employment and enterprise outcomes. Company-wide GLH Contracting has 35 per cent Indigenous employment, but at a project level such as Marandoo this can be as high as 80 per cent. In addition, as the head contract manager, they are responsible for a range of procurements and look to support local Indigenous small businesses in the process.

The successful delivery of this project saw GLH Contracting invited by Rio Tinto to participate in the Supplier Recognition Awards Programme.

Maningrida, Arnhem Land, Northern Territory.





Aerial view of Gunbalanya, Arnhem Land,  
Northern Territory.



# A LACK OF COORDINATION OF INFRASTRUCTURE IN REMOTE INDIGENOUS COMMUNITIES IS A SIGNIFICANT FACTOR IN THE LACK OF PROGRESS ON CLOSING THE GAP.

## A new way of planning, prioritising, funding and delivering essential infrastructure in remote Indigenous communities

All infrastructure proposals should stand up to rigorous assessment, including essential infrastructure in remote Indigenous communities. Without quantitative evaluation of projects before and after delivery, Governments cannot determine policy and spending effectiveness, assess where funds are best targeted, or identify programs that can accelerate effective change or change direction on ineffective programs.

Proposals for remote Indigenous infrastructure spending will rarely demonstrate a net benefit under a traditional cost benefit analysis, due to higher costs, fewer users and a lack of agreed community benefit valuations.

To tackle this, Infrastructure Australia in consultation with Indigenous leaders, governments and non-government organisations has developed a tailored cost benefit analysis tool to help prioritise infrastructure spending in remote Indigenous communities. This tool is included in the remote Indigenous Infrastructure Policy framework, which delivers a new methodology for the planning, prioritisation, funding and delivery of essential infrastructure in remote Indigenous communities.

## Action 25: Endorse the Remote Indigenous Infrastructure Policy Framework

Australian Governments need to recognise that the lack of integration and coordination around infrastructure in remote Indigenous communities is a significant factor in the lack of progress on Closing the Gap.

The remote Indigenous infrastructure framework addresses the multifaceted causes of the problems outlined above and defines a new governance model that the jurisdictions can adopt to deliver improved essential infrastructure assets and services outcomes to underpin closing the gap efforts. Implementation of the framework will deliver better outcomes for the current spend, but it will not deliver an increased spend – which is also necessary.

## Action 26: Create a remote Indigenous Communities Essential Infrastructure Investment Fund

More than \$25 billion is spent on Indigenous services and infrastructure each year across Governments, with mixed outcomes.<sup>130</sup> To help close the gap, funding of essential infrastructure must be a priority for all jurisdictions – such funding cannot be a political or bureaucratic football.

As a first but significant step, a fund should be established in each State and Territory to:

- Coordinate infrastructure spending across Governments for remote essential and municipal infrastructure;
- Implement an effective governance and financing model for the infrastructure life cycle (capital and maintenance); and

- Allocate funds on the basis of rigorous assessment and prioritisation.

An Indigenous infrastructure fund could improve value for money during project delivery though bundling capital works into a single package of investment or construction. This is critical given mobilisation and demobilisation can represent 30 per cent of infrastructure project delivery costs. For example, projects such as housing can be delivered alongside health and education projects and the essential infrastructure that is a prerequisite for all of them.

Different jurisdictions have tried different approaches to coordinating agencies, resolving land tenure issues, supporting master plans, reducing costs and delivering strong Indigenous employment outcomes. The Northern Territory remote infrastructure program office is a promising example of housing and regional development coordination, where the office has regulatory powers to amend tenements to enable remote Indigenous infrastructure development.

A key element of the remote Indigenous infrastructure policy framework is that all State and Territory jurisdictions should establish an office of remote Indigenous infrastructure to build coordination and communication between departments and jurisdictions and across the three levels of Government.

The proposed offices or equivalent, in each jurisdiction must be responsible for transparent monitoring, evaluation and reporting of the effectiveness of the framework as well as the programs they are overseeing. They would also ideally oversee the management of the remote Indigenous community infrastructure fund.



## Case Study: Northern Territory Power and Water Corporation use of smart meters and remote monitoring to empower community and reduce costs

Following the successful trial of smart meters at Santa Teresa Northern Territory, the Power and Water Corporation has extended the smart meters roll out to Gunbalanya. This will help improve the management of water resources in a community that is known to have limited supplies. Data from the meters that are on all houses and buildings in the community help inform operators of leaks.

The Power and Water Corporation will work with West Arnhem Shire and the Department of Housing, Local Government and Regional Services to use smart meters and community engagement to help achieve sustainable water consumption levels. In addition, supervisory control and data acquisition systems are being introduced. These systems enable the monitoring and control of supply systems and ensure they operate as effectively as possible.

All this work has helped Power and Water Corporation reach significant Indigenous employment levels, with 70 of their 150 essential service officers being Indigenous.

Hopevale Council electrician connecting power to new housing, Queensland.



## POTENTIAL NEW SOURCES OF INVESTMENT IN INDIGENOUS INFRASTRUCTURE ARE INVESTMENT FUNDS SEEKING SOCIAL AS WELL AS FINANCIAL RETURNS.

### Action 27: Trial innovative financing approaches to develop more economic infrastructure and attract private sector investment into Indigenous infrastructure

Private sector investment in Indigenous infrastructure has not been explored to a great extent. The potential new sources of investment in Indigenous infrastructure include the communities themselves, funds that target investors seeking social as well as financial returns, and the philanthropic sector.

Many investors are seeking social impacts as well as financial returns. The social impact bond concept envisages a mix of investors, philanthropists and commercial lenders providing the capital to finance a program that delivers these outcomes – with Government repaying the private capital based on the services provided and the achievement of agreed outcomes in areas such as health, education and employment. This concept is now being applied to social programs, but a model has not yet emerged for a combined social and infrastructure application.

There is also the opportunity to combine contracts for whole-of-life infrastructure outcomes with contracts for social, health and education outcomes.<sup>131</sup> Such procurement approaches are more complex than traditional approaches and the public and private sectors will need to build their capacity to adopt such approaches.

The new remote Indigenous communities infrastructure investment funds could, with the private sector, explore and trial innovative financing approaches that would be viable in remote Indigenous communities. Potential pilot sites could include infrastructure in remote mining communities.

Private financing options may include the use of social impact bonds, public private partnerships, or other models that enable Governments to pay private providers and investors on the basis of infrastructure and service delivery outcomes they deliver for remote Indigenous communities.



10

**REFORMS  
AND ACTIONS  
AT A GLANCE**







Flinders Street Station, Melbourne, Victoria.

# APPENDICES



# APPENDIX A

## NATIONAL INFRASTRUCTURE PRIORITY LIST

### Australia's infrastructure investment priorities

The 2013 national infrastructure priority list sets out priorities for Australia's infrastructure investment portfolio.

Given the financial and other challenges governments face, rigorous project development and evaluation is critical – we need to invest wisely, by investing in initiatives that represent the most productive use of each dollar we spend, whilst solving the big problems first.

### Updating the 2013 infrastructure priority list

#### Submissions

Seventy nine proposals were submitted for inclusion on the 2013 priority list, detailing a suite of potential projects with an estimated cost of over \$80 billion.<sup>1</sup> The submissions received include new projects and updated submissions containing new information, and are listed in Table A2. Submission titles are based on those provided by the proponent and new submissions are marked with an asterisk.

Fifty three of the submissions were for new projects. Of these, thirty four were included on the priority list with an estimated value of \$24 billion to \$27 billion.

### The reform and investment framework

Proposals submitted for inclusion on the infrastructure priority list are rigorously assessed against Infrastructure Australia's reform and investment framework.<sup>2</sup> The framework emphasises the identification and consideration of initiatives and policy reform options to make better use of existing assets. The framework also guides proponents to present and articulate their proposals to demonstrate:

- **Strategic alignment** – proposals must outline clear goals that contribute to nationally significant priorities. Project objectives must seek to improve productivity and have reference to at least one of Infrastructure Australia's seven themes;
- **Problem definition** – proposals must address and evaluate problems that restrict the achievement of or progress towards these goals. Understanding the root cause of the problem – not just the problem itself – is critical; and
- **Solution development** – proposals must identify the best solution to address the problem that meets the goals of the project whilst delivering a net economic benefit. To do this, a comprehensive set of reform and investment options must be considered.

Proposals included on the priority list are categorised as early stage, real potential, threshold or ready to proceed.

Proposals at early stage and real potential are at the initial stages of development and range from those that seek to address a problem of national significance that is still being investigated before solutions are proposed, to those that explore a range of potential solutions.

Proposals at threshold are well developed and present a detailed preferred option, or options. Ready to proceed proposals represent good investment decisions that have met all of Infrastructure Australia's reform and investment criteria. They are priority infrastructure proposals that will deliver the real economic benefits.

Conditions of funding should include agreement by the relevant jurisdiction to undertake a post-completion evaluation of the project to test whether the project was completed within scope, on time and on budget; to assess whether demand projections underpinning the project's development were robust; and assess whether other project benefits have been realised.

A minimum capital cost threshold of \$100 million for submissions was introduced in 2011 and was applied in this round. There is no capital threshold for projects considered for funding by the Regional Infrastructure Fund.

# Infrastructure Australia's Reform and Investment Framework

Core element	Stage and purpose	Early stage	Real potential	Threshold and ready to proceed (if all issues addressed)
<b>Strategic alignment</b> Proposal supports Infrastructure Australia's strategic priorities and aligns with state plans	<b>1. Goal definition</b> <i>Goals defined to provide the foundation for problems that need to be addressed as priority and drives the development of solutions</i>	<ul style="list-style-type: none"> <li>Proposal will make a positive contribution to Infrastructure Australia's strategic priorities.</li> <li>Goals of the proposal are identified and align with national, state or regional strategic plans.</li> <li>Proposal prioritised within state or regional strategic plans.</li> </ul>	<ul style="list-style-type: none"> <li>Proposal's economic, social and environmental goals quantified. Examples may include:                             <ul style="list-style-type: none"> <li>service standards;</li> <li>cost recovery targets; and</li> <li>patronage/user targets.</li> </ul> </li> <li>Demonstrated integration across stakeholders / infrastructure sectors.</li> </ul>	<ul style="list-style-type: none"> <li>Confirm benefits delivered by preferred option are aligned with goals, for example benefit profiles and a benefits realisation plan.</li> </ul>
<b>Problem evaluation</b> a. Problem being addressed is well understood and is an impediment to achieving intended goals. The costs of the problem and potential benefits are presented and supported by evidence. b. Understanding causes allows effective and targeted solutions to be created.	<b>3. Problem identification</b> <i>Identify the problems that may hinder the achievement of goals</i>	<ul style="list-style-type: none"> <li>Current and/or future problem described. Describe what the problem will become in the future if it is not addressed.</li> <li>Problem linked back to goals within the state or regional strategy.</li> </ul>	<ul style="list-style-type: none"> <li>Scenario analysis completed over reasonable time horizon demonstrating problems will persist or emerge under plausible scenarios.</li> </ul>	
	<b>4. Problem assessment</b> <i>Gather data rich evidence that demonstrates the problem and allows the biggest problems to be prioritised.</i>	<ul style="list-style-type: none"> <li>Economic, social and environmental costs estimated qualitatively.</li> </ul>	<ul style="list-style-type: none"> <li>Quantified economic, social and environmental impacts of the identified problem, supported by data, for example surveys, studies, performance against key performance indicators.</li> <li>Analysis presented that demonstrates the root cause.</li> <li>Explanation of why the problem cannot be solved without government intervention.</li> </ul>	
	<b>5. Problem analysis</b> <i>Analyse the extent of problems and the root causes</i>			
<b>Solution selection</b> The developed proposal has considered a comprehensive set of reform and investment options, there is solid evidence that the project will generate economic benefits, and there is confidence that the project can be successfully delivered.	<b>6. Option generation</b> <i>Develop a full range of possible solutions to address the issue including reform and investment proposals</i>	<ul style="list-style-type: none"> <li>Specific solution options not required in submission.</li> </ul>	<ul style="list-style-type: none"> <li>Option evaluation criteria to measure performance against the goals of the proposal.</li> <li>Comprehensive list of reform and investment options identified.</li> </ul>	
	<b>7. Option assessment</b> <i>Strategic analysis and cost benefit analysis to assess the viability of the options</i>	<ul style="list-style-type: none"> <li>Option assessment not required in submission.</li> </ul>	<ul style="list-style-type: none"> <li>Rapid benefit cost ratios (BCR) prepared for shortlisted options.</li> <li>Shortlisted options adequately described, including details of key assumptions and risks, demand estimates, impacts and benefits, whole of life costs, funding and financing opportunities.</li> <li>Cost estimates for shortlisted options based on consistent framework built up from first principles.</li> <li>Contingency allowance based on risk profiles.</li> </ul>	<ul style="list-style-type: none"> <li>Whole of life costs, service delivery outcomes and engineering design optimised during development of the preferred option, for example value engineering.</li> <li>Demonstrated integration of the proposed solution across systems and related infrastructure sectors</li> <li>Detailed cost benefit analysis including:                             <ul style="list-style-type: none"> <li>funding options to provide maximum cost recovery;</li> <li>financing and delivery/procurement models including public private partnerships;</li> <li>risk assessment; and</li> <li>base cost estimate and risk allowance.</li> </ul> </li> </ul>
	<b>8. Solution prioritisation</b> <i>Detailed business case for the preferred option including cost benefit analysis, strategic fit and deliverability (including cost, risk and procurement)</i>	<ul style="list-style-type: none"> <li>Solutions not required in submission.</li> </ul>	<ul style="list-style-type: none"> <li>Sensitivity analysis of short-listed options to confirm choice of preferred option is robust.</li> <li>Sound methodology outlined for project procurement models.</li> </ul>	<ul style="list-style-type: none"> <li>Detailed delivery outcomes, including cost recovery target maximised considering all potential revenue streams.</li> <li>Benefit cost ratio (BCR) justifies investment decision.</li> <li>Independently reviewed risk based cost estimate, risk assessment, demand models and economic appraisal.</li> <li>Sound delivery strategy and governance model defined.</li> </ul>



# Submissions to Infrastructure Australia in 2012-13

Submission title	Proponent
<b>Transforming our cities</b>	
Brisbane TransitWays – Northern and Eastern <sup>3</sup>	Queensland Government
Ipswich Motorway (Rocklea to Darra)*	Queensland Government
Brisbane Inner Rail*	Queensland Government
Pacific Motorway – Gateway Motorway to Tugun Upgrade*	Queensland Government
Pacific Motorway – Mudgeeraba to Varsity Lakes, capacity upgrade*	Queensland Government
Queensland National Managed Motorways – Bruce Highway: Carseldine to Caboolture <sup>4</sup>	Queensland Government
Queensland National Managed Motorways – Pacific Motorway: Gateway Motorway to Tugun <sup>5</sup>	Queensland Government
New South Wales National Managed Motorways – M4 Motorway*	New South Wales Government
Western Sydney bus and road upgrades – North West integration package*	New South Wales Government
Inner Sydney Regional Bike Network*	New South Wales Government
Sydney Light Rail*	New South Wales Government
Western Sydney road upgrades: west and southwest accessibility*	New South Wales Government

Submission title	Proponent
Transport plan for Far West New South Wales*	New South Wales Government
Victorian National Managed Motorways – Monash Freeway, High Street to Warrigal Road	Victorian Government
Victorian National Managed Motorways – Monash Freeway, Warrigal Road to Clyde Road	Victorian Government
Melbourne Metro	Victorian Government
Dandenong Rail Capacity	Victorian Government
Growth areas transport package*	Victorian Government
Removing level crossings	Victorian Government
Avalon Airport Link	Victorian Government
Airport Rail Line*	Western Australian Government
Perth Rapid Transit*	Western Australian Government
Thornlie line to Mandurah line*	Western Australian Government
Adelaide East – West Bus Corridor*	South Australian Government
South Road Upgrade	South Australian Government
Adelaide public transport plan*	South Australian Government
City to Gungahlin Transit Corridor*	Australian Capital Territory
<b>Competitive international gateways</b>	
Gateway Motorway Upgrade North	Queensland Government

Submission title	Proponent
Newcastle Port – Kooragang Island Connectivity*	New South Wales Government
Port Botany and Sydney Airport Transport Improvement Plan	New South Wales Government
Western Interstate Freight Terminal	Victorian Government
Port of Hastings	Victorian Government
Bunbury Outer Ring Road <sup>6</sup>	Western Australian Government
Port Hedland – Great Northern Highway Overpass*	Western Australian Government
Northern Connector	South Australian Government
<b>A national freight network</b>	
Toowoomba Second Range Crossing	Queensland Government
Warrego Highway Upgrade Program – Helidon to Morven	Queensland Government
Landsborough to Beerburrum rail duplication*	Queensland Government
Mount Isa to Townsville Rail Corridor Upgrade	Queensland Government
Bruce Highway road safety*	Queensland Government
Bruce Highway flood immunity bridges*	Queensland Government
Bruce Highway pavement strengthening*	Queensland Government

\* New proposal this year.

## Submissions to Infrastructure Australia in 2012-13

Submission title	Proponent
Bruce Highway Caloundra Road to Sunshine Motorway*	Queensland Government
Cunningham Highway*	Queensland Government
Bruce Highway – Yeppen Floodplain*	Queensland Government
F3 Widening – Tuggerah to Doyalson*	New South Wales Government
Automatic Train Protection and Automatic Train Operation*	New South Wales Government
WestConnex*	New South Wales Government
Scone – rail level crossing*	New South Wales Government
Singleton – Gowrie Gates underpass*	New South Wales Government
Moorebank Intermodal supporting infrastructure*	New South Wales Government
Princes Highway – Gerringong to Nowra*	New South Wales Government
Second Bridge over Clarence River at Grafton*	New South Wales Government
Bridges for the Bush program 1*	New South Wales Government
Bridges for the Bush program 2*	New South Wales Government
New England Highway – Belford to Golden Highway*	New South Wales Government
M80 Ring Road Upgrade*	Victorian Government
East West Link	Victorian Government

Submission title	Proponent
High Productivity Freight Vehicles Upgrade Package*	Victorian Government
High Capacity Test Line Signalling – Pilot project	Victorian Government
Outer Metropolitan Ring Road*	Victorian Government
Murray Basin Transcontinental Rail Link <sup>7</sup>	Victorian Government
Shepparton bypass*	Victorian Government
Western Highway; Ballarat to Stawell*	Victorian Government
Princes Highway East Duplication; Traralgon to Sale*	Victorian Government
North West Coastal Highway – Minilya to Barradale*	Western Australian Government
Leach Highway/High Street upgrade*	Western Australian Government
Great Northern Highway – Muchea to Wubin*	Western Australian Government
Perth Darwin National Highway – Swan Valley Bypass*	Western Australian Government
Metropolitan Grade Separation*	Western Australian Government
Fremantle Integrated Transport Bridge*	Western Australian Government
Albany Ring Road*	Western Australian Government
Northern Rail Corridor capacity improvements*	South Australian Government

Submission title	Proponent
Burnie to Hobart Freight Corridor	Tasmanian Government
Tasmanian Rail Revitalisation Program	Tasmanian Government
<b>Adaptable and secure water supplies</b>	
Tasmanian Irrigation <sup>8</sup>	Tasmanian Government
Water and Sewerage Reform	Tasmanian Government
<b>Essential Indigenous infrastructure</b>	
Tanami Road Upgrades*	Northern Territory Government
Anangu Pitjantjatjara Yankunytjatjara (APY) Lands – road upgrades*	South Australian Government
<b>Creation of a true national energy market</b>	
No proposals submitted against this theme.	
<b>Digital infrastructure</b>	
No proposals submitted against this theme.	

\* New proposal this year.



## 2013 Infrastructure Priority List<sup>9</sup>

	<b>Early stage</b> Initiatives in this category address a nationally significant issue or problem, but the identification or development of the right solution is at an early stage.	<b>Real potential</b> Initiatives in this category clearly address a nationally significant issue or problem and relevant options are being considered.	<b>Threshold</b> Initiatives in this category have strong strategic and economic merit. It is highly likely that the project will deliver economic benefits exceeding costs incurred.	<b>Ready to proceed</b> Initiatives in this category meet all of Infrastructure Australia's criteria.
<b>Transforming our cities</b>	<p>Brisbane to Gold Coast Transport Strategy (Qld)<sup>10</sup></p> <p>Brisbane Inner Rail (Qld; \$302m)</p> <p>Inner Sydney Regional Bike Network (NSW; \$185m)</p> <p>Sydney Light Rail (NSW; \$1,600m)</p> <p>Growth areas transport package (Vic; \$tbc)</p> <p>Airport Rail Line (WA; \$2,015m)</p> <p>Perth Rapid Transit (WA; \$1,882m)</p> <p>Canberra Transit Corridor (ACT; \$tbc)</p> <p>Capacity Improvements and Expansion of the Metropolitan Commuter Rail Network (NSW; \$795m)</p> <p>Melton Rail Line Duplication and Electrification (Vic; \$tbc)</p> <p>South Australia National Managed Motorways Project – South Eastern Freeway, Stirling to Crafers (SA; \$4.57m)</p> <p>Tram Route 86 Demonstration Project, Stages B and C (Vic; \$tbc)</p>	<p>Western Sydney bus and road upgrades – North West integration package (NSW; \$800m)</p> <p>NSW National Managed Motorways – M4 Motorway (NSW; \$400m)</p> <p>Dandenong Rail Capacity (Vic; \$700m – \$1,200m)*</p> <p>South Road Upgrade (SA; \$1,670m)</p> <p>Queensland National Managed Motorways – Bruce Highway, Carseldine to Caboolture (Qld; \$123m)</p>	<p>Melbourne Metro (Vic; BCR 1.2; \$9,000 – \$11,000m)*</p> <p>Brisbane TransitWays – Northern and Eastern (Qld; BCR 1.8; \$116m)</p> <p>Ipswich Motorway (Qld; BCR 3.2; \$558m)</p> <p>Adelaide East – West Bus Corridor (SA; BCR 1.7; \$350m)</p>	<p>Victorian National Managed Motorways – Monash Freeway, High Street to Warrigal Road (Vic; BCR 10.5; \$19.7m)</p> <p>Victorian National Managed Motorways – Monash Freeway, Warrigal Road to Clyde Road (Vic; BCR 5.2; \$137.1m)</p> <p>Brisbane Cross River Rail – core project (Qld; BCR 1.34; \$4,445m)**</p>
<b>Competitive international gateways</b>	<p>Port Botany and Sydney Airport Transport Improvement Plan (NSW; \$478m)</p> <p>Port of Hastings (incl. Peninsula Link rail freight corridor) (Vic; \$tbc)</p> <p>Port Hedland – Great Northern Highway Overpass (WA; \$170m)</p> <p>Port Hedland Inner Harbour – Capacity Enhancements (WA; North West Iron Ore Alliance; Hancock; \$500m – \$1,000m)</p> <p>Transforming the Pilbara: Pilbara Cities (WA; \$2,900m)</p> <p>Eyre Peninsula Port Proposals (SA, Centrex; \$tbc)</p>	<p>Newcastle Port – Kooragang Island Connectivity (NSW; \$85m)</p> <p>Western Interstate Freight Terminal (Vic; \$tbc)</p> <p>Bunbury Outer Ring Road Stage 2 and 3 (WA; \$675m)</p> <p>Bell Bay Intermodal Expansion Project (Tas; \$tbc)</p> <p>Melbourne International Freight Terminal (Vic; \$tbc)</p> <p>Abbot Point Multi Purpose Harbour (Qld; \$3,300m (\$2010 real))</p> <p>Smart Port ICT (Vic; \$tbc)</p>	<p>Gateway Motorway Upgrade North (Qld; BCR 4.9; \$1,300m)</p> <p>Northern Connector (SA; BCR 8.5; \$1,104m)</p> <p>National Ports Strategy – 30 year plans for ports and landside connections</p> <p>Oakajee Port (potential equity injection) (WA; BCR 1.2; c.\$5,400m (\$2010 real))</p> <p>Darwin East Arm Port Expansion (potential equity injection) (NT; BCR 2.2; \$336m)</p>	

### Notes:

Blue text indicates a new or updated submission since the 2012 Report to COAG.

Capital costs and benefit cost ratios (BCRs) cited here are those estimated by the proponent in their latest submission to Infrastructure Australia, unless denoted by \* or \*\*. Some project capital costs have been withheld at the request of the proponent.

\* Indicative cost ranges only.

\*\* Cost as shown in <http://www.crossriversrail.qld.gov.au/>

\*\*\* Cost shown is for the network and not just for the pilot project.

	<b>Early stage</b> Initiatives in this category address a nationally significant issue or problem, but the identification or development of the right solution is at an early stage.	<b>Real potential</b> Initiatives in this category clearly address a nationally significant issue or problem and relevant options are being considered.	<b>Threshold</b> Initiatives in this category have strong strategic and economic merit. It is highly likely that the project will deliver economic benefits exceeding costs incurred.	<b>Ready to proceed</b> Initiatives in this category meet all of Infrastructure Australia's criteria.
<b>National freight network</b>	<p>Mount Isa to Townsville Rail Corridor Upgrade (QLD; \$575m)</p> <p>Bruce Highway road safety (Qld; \$500m)</p> <p>WestConnex (NSW; \$10,000m – \$13,000m)</p> <p>Scone – rail level crossing (NSW; \$65m – \$90m)</p> <p>Singleton – Gowrie Gates underpass (NSW; \$25m)</p> <p>Outer Metropolitan Ring Road (Vic; \$tbc)</p> <p>Murray Basin Transcontinental Rail Link (Vic; \$tbc)</p> <p>Burnie to Hobart Freight Corridor (Tas; \$tbc)<sup>11</sup></p> <p>Northern Sydney Road Freight Access – F3-M2 (NSW; \$4,750m (\$2008))</p> <p>Australian Digital Train Control System (Australasian Railways Association; \$20m)</p>	<p>Toowoomba Second Range Crossing (Qld; \$1,660m)</p> <p>Warrego Highway Upgrade Program – Helidon to Morven (Qld; \$635m)</p> <p>Landsborough to Beerburrum rail duplication (Qld; \$770m)</p> <p>Automatic Train Protection System (NSW; \$1,200m)</p> <p>East West Link (Vic; \$6,000m – \$8,000m Stage 1)<sup>*</sup></p> <p>High Productivity Freight Vehicles Upgrade Package (Vic; \$60m – \$110m)<sup>*</sup></p> <p>High Capacity Test Line Signalling – Pilot project (Vic; \$2,500m – \$3,500m)<sup>***</sup></p> <p>Perth Darwin National Highway – Swan Valley Bypass (WA; \$700m – \$800m)</p> <p>Grade Separation (WA; \$650m)</p> <p>North South Rail Freight Corridors including Northern Sydney Freight (Australian Rail Track Corporation and NSW; \$tbc)</p> <p>Advanced Train Management System (Australian Rail Track Corporation; \$500m)</p> <p>East West Rail Freight Corridor (Australian Rail Track Corporation; \$tbc)</p> <p>Green Triangle Freight Transport Program (SA/Vic; \$tbc)</p>	<p>F3 Widening – Tuggerah to Doyalson (NSW; BCR 2.1; \$200m)</p> <p>M80 Ring Road Upgrade (Vic; BCR 2.2 \$1,050m)</p> <p>North West Coastal Highway – Minilya to Barradale (WA; BCR 1.8; \$217m)</p> <p>Leach Highway/High Street upgrade (WA; BCR 1.6; \$100m)</p> <p>Great Northern Highway – Muchea to Wubin (WA; BCR 1.3; \$361m)</p> <p>National Land Freight Strategy</p>	<p>Pacific Highway Corridor Upgrades (NSW, BCR 1.5; \$6,400m (\$2010 real))</p>
<b>Adaptable and secure water supplies</b>		<p>Tasmanian Irrigation Schemes (Tas; \$184m)</p> <p>Water and Sewerage Reform (Tas; \$1,000m)</p>	<p>Infrastructure Australia proposes reforms around planning for water security, independent pricing, competition in bulk supply and consumer choice over levels of reliability</p>	
<b>A true national energy market</b>		<p>Mid-West Energy – Stage 2 (WA; \$280m)</p>	<p>Infrastructure Australia supports proposed reforms to regulatory provisions regarding connection of remote renewable energy generation and electricity transmission connections between states</p>	
<b>Essential Indigenous infrastructure</b>		<p>Anangu Pitjantjatjara Yankunytjatjara Lands – road upgrades (SA; \$106m)</p>	<p>Tanami Road Upgrades (NT; \$196m)</p>	
<b>Digital infrastructure</b>				National Broadband Network
<b>Total capex (est)</b>	<b>\$26,757m – \$30,292m</b>	<b>\$23,998m – \$27,648m</b>	<b>\$20,287m – \$22,287m</b>	<b>\$11,002m</b>
<b>Total estimated infrastructure priority list capital costs: \$82,044m – \$91,229m</b>				



## Recommendations for the 2012–2013 Infrastructure Priority List

### National Managed Highways

#### Victoria

Monash Freeway: High Street to Warrigal Road	Ready to proceed
Monash Freeway: Warrigal Road to Clyde Road	Ready to proceed

#### New South Wales

M4 Motorway: Strathfield to Lapstone	Real potential
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#### Queensland

Bruce Highway: Beams Road to Caboolture	Real potential
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### Western Australia

Leach Highway/High street upgrade	Threshold
North West Coastal Highway – Minilya to Barradale	Threshold
Great Northern Highway (Mueha to Wubin)	Threshold
Grade Separation Program	Real potential
Bunbury Outer ring road (Stage 2)	Real potential
Perth Darwin National Highway (Swan Valley bypass)	Real potential
Perth Rapid Transit	Early stage
Airport Rail Line	Early stage
Port Hedland – Great Northern Highway Overpass	Early stage

### South Australia

Adelaide East – West Bus Corridor	Threshold
Northern Connector	Threshold
South Road	Real potential
Anangu Pitjantjatjara Yankunytjatjara Lands – road upgrades	Real potential

### Northern Territory

Tanami Road upgrades	Threshold
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### Queensland

Brisbane Cross River Rail*	Ready to proceed
Gateway Motorway Upgrade North – Nudgee Interchange to Deagon Deviation	Threshold
Ipswich Motorway	Threshold
Brisbane TransitWays – Northern and Eastern	Threshold
Toowoomba Second Range (Road) Crossing	Real potential
Warrego Highway Upgrade Program (Helidon to Morven)	Real potential
Landsborough to Beerburrum rail duplication	Real potential
Mount Isa to Townsville Rail Corridor	Early stage
Bruce Highway road safety	Early stage
Brisbane to Gold Coast Transport Strategy	Early stage
Brisbane Inner Rail	Early stage

### New South Wales

Pacific Highway Upgrade*	Ready to proceed
F3 widening, Tuggerah to Doyalson	Threshold
Western Sydney bus and road upgrades: North West integration package	Real potential
Automatic train protection system	Real potential
Newcastle Port – Kooragang Island Connectivity	Real potential
Port Botany and Sydney Airport Transport Improvement Plan	Early stage
WestConnex	Early stage
Inner Sydney Regional Bike Network	Early stage
Scone – rail level crossing	Early stage
Singleton – Gowrie Gates underpass	Early stage
Sydney Light Rail	Early stage

### Australian Capital Territory

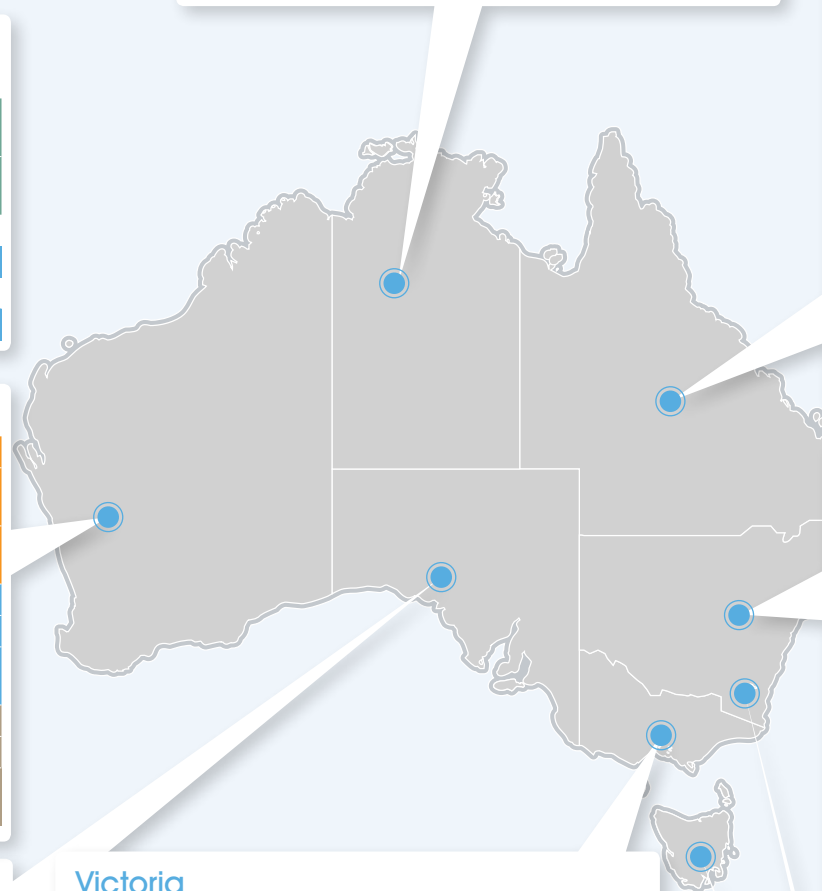
Canberra Transit Corridor Strategy	Early stage
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### Tasmania

Water and Sewerage reform	Real potential
Tasmanian Irrigation Schemes	Real potential
Burnie to Hobart Transport Strategy	Early stage

### Victoria

Melbourne Metro	Threshold
M80	Threshold
Dandenong Rail Capacity	Real potential
High Productivity Freight Vehicles upgrade package	Real potential
High Capacity Test Line Signalling (Pilot project)	Real potential
East – West Link	Real potential
Western Interstate Freight Terminal	Real potential
Murray Basin Transcontinental Rail Link	Early stage
Growth areas transport package	Early stage
Port of Hastings	Early stage
Outer Metropolitan Ring Road	Early stage



\* Ready to proceed projects from 2012.

## Ready to proceed projects

In 2010, the Australian National Audit Office recommended that Infrastructure Australia provide advice on the relative priority of ready to proceed projects, and suggest conditions on any Australian Government funding. Ready to proceed projects are prioritised by considering benefit cost ratios (measuring a project's ability to create economic value) and their strategic fit (how well it aligns in a balanced manner with the overall goals and objectives of governments and the wider community).<sup>12</sup>

The recommended order of ready to proceed projects is shown below.

Priority	Project
1	<ul style="list-style-type: none"> <li>Brisbane Cross River Rail</li> <li>Victorian Managed Motorways Project 1 <i>Monash Freeway, High Street to Warrigal Road</i></li> <li>Victorian Managed Motorways Project 2 <i>Monash Freeway, Warrigal Road to Clyde Road</i></li> <li>Pacific Highway Corridor Upgrades</li> </ul>

## Project development funding

In 2010 the Australian National Audit Office also recommended that Infrastructure Australia provide advice on proposals which are recommended for project development funding (thereby assisting governments in preparing well-conceived business cases for potential future investments).

Project development funding can play a key role in shaping the infrastructure priority list in future years. The key consideration in making recommendations for project development funding is whether the project shows promise in meeting the balance of strategic fit and economic performance described above. Timing considerations are also relevant:

- whether timely investment in project development will minimise corridor protection (and, ultimately, project) costs;
- whether the lead times to develop the project are such that, if project development is not initiated promptly, the scale of the problems addressed by the proposal are likely to become critical; and
- projects that show promise against national strategic priorities are potentially most worthy, though, where there is a plausible rapid economic appraisal, that too should be a consideration.

Recommendations on projects that are considered worthy of Australian Government project development funding are set out below.

As with project funding itself, it is appropriate for the Australian Government to attach conditions to any project development funding it might provide, for example, that the project incorporates certain features or that project development investigations address certain considerations. In addition, as evidence of their commitment to a project, proponents need to be prepared to make an appropriate contribution to project development costs.

### Project

Tasmanian Irrigation Schemes Tranche 2 (Tasmania)

Adelaide East West Bus Corridor (South Australia)

Brisbane to Gold Coast transport strategy (Queensland)

East West Link (Victoria)

Dandenong Rail Capacity Program (Victoria)

WestConnex (New South Wales)

Tanami Road upgrade (Northern Territory)



## Priorities under the transforming our cities theme

### Ready to proceed

#### Brisbane Cross River Rail – core project (Queensland Government; \$4.4 billion)

The Cross River Rail project aims to provide necessary infrastructure that will support the transformation of Brisbane into an internationally competitive city.

The Cross River Rail project is aimed at increasing rail capacity across the whole of Brisbane's urban rail network to meet forecast demand and promote sustainable urban development. South east Queensland's population is projected to grow from around 3 million in 2009 towards 4.4 million in 2031.

This core project forms the first stage of a broader program of works that can be developed in the future. The core project consists of:

- ten kilometres of twin single track tunnel between Yeerongpilly, south of the Brisbane River, and Victoria Park, north of the Brisbane central business district; and
- development of four new underground stations at Woolloongabba, Boggo Road, Albert Street and Roma Street.

Suggested funding conditions for the project are that, in taking forward the design and delivery of this project, the Queensland Government should:

- consider alternative options for revenue generation, including a parking levy and congestion charging. The analysis undertaken on the land value capture opportunity would benefit from an independent review;

- undertake further market sounding to ensure that procurement options are based on up to date feedback;
- develop a comprehensive governance model for procurement and delivery;
- agree to planning approval conditions that balance amenity and more efficient delivery;
- agree to undertake a post completion evaluation of the project;
  - upon completion, for example to test whether the project was completed within scope, on time and on budget; and
  - at agreed future intervals to assess whether demand projections underpinning the project's development were robust, and whether other project benefits have been realised.

#### Victorian National Managed Motorways (Victorian Government) – Monash Freeway, High Street to Warrigal Road (\$19.7 million); and Warrigal Road to Clyde Road (\$137.1 million)

The national managed motorways program is expected to improve productivity through better use of existing infrastructure assets.

The program seeks to improve the throughput and safety of existing motorways using available technology instead of infrastructure expansion.

The Monash Freeway provides strategic linkage between the major freight activity area south of Dandenong (with connections to the South Gippsland Freeway and the EastLink Tollway) and the rest of Melbourne including access to the Port of Melbourne and Melbourne Airport. It is also the key strategic link between Melbourne and south east regional Victoria.

There are two projects covering a total length of 33 kilometres of road. The proposal is to upgrade the Monash Freeway from level 1 Intelligent Transport System to level 3.

The High Street to Warrigal Road project involves upgrading the freeway to include variable speed limits and lane use management. The freeway currently has entry ramp signals plus vehicle detection and variable message signs.

The Warrigal Road to Clyde Road project involves upgrading the current system to include variable speed limits and lane use management. The proposal includes hard shoulder running South Gippsland Freeway and Clyde Road to provide additional peak time capacity.

It is suggested that the Victorian Government, together with the national managed motorways working group, agree to undertake a post-completion evaluation of the project:

- upon completion, for example to test whether the project was completed within scope, on time and on budget; and
- at agreed future intervals to assess whether demand projections underpinning the project's development were robust, and whether other project benefits have been realised.

### Threshold

#### Brisbane TransitWays – Northern and Eastern (Queensland Government; \$116 million)

Increasing the connectivity of high-growth areas of Chermside and Carindale with the Brisbane central business district through public transport is an important step in supporting sustainable growth in one of our major cities.

The Brisbane TransitWays project aims to connect Chermside (north of the central business district) and Carindale (south-east of the central business district) to Brisbane's metropolitan public transport network. Chermside and Carindale are the only principal activity centres in Brisbane not currently connected to the rest of the city by high quality public transport connections – for example rail, busway or bus priority.

The proposal to Infrastructure Australia is to modify existing road space to provide new bus lanes along:

- Gympie Road from Kedron to Chermside (three kilometres inbound and outbound)
- Old Cleveland Road from Main Avenue to Bennetts Road, Coorparoo (1.5 kilometres inbound)

The Queensland Government has developed this project from the Eastern Busway initiative included in last year's priority list, addressing Infrastructure Australia's concerns by presenting a lower-cost solution to the connectivity problem.

It is suggested that the Queensland Government be asked to develop a detailed business case including a robust economic analysis as part of any funding agreement.

#### Ipswich Motorway – Rocklea to Darra (Queensland Government; \$558 million)

The Ipswich Motorway lies on Infrastructure Australia's indicative national land freight network and the National Land Transport Network.

This project aims to improve travel times and reliability for freight travelling on the Ipswich Motorway between Rocklea and Darra; and support economic and urban growth between Brisbane and Ipswich.

The proposal is for a suite of road upgrades, including:

- widening to three lanes between Oxley Road and Suscatand Street;
- a northern service road across Oxley Creek; and
- ramp rationalisation and smarter motorway treatments for the seven kilometre Rocklea to Darra section length.

It is suggested that the following conditions be attached to any funding agreement with the Queensland Government:

- that the potential for public transport be further investigated; and
- that demand models be developed to determine whether the project would still be economically viable in the presence of efficient road pricing, and include user charging at a rate that reflects efficient pricing as part of any road based solution.

#### Melbourne Metro (Victorian Government; \$9 – 11 billion)

The Melbourne Metro project is an initiative that will shape Melbourne's future transport network and land use patterns. The preferred option presented could achieve up to 30 per cent capacity increase in the urban passenger rail network.

Melbourne Metro aims to benefit the entire Melbourne metropolitan rail network by creating more rail capacity in the inner-city to relieve congestion by increasing the number of suburban services across the network to accommodate projected growth.

Construction of Melbourne Metro will create six independent lines on the Melbourne network and introduce 17 additional metro-style services across Melbourne.



### Adelaide East – West Bus Corridor (South Australian Government; \$349 million)

Measures to enhance public transport services and increase public transport patronage are necessary steps to improve productivity in our major cities.

This project aims to improve the efficiency and service quality of existing bus services on the corridor serving Adelaide's east, west and north-east areas, with the intent of increasing public transport patronage.

Congestion is impacting regular bus services as well as bus rapid transit services (O-Bahn) that connect to the east-west corridor. The relative attractiveness of driving private vehicles at present is a major cause of congestion in the absence of priority measures for public transport.

The proposal to Infrastructure Australia is for a package of bus priority measures, including:

- bus priority measures along the existing road corridors;
- bus priority infrastructure at intersections; and
- upgrades to eight stops/interchanges to improve amenity and ticketing efficiency.

Infrastructure Australia supports the inclusion of both reform options and infrastructure options in the preferred solution. Reform options include painted bus lanes and traffic light signalling priority changes, road pricing measures, and parking levies; and infrastructure options include separated bus lanes and additional lanes for buses.

It is suggested that the following conditions be applied to project funding:

- the South Australian Government consider non-infrastructure measures such as increases to the car parking levy; and
- additional information be provided to demonstrate a robust cost benefit analysis.

### *Real potential*

#### Queensland National Managed Motorways – Bruce Highway, Carseldine to Caboolture (Queensland Government; \$123 million)

The national managed motorways program is expected to improve productivity through better use of existing infrastructure assets.

The objective of this project is to improve the operational performance and increase the effective capacity of the Bruce Highway to build a more productive and resilient economy and improve road safety.

This project is located at the most southern end of the Bruce Highway which is subject to regular peak period flow breakdown and congested start-stop traffic conditions for freight and passenger travel. This has also contributed to a high traffic crash record.

The proposal to Infrastructure Australia is between Gateway Motorway at Bald Hills to D'Aguilar Highway at Caboolture. It includes:

- Base intelligent transport systems;
- Pole mounted variable speed limits signs;
- Coordinated on-ramp signalling for southbound on-ramps only; and
- Hard shoulder running.

### New South Wales National Managed Motorways – M4 Motorway (New South Wales Government; \$400 million)

The national managed motorways program is expected to improve productivity through better use of existing infrastructure assets.

The objective of this project is to integrate a range of supply and demand-side congestion management tools to better utilise the capacity of Sydney's motorways and reduce the duration and severity of flow interruptions.

The M4 provides a critical east-west link between the Sydney central business district and key growth centres in Western Sydney. It is a key route for freight and commuters.

The proposal to Infrastructure Australia includes: flow monitoring; coordinated ramp metering/signalling; bypass lanes; variable speed limits; lane-use management systems; hard shoulder running; variable message signage; traveller real time information systems; supporting infrastructure such as widening and lengthening of selected ramps.

### Western Sydney bus and road upgrades – North West integration package (New South Wales Government; \$800 million)

North-west Sydney is a significant growth area for Australia's largest city – there is a need to provide transport capacity to support population and employment growth in the region.

This proposal is related to the North West Rail Link proposal that was submitted to Infrastructure Australia in 2012. The project aims to improve the connectivity and accessibility of high-growth development areas in north-west Sydney.

The current network is facing capacity constraints and the substantial growth expected in transport demand will further constrain transport network performance.

The proposal to Infrastructure Australia is for a package of works across the road network, including:

- three road capacity upgrade projects; and
- five bus priority projects (bus-only lanes or bus-only links).

Further information is needed to support the specific projects proposed in this initiative; and the contribution of the package of works to an integrated transport strategy for the north-west Sydney region.

### Dandenong Rail Capacity Program (Victorian Government; \$700 million – \$1.2 billion)

The Dandenong Rail Capacity Program is part of a coherent plan for the upgrade of Melbourne's metropolitan rail network. Increasing capacity on the corridor is part of a seven-stage metropolitan rail upgrade program.

The objective of this project is to increase the capacity of the Dandenong rail corridor to meet increased demand driven by:

- increased capacity arising from the proposed Melbourne Metro rail line;
- population growth in the south-east of Melbourne;
- increased rail patronage; and
- road congestion caused by increased closure of level crossings.

Potential initiatives could include timetable changes, signalling upgrades, power upgrades, changes to level crossings and running longer trains and associated lengthening of stations.



### South Road Upgrade

(South Australian Government; \$1.67 billion)

An efficient freight network to and from Port Adelaide will have a positive impact on productivity in South Australia.

This project aims to improve freight transport productivity and accessibility to employment and economic activity centres, including the Port of Adelaide, together with providing efficient and effective connectivity for commuters.

The project seeks to address congestion and travel time delays, as well as restricted access between the east and west of Adelaide.

The proposal to Infrastructure Australia is for:

- a new 4.5 kilometre four lane grade separated road along the existing alignment – the existing at-grade arterial network will be retained; and
- greater public transport priority.

### Early stage

#### South Australia National Managed Motorways Project – South Eastern Freeway, Stirling to Crafers (South Australian Government; \$4.57m)

The national managed motorways program is expected to improve productivity through better use of existing infrastructure assets.

The South Eastern Freeway forms part of the National Transport Network between Adelaide and Melbourne, and is the primary access corridor to/from Adelaide for the south east of South Australia and much of the Adelaide Hills.

The proposal to Infrastructure Australia is to trial hard shoulder running on a three kilometre section between Stirling and Crafers.

#### Brisbane to Gold Coast Transport Strategy (Queensland Government; \$1bc)

The Brisbane to Gold Coast transit corridor is part of the National Land Transport Network and Infrastructure Australia's indicative national land freight network.

The Queensland Government has provided two submissions relating to the Pacific Motorway. The South East Queensland Group of Mayors has previously submitted a proposal for the Gold Coast Rail Line.

Submissions to improve travel times and reliability for freight and commuter traffic on this corridor are important. The initiatives above should be considered as part of an overarching transport plan for the Gold Coast to Brisbane corridor.

### Brisbane Inner Rail

(Queensland Government; \$302 million)

This package of works is aimed at increasing the capacity of Brisbane's rail network to accommodate growth occurring before the delivery of the Brisbane Cross River Rail project.

The proposal to Infrastructure Australia includes:

- capital works such as seat reconfiguration; and
- routine operational improvements such as revisions to timetabling.

#### Inner Sydney Regional Bike Network (New South Wales Government; \$185 million)

Measures to alleviate congestion on the existing transport networks in inner Sydney are expected to improve productivity in Australia's largest city.

The objective of this project is to provide a sustainable alternative transport option to the congested bus network in Sydney's inner city. The initiative aims to provide improvements to the safety and connectivity of the existing cycle network and will build on existing cycleways to deliver a 284 kilometre network – 214 kilometres will be separated from general traffic; and 70 kilometres will be shared paths.

### Sydney Light Rail

(New South Wales Government; \$1.6 billion)

Improving the operation of transport services through Sydney's central business district will have an impact on productivity in and around the city.

Key objectives include meeting demand, improving accessibility, reducing surface transport congestion, improving urban amenity and increasing public transport patronage and mode share.

The proposed solution includes:

- a 12 kilometre light rail line from the eastern suburbs to the central business district with 21 stops and a service every 2–3 minutes in peak time and 5–10 minutes at other times. The vehicles would have a capacity of 300 people each;
- changes to the bus network to reduce the number of buses entering the central business district; and
- converting 40 per cent of George Street to pedestrian-only use.

### Growth areas transport package

(Victorian Government; \$tbc)

The objective of the project is to support the delivery of the transport networks outlined in the Victorian Government's growth corridor plans. The aim of delivering these networks is to address road traffic congestion associated with the current and projected population growth in Melbourne.

The submission proposes infrastructure development for three corridors:

- Thompsons Road (south–east growth corridor) road duplication, grade separation, bus priority;
- Palmers Road (western growth corridor) road upgrades and duplication, pedestrian and cycle paths; and
- Melton Rail (western growth corridor) additional tracks, new stations and upgrades, stabling, new flyover.

### Airport Rail Line

(Western Australian Government; \$2.01 billion)

Efficient transport links to Perth Airport and public transport planning for future growth will help to support sustainable population growth in Perth. As such, consideration of preserving the corridor and station space to allow for a future rail link is likely to have merit.

This initiative aims to provide a fast and efficient connection between Perth's central business district and Perth Airport, as well as improving connectivity with Perth's eastern suburbs.

The proposed solution is a rail link from east Perth, under the airport (either by tunnel or cutting) linking to the existing Perth rail system. It includes:

- three stations (airport, airport west and High Wycombe);
- a rail link to the Perth–Midlands railway (east of Bayswater Station).

### Perth Rapid Transit

(Western Australian Government; \$1.88 billion)

Taking a long term view of public transport in Perth is a positive approach to addressing population and employment growth in one of Australia's major cities. Population growth in Perth has been faster than anticipated, which is expected to place additional demand on current transport networks, while creating opportunities to foster transit-oriented development.

The Western Australian Government is proposing to develop a 22km inner-city mass rapid light rail system. The proposed route will be from Mirrabooka in the north, through the Perth CBD and then west to the QEII Medical Centre and east to the Causeway in Victoria Park. The proposal aims to improve public transport travel times and help to reduce congestion into and around the city.

A rapid transit system will improve connectivity and act as a catalyst for urban consolidation and more sustainable forms of development.

### Capacity Improvements and Expansion of the Metropolitan Commuter Rail Network

(New South Wales Government; \$795 million)

The Capacity Improvements and Expansion of Metropolitan Sydney Commuter Rail Network project is a suite of initiatives arising from a 'Rail 2040 Plan' for heavy rail and metro systems in the Sydney metropolitan area. These initiatives include:

- trial of an Automatic Train Operation system for 6.6 kilometres of track between Cronulla and Sutherland on the Cronulla line in southern Sydney;
- corridor feasibility analysis on the Sydney central business district to Chatswood;
- capacity enhancement examining a range of investment strategy packages (including different combinations and timing for train system enhancements, station improvements and new rail tunnels – including a second harbour crossing;
- Stage 2 of the Richmond Line duplication including:
  - duplication of track from Schofields to Vineyard;
  - an upgraded Riverstone station including a major bus interchange and possibly car park; and
  - a grade separated crossing of the rail line at Garfield Road, Riverstone.

### Melton Rail Line Duplication and Electrification

(Victorian Government; \$tbc)

Addressing population and employment growth in our major cities with public transport solutions is a positive approach to increasing national productivity.

The Melton rail line duplication and electrification is aimed at improving the capacity, regularity and reliability of services in the western Melbourne's suburbs.

Population growth in the Melton area is driving increasing demand for trips to the inner city. The existing diesel rail service has low passenger-carrying capacity and operates on a single track from Deer Park West to Melton, constraining the ability to schedule additional services.

This project proposes to deliver:

- 15 kilometres of track duplication and electrification between Sunshine and Melton



### Tram Route 86 Stages B and C (Victorian Government, \$tbc)

The Tram Route 86 Demonstration Project forms part of the Victorian Government's 20 year *Integrated Transit Corridor Development Program* which seeks to encourage sustainable growth along inner Melbourne tram corridors.

Demonstration projects provide information that can be used to better understand opportunities for sustainable population growth and improve access to public transport

This project covers 6.8 kilometres of the route; section A has been completed.

The learnings from section A will inform sections B and C – the remaining stages of the program – which include:

- accessible tram stops to integrate with surrounding urban development;
- providing *Disability Discrimination Act* compliant level access;
- traffic management measures and the introduction of a 40 kilometre per hour speed limit along High Street and limited parking on street at Activity Centres along the route;
- tram priority measures including priority at signals, tram lanes, extended clearways, reduced number of stops, and banned turns; and
- streetscape improvements, including seating, lighting and landscaping.

### Priorities under the international gateways theme

#### Threshold

#### Gateway Motorway Upgrade North (Queensland Government; \$1.3 billion)

The Gateway Motorway lies on Infrastructure Australia's indicative national land freight network and the National Land Transport Network.

Brisbane's road network is showing increasing levels of congestion and there is significant road congestion to the Port of Brisbane via the Gateway Motorway. The Port of Brisbane is expected to experience continuing growth, placing pressure on the efficiency of freight and passenger movements.

The Gateway Upgrade North project aims to greatly improve road freight connectivity between key northern industrial and logistics centres and the port precinct.

The project involves capacity upgrades to the northern 10 kilometre section of the Gateway Motorway by:

- widening of the motorway from four to six lanes between Nudgee and Deagon;
- a cycle way alongside the motorway corridor;
- re configured Nudgee Interchange, including a new Nudgee Road bridge over the Motorway;
- interchange development at the Gateway Motorway/Deagon Deviation connection; and
- a range of new and upgraded ramps and bridges.

It is suggested that the following conditions be applied to project funding:

- The Queensland Government should provide demand models to determine whether the project would still be economically viable in the presence of efficient road pricing, and include user charging at a rate that reflects efficient pricing as part of any road based solution; and
- The Queensland Government consider a broader range of reform and investment options in future long term infrastructure strategies, including:
  - making better use of existing networks;
  - public transport alternatives; and
  - direct user tolls or charges to recover costs and influence demand.

### Northern Connector

(South Australian Government; \$1.1 billion)

The Port of Adelaide is expected to experience continuing growth in freight volumes, placing pressure on the efficiency of freight movements to and from the port by road and rail. The roads that the Northern Connector will join – Port Wakefield Road and the Northern Expressway – are part of the National Land Transport Network.

The South Australian Government is proposing a road and rail link between the port and intermodal terminals at Penfield in the north of Adelaide.

The current proposal is to deliver the Northern Connector in two stages, and to include the rail solution as corridor preservation only:

- a 15.6 kilometre six lane (three lanes in each direction) Northern Connector road joining the Northern Expressway to the Port River Expressway. It is proposed to construct the Northern Connector in two stages:
  - Stage 1 south of Bolivar Road to meet congestion modelled from 2016;
  - Stage 2 north of Bolivar Road to meet congestion modelled from 2021; and
- land acquisition to preserve the future option of re-routing the interstate rail line to the west of Port Wakefield Road.

It is suggested that any project funding be conditional on the provision of an updated, detailed cost benefit analysis. In addition, the South Australian Government should also be asked to provide demand models to determine whether the project would still be economically viable in the presence of efficient road pricing, and include user charging at a rate that reflects efficient pricing as part of any road based solution.

### Oakajee Port Common-User Services

(Western Australian Government; \$5.4 billion)

Oakajee Port is a proposed international freight port which lies on Infrastructure Australia's indicative national land freight network. The proposal is for an infrastructure package at Oakajee that comprises the development of port infrastructure, rail infrastructure, an industrial estate, and an industrial corridor for the mid-west region of Western Australia is nationally significant due to the scale of forecasted mineral exports and the potential of this infrastructure to support other industries.

The Western Australian Government is proposing a multi-user and multi-functional port at Oakajee, 22 kilometres north of Geraldton, to support iron ore exports with capacity to accommodate large-scale industrial development.

The capacity of Geraldton Port is expected to be insufficient to meet forecast demand for resources in the area, forcing mid-west region exports to be transported to other, more distant ports such as Port Hedland.

The Oakajee Port Common Use Infrastructure aims to support the anticipated expansion of iron ore exports from mines in the mid west region, as well as broader resource development and new industrial opportunities at the proposed Oakajee Industrial Estate.

### Darwin East Arm Port Expansion

(Northern Territory Government; \$336 million)

Darwin's port activity is projected to increase significantly over the next 10 years due to expected increases in iron ore, phosphate and minerals exports.

The Northern Territory Government proposed the expansion of the East Arm port in Darwin in order to accommodate the projected future increases and meet the future needs of the Northern Territory economy. The proposed port expansion consists of:

- reclamation of 22 hectares of land;
- extension of the East Arm Wharf quay line and construction of tug boat berths;
- new loading facilities including conveyors (on land, at the wharf and for a shiploader);
- stockpile storage facilities;
- rail dump station; and
- new rail infrastructure providing access to a proposed new stockpile area.

### Real potential

#### Newcastle Port – Kooragang Island Connectivity (New South Wales Government; \$85 million)

The corridor connecting Kooragang Island to the mining supply chain to and from the Port of Newcastle forms part of the national land freight network. Improving capacity on this corridor is expected to support the objectives of the Regional Infrastructure Fund.

The project aims to address congestion on the corridor connecting the City of Newcastle and Kooragang Island. Demand for the corridor is expected to increase materially over the next ten years, which will further exacerbate congestion.

The proposed solution is to double the available lanes from two to four over a 2.5 kilometre stretch of road, in line with lane capacity at either end of this section of the road. This includes duplicating the Tourle Street Bridge and its approaches.

#### Western Interstate Freight Terminal (Victorian Government; \$tbc)

This project is aimed at improving interstate freight efficiency and supports the development of a national freight network.

The project aims to support projected growth in interstate rail freight and improve the efficiency and productivity of interstate supply chains through the establishment of co-located distribution centres and warehousing.

The western interstate freight terminal, to be constructed in western Melbourne, would enable the removal of unnecessary freight movements in and out of the Dynon port precinct, and support the development of a national rail freight terminal network, particularly in conjunction with terminals in Sydney (at Moorebank) and Brisbane.

The Western Interstate Freight Terminal involves:

- a new terminal; and
- repositioning of the railway line.

This project is at development stage.

#### Bunbury Outer Ring Road stages 2 and 3 (Western Australian Government; \$675 million)

Improving travel times and reliability for freight and commuter traffic into Bunbury Port supports the development of an effective national freight network.

The objective of the project is to improve the efficiency of freight access to Bunbury Port; the expanding industrial centres in and around Bunbury; and between Perth and the south west of Perth.

At present, trucks are required to use indirect routes to Bunbury Port and the operation of higher productivity vehicles is limited. Due to lack of alternatives, freight vehicles use local roads that are unsuited to freight traffic and run through residential areas.

This proposal is for Stages 2 and 3 of the Bunbury Outer Ring Road (Stage 1 is due to open in 2013):

- Stage 2 – southern section of the road between South Western Highway and Bussell Highway – four lane dual carriageway with two at-grade intersections; and
- Stage 3 – northern section of the road between the Perth Bunbury Highway and Boyanup Picton Road – four lane dual carriageway with three grade-separated interchanges and an at-grade intersection.

Stage 2 is considered a higher priority than stage 3.



### Bell Bay Intermodal Expansion Project (Tasmanian Government; \$tbc)

Tasmania's port activity is expected to increase significantly over the next 20 years. To meet projected increases in trade, expansion and consolidation of container trade is proposed at Bell Bay Port, north of Launceston.

The Tasmanian Government has proposed the consolidation of future container freight growth at Bell Bay in order to free up space at Burnie Port for bulk exports, including mining product from the West Coast.

More evidence is required to demonstrate current capacity constraints.

### Melbourne International Freight Terminal (Victorian Government; \$tbc)

This project is expected to promote increased productivity and international competitiveness for Australia.

In order to effectively manage the predicted growth of international container freight through the Port of Melbourne, the Victorian Government has been investigating a range of initiatives for improving port land side access and efficiency.

The Melbourne International Freight Terminal has been proposed to improve handling of international shipping containers to ensure that land side supply chain efficiency is maintained and enhanced. The initiative will also contribute to the development of a national rail network as it will enhance efficiency of the rail supply chain for urban movements.

This initiative involves the planning and development of a new freight terminal on the site to be vacated by the Melbourne Wholesale Market, adjacent to Swanson Dock at the Port of Melbourne.

### Abbot Point Multi Purpose Harbour (Queensland Government; \$3.3 billion)

The Queensland Government has identified Abbot Point as the next major industrial hub and export facility in Queensland, with capacity to accommodate large scale new industry and cargo shipping in north Queensland and northern Australia. The development will provide for significant capacity increases in coal export, alumina production and export, minerals processing, bulk minerals export and related industrial activity and goods importation.

The development of this hub centres on a staged port expansion through the creation of a multi-cargo facility – a sheltered harbour capable of accommodating multiple trade products and able to be built in stages.

The scope of Stage 1 includes:

- a single berth multi-cargo wharf facility capable of supporting 'cape-sized' ships and handling a range of import and export cargo (30 million tonne per annum coal capacity); and
- tug and cargo handling facilities.

Future stages could include a complete 12 berth development for import/export products and potential coal export.

Stage 1 is a single multi-cargo facility berth estimated to cost \$1.06 billion, with the complete development estimated to cost \$3.3 billion (\$2010 real).

### Smart Port Information and Communications Technology (Victorian Government; \$tbc)

Currently, the international maritime sector must interact with multiple parties for each import/export transaction. The result is inefficient processes, duplication of resources and information, and delays at points in the supply chain.

The Smart Port information and communications technology project aims to coordinate a national approach to information and communications systems, adopting international standards.

### Early stage

#### Port Botany and Sydney Airport Transport Improvement Plan (New South Wales Government; \$478 million)

The proposal seeks to address high priority landside access constraints that exist in servicing the current and future transport needs of the international gateways, Port Botany and Sydney Airport.

The submission includes the following projects:

- a light vehicle road underpass of the rail line at General Holmes Drive;
- a truck lay-over in the Foreshore Road area;
- a one-way pairs road operation on Bourke Road and O'Riordan Street;
- widening of Mill Pond Road; and
- planning for the duplication of the Port Botany Freight Line.

### Port of Hastings including Peninsula Link rail freight corridor (Victorian Government; \$tbc)

As the Port of Melbourne throughput grows, the port will gradually become more constrained, affecting the efficiency of some port operations. The Victorian Government has identified the Port of Hastings as the preferred site for future handling of international containers.

The Port of Hastings is located approximately 30 kilometres south east of Dandenong. It currently comprises piers and wharves, including the BlueScope Steel Wharf, the Long Island Point Jetty, the Crib Point Jetty and the Stony Point Jetty.

The proposal to Infrastructure Australia is for project planning and business case investigations for Stage 1. The investigations are estimated to cost \$120 million. Planning work to date has focussed on corridor options that connect Hastings to the state and interstate rail freight networks.

### Port Hedland – Great Northern Highway Overpass (Western Australian Government; \$170 million)

The objective of the project is to improve the efficiency of transport links from mines in the Pilbara region to Port Hedland.

There is increasing interaction between road and rail traffic from mining operations in the central Pilbara to the Boodarie industrial area and Port Hedland, with more frequent and longer iron ore trains causing time delays and network inefficiencies.

The project proposes a single consolidated bridge, 1.1 kilometres long and 18 metres high across the infrastructure corridor and rail spur.

### Port Hedland Inner Harbour Capacity Enhancements (Western Australian Government, North West Iron Ore Alliance, Hancock; \$500 million – \$1.0 billion)

In 2009-10 Infrastructure Australia received a number of submissions relating to the Port Hedland Inner Harbour Capacity Enhancements. The proposal by the Western Australian Government, aims to facilitate and expand trade through the port to satisfy demands for bulk export capacity and support the expansion of mining in the Pilbara region.

The project proposes:

- deepening of the main 40 kilometre channel; and
- the construction of inner harbour berths.

### Transforming the Pilbara – Pilbara Cities (Western Australian Government; \$2.9 billion)

The Pilbara region of Western Australia is a principal driver of Western Australia's economic growth.

As a consequence of this strong economic activity, the Pilbara generates direct employment in the region along with significant indirect employment in Perth and other parts of Australia – given that the bulk of the workforce operate on a “fly-in/fly-out” basis. The mining activity and employment demand is placing strain on the existing economic and social infrastructure.

In order to help ensure that the Pilbara can support and deliver a local skilled workforce to support future growth, the Western Australian Government has proposed a program of projects for Karratha and Port Hedland and surrounding areas, including:

- airport upgrades;
- upgrading of the water and wastewater infrastructure;
- improvement of communications infrastructure;
- creation of serviced land (connection to wastewater, water, energy);
- purpose-built accommodation units; and
- marina developments.



### Eyre Peninsula Port Proposals (South Australian Government; \$tbc)

This proposal is for the development of a bulk commodities export facility on the Eyre Peninsula primarily to cater for the export of iron ores from South Australia, using 'cape-sized' vessels. Other critical elements to be investigated as part of the Eyre Peninsula Port proposals include rail, regional power and water infrastructure.

The proposals submitted to Infrastructure Australia include two potential developments:

- Port Bonython (near Whyalla): identified by the South Australian Government as a suitable site for a deep water export facility; and
- Sheep Hill Port: separate to the Port Bonython proposal, Centrex Metals has secured a 90 hectare site at Sheep Hill, located 60 kilometres north of Port Lincoln along the eastern edge of Eyre Peninsula. The proposal is for a deep water export facility to cater for 'cape-class' vessels.

### Priorities under the national freight network theme

#### *Ready to proceed*

#### Pacific Highway Corridor Upgrades (New South Wales Government; \$6.4 billion)

The F3 Freeway forms part of the National Land Transport Network and Infrastructure Australia's indicative national land freight network and is a primary national route for freight and passenger vehicles.

The Pacific Highway upgrade aims to reduce congestion, reduce travel times and improve safety by reducing road crashes and injuries as well as meeting the increasing demand for commercial and social activity.

The project is to complete some 300 kilometres of double lane divided road in three key areas being:

- from the F3 Freeway near Hexham to Port Macquarie;
- from Ballina to the Queensland border; and
- sections to the north and south of Coffs Harbour.

The proponent has estimated the capital cost of the remaining works at \$6.4 billion (\$2010) or \$7.7 billion (in out-turn costs and assuming completion in 2016). These figures exclude existing committed funding for the project.

#### *Threshold*

#### F3 Widening – Tuggerah to Doyalson (New South Wales Government; \$200 million)

The F3 Freeway forms part of the National Land Transport Network and Infrastructure Australia's indicative national land freight network.

This project aims to improve the productivity of the F3 freeway by improving pavement condition and increasing the capacity of the road. Population growth on the central coast is driving increasing levels of commuter and freight traffic on the freeway. Pavement condition is poor, driving high maintenance costs and vehicle operating costs.

The proposed solution is to upgrade a 10.5 kilometre section from Tuggerah to Doyalson. The upgrade consists of widening from four to six lanes; and pavement strengthening.

It is suggested that the following conditions be attached to any funding agreement with the New South Wales Government:

- The development of a transport plan for the region that: addresses the challenges identified in the New South Wales Long Term Transport Master Plan; enables adequate consideration of the long and short term transport needs of the region; and adopts a strategic network wide approach to addressing the problems identified;
- Additional information be provided to demonstrate a robust cost benefit analysis; and
- As part of the regional transport plan, demand modeling that analyses whether the project would still be economically viable in the presence of efficient road pricing and public transport pricing.

### M80 Ring Road Upgrade (Victorian Government; \$1.05 billion)

The M80 Ring Road services the Port of Melbourne with distribution centres; there is a need for adequate freight links with the port.

The principal objective of this project is to improve accessibility and movements on the freight route linking the major industrial and multi-modal activity areas in the north and west of metropolitan Melbourne.

Travel time delays and rising costs driven by congestion and stop-start traffic conditions are reducing efficiency and productivity on the roads. These problems will get worse in the future due to population growth, port expansion, growth in the freight task, and increasing use of light commercial vehicles.

The proposal is to widen the remaining sections of the M80 Ring Road to provide at least three lanes in each direction:

- Princes Freeway to Western Highway (5.0 kilometres);
- Sunshine Avenue to Calder Freeway (3.8 kilometres);
- Sydney Road to Edgars Road (4.0 kilometres); and
- Plenty Road to Greensborough Highway (2.6 kilometres).

It is suggested that any project funding be conditional on the Victorian Government providing demand models to determine whether the project would still be economically viable in the presence of efficient road pricing, and include user charging at a rate that reflects efficient pricing as part of any road based solution.

### North West Coastal Highway – Minilya to Barradale (Western Australian Government; \$217 million)

The Northern Coastal Highway supports the development of oil and gas fields in Australia's north-west. Improving efficiency on this corridor is expected to support the objectives of the Regional Infrastructure Fund.

The project aims to improve the efficiency and safety of freight and other vehicles on the highway by widening the sealed section and creating improved flood immunity to support the operation of wide and heavy vehicles.

Significant development in the Pilbara region has generated increased traffic on the coastal route. Much of the highway has already been widened to accommodate safer passing of vehicles, however there are still sections outstanding.

The proposed solution is the staged widening and strengthening of the last remaining section of narrow highway along the North West Coastal Highway from Minilya to Barradale (currently 6.2 metres wide compared to 9 metres wide for similar freight routes).

It is suggested that any project funding be conditional on the Western Australian Government:

- developing a detailed business case including a robust economic analysis; and
- identifying potential measures to leverage financial contributions from freight operators that will benefit from the proposed upgrades.

### Leach Highway/High Street upgrade (Western Australian Government; \$100 million)

Fremantle Port and its landside connections form part of Infrastructure Australia's indicative national land freight network.

The objectives of the project are to reduce delays for freight vehicles, improve road capacity and improve network amenity along a section of urban arterial road which forms part of the only designated road freight access route to Fremantle Port. This section of road currently experiences capacity constraints and suffers from poorly aligned intersections.

The proposed solution is to:

- build approximately 1.5 kilometres of dual carriageway – a four lane divided road with capacity for expansion to six lanes (High Street will be retained as a local access road); and
- undertake a major intersection re configuration along Leach Highway (High Street) in East Fremantle between Carrington Street and the Stirling Highway.

As part of any funding agreement, it is suggested that the Western Australian Government be asked to develop a detailed business case including a robust economic analysis.

### Great Northern Highway – Muchea to Wubin (Western Australian Government; \$361 million)

The Great Northern Highway forms part of the National Land Transport Network and Infrastructure Australia's indicative national land freight network. Improving capacity on this corridor is expected to support the objectives of the Regional Infrastructure Fund.

The objective of the project is to improve the efficiency, reliability and safety of the route between Perth and the north west of Western Australia.

The road experiences high daily volumes of heavy vehicle traffic on the highway. The development and expansion of the energy and resource projects in the north of the state will result in an additional 100 high-wide load movements per day. There are limited opportunities for overtaking and the road is not suitable for use by triple road trains which must currently de couple at Wubin.

The proposed solution is a program of works along an 87 kilometre section of the highway between Muchea and Wubin. The program consists of reconstruction and realignment of selected sections of the Great Northern Highway, upgrading intersections, widening the seal, and constructing additional passing lanes.

It is suggested that the Western Australian Government develop a detailed business case including a robust economic analysis as part of any funding agreement.

### *Real potential*

#### Toowoomba Second Range Crossing (Queensland Government; \$1.66 billion)

The Toowoomba Second Range Crossing Project aims to improve the efficient movement of freight in the Brisbane-Darwin and Brisbane-Melbourne corridors (to the Port of Brisbane); to and from the Surat Basin; and into the city of Toowoomba.

The road, used by heavy and over-dimensional vehicles, is winding with steep gradients that generate significant costs to the freight industry due to high fuel consumption and delays caused by congestion and crashes. Demand is expected to increase as the Surat Basin continues to develop.

The proposed solution comprises:

- construction of a dual carriage way from Helidon at the base of the range to the north of Toowoomba, including twin two-lane tunnels for the range crossing; and
- realignment of the Warrego Highway that will divert traffic currently running through the city centre

### Warrego Highway Upgrade Program – Helidon to Morven (Queensland Government; \$635 million)

The Warrego Highway Upgrade Program aims to deliver improved road safety, capacity increases and infrastructure renewal works on the Warrego Highway between Helidon and Morven, in southern Queensland.

Ageing and deteriorating infrastructure and inadequate standards to cater for current heavy vehicle traffic are leading to traffic delays, poor safety conditions, inefficiency and reduced productivity. Growing demand for Surat Basin's resources is expected to exacerbate these problems.

The proposed solution is a five-year program of works made up of 13 individual projects, including:

- Up to 25 kilometres of pavement widening and pavement strengthening;
- Up to 16.5 kilometres of duplication from two to four lanes;
- Up to 14 additional overtaking lanes between Oakey and Miles;
- Replacement of a load-limited structure at Jingi Jingi Creek; and
- Intersection safety upgrades at high-crash locations and the Chinchilla open-level rail crossings.



### Landsborough to Beerburrum rail duplication (Queensland Government; \$770 million)

The Landsborough to Beerburrum section of rail forms part of Infrastructure Australia's indicative national land freight network.

The objectives of the project are to facilitate the efficient movement of people and freight on this section of the North Coast line; provide quality public transport and increase the share of trips made by public transport; and reduce travel time.

There is inadequate capacity on the rail line to allow for projected growth in freight and passenger demand for rail services. Freight is expected to be increasingly crowded out by passenger services over time.

The proposed solution involves:

- the duplication of 17 kilometres of the existing single rail line between Beerburrum and Landsborough;
- land acquisition for two future tracks;
- construction of six rail bridges and three road over rail bridges;
- two new stations;
- 10 kilometres of road upgrades; and
- the removal of existing open level crossings.

### Automatic Train Protection and Automatic Train Operation (New South Wales Government; \$1.2 billion)

The objectives of the project are to improve rail safety, increase the capacity of the rail network to cater for current and future needs, and increase the frequency of reliability of rail services across Sydney's CityRail network. This is particularly important given reliance on manual driver interventions in responding to signalling and control systems.

The proposed solution includes:

- implementation of Automatic Train Protection European Train Control Systems Level 1 across the entire CityRail network and fleet; and
- trialling of a more advanced train protection technology, namely the Automatic Train Protection European Train Control Systems Level 2, overlaid with Automatic Train Operation.

### East West Link (Victorian Government; \$6 – 8 billion)

It is important to identify and address pressure points to the efficiency of our national freight network, in particular in respect of our major ports.

The objective of the project is to increase east-west connectivity and alleviate congestion within Melbourne. In turn, this will improve the efficiency and capacity of the freight network – in particular freight to the Port of Melbourne – and commuter vehicles.

The problem is identified as the lack of east-west connectivity in Melbourne's transport system with all east west traffic movements reliant on a single route – the M1/West Gate corridor. This contributes to congestion and inefficiencies for freight and logistics chains as well as commuter vehicles. The problem is anticipated to worsen in the future with population and freight growth.

The proposed solution is an 18 kilometre cross city road connection (including tunnels) north of the Melbourne central business district, consisting of two components:

- Eastern component: from the Eastern Freeway to CityLink, including a connection from CityLink to the eastern side of the Port of Melbourne; and
- Western component: from the Port of Melbourne to Western Ring Road (Note: this component was previously included on the infrastructure priority list as WestLink).

### High Productivity Freight Vehicles Upgrade Package (Victorian Government; \$60 – 110 million)

Access for high productivity freight vehicles plays an essential role in improving freight efficiency nationally.

The primary objective of the proposal is to increase the efficiency of the freight network through the use of high productivity freight vehicles on two of Melbourne's key freight corridors – the M1 Monash Freeway (from the Port of Melbourne to the proposed Lyndhurst intermodal terminal in southeast Melbourne); and the M31 Hume Freeway (from the Port of Melbourne to the New South Wales border at Albury–Wodonga).

Growth in the Port of Melbourne's freight task and an increase in the number of private vehicles on the network around Melbourne are leading to congestion and inefficient freight movements. The problem is compounded by infrastructure constraints that restrict truck length, mass and number of containers. The infrastructure constraints include limited bridge load capacity, intersection inadequacy and lack of overtaking lanes to cater for heavier/longer vehicles.

The proposed solution is a package of upgrade works along two corridors to and from the Port of Melbourne. The upgrades will enable use by high productivity freight vehicles capable of carrying up to two 40-foot containers per vehicle. The upgrade works identified include bridge strengthening, intersection upgrades, provision of overtaking lanes and shoulder sealing to accommodate the longer and/or heavier vehicles.

### High Capacity Test Line Signalling – pilot project (Victorian Government; \$2.5 – 3.5 billion)

This project is a good example of creating capacity on the metropolitan rail network by making better use of existing assets.

High capacity signalling uses new technology to enable trains to travel safely closer together, and therefore increase rail capacity. The project aims to use this technology to optimise and increase the capacity of the metropolitan rail network; and to encourage mode shift from road to rail.

The proposed solution is to develop and implement high capacity signalling technology on the Sandringham line in Melbourne as a pilot case and to subsequently roll the technology out across the metropolitan network.

### Perth Darwin National Highway – Swan Valley Bypass (Western Australian Government; \$700 – 800 million)

The Great Northern Highway forms part of the National Land Transport Network and Infrastructure Australia's indicative national land freight network.

The objective of the project is to increase capacity – including capacity for high-productivity vehicles – and improve amenity on the main highway between Perth and the north-west of Western Australia by delivering a new road bypassing the Swan Valley and outer eastern suburbs of Perth.

Significant economic growth in the north-west region has placed pressure on transport networks, including the section of the Great Northern Highway which passes through residential growth areas in the outskirts of Perth.

The proposed solution is to provide an alternative to the Great Northern Highway. The proposal includes:

- construction of 40 kilometres of new road between Tonkin Highway and Muchea consisting of 15 kilometres of dual carriageway and 25 kilometres of single carriageway;
- upgrades to connecting roads; and
- new interchanges with the existing road network.

### Grade Separation (Western Australian Government; \$650 million)

The key objective of the project is to improve the reliability and efficiency of Perth's metropolitan freight networks and logistics chains by reducing delays to freight (both road and rail) from intersections, including delays resulting from intersection accidents.

The proposed solution is a series of grade separations along major freight routes in Perth:

- eight grade separations at road–road intersections;
- two grade separations at road–rail intersections; and
- two grade separations that combine road-road intersections and road-rail intersections.

### North-South Rail Freight Corridors including Northern Sydney Freight (Australian Rail Track Corporation/New South Wales Government; \$tbc)

The north-south freight corridor runs between Brisbane and Melbourne. It comprises the densest general freight route in Australia with a number of segments critically important to national prosperity. The corridors cover the existing lines including the southern Sydney freight line.

The Australian Government has announced a package of capacity and efficiency enhancement for the Australian Rail Track Corporation's New South Wales north coast line. The corridor also includes the proposed inland rail route between Melbourne and Brisbane, which would bypass the Sydney area.

### Advanced Train Management System (Australian Rail Track Corporation; \$500 million)

The Advanced Train Management System is a communications based safe working system designed to replace traditional line side signalling infrastructure. ATMS is a satellite based train control system currently under trial by the Australian Rail Track Corporation and would enable a virtual, communications based 'safe working' system with lower costs and possibly greater infrastructure capacity.

### East West Rail Freight Corridor (Australian Rail Track Corporation; \$tbc)

The East West Rail Freight Corridor links the principal cities and industrial centres in eastern Australia such as Melbourne and Sydney with those on the west including Perth. Projected growth in rail freight makes increases in the efficiency and capacity of the corridor a national priority. The Australian Rail Track Corporation manages most of the corridor and has identified a package of works needed to boost performance of the rail sector.

Some works in Victoria, South Australia and Western Australia were funded in the December 2008 Nation Building package. The Goodwood and Torrens Junction projects in Adelaide, announced in the 2012-13 budgets of the Australian and South Australian Governments, were also part of the program. Other initiatives include an advanced train management system and additional rail infrastructure works.



### Green Triangle Freight Transport Program (South Australian and Victorian Governments; \$tbc)

The Green Triangle is a major timber plantation province in south west Victoria and south east South Australia with capacity to generate large volumes of export timber plantation products through the Port of Portland.

The South Australian and Victorian Governments have identified a package of reform, road and rail investment initiatives to meet the forecast freight transport demands and infrastructure needs of the Green Triangle Region.

A number of the initiatives are underway; this submission includes a program of road projects, including the Penola Bypass Stage 2 as well as overtaking lanes, widening, intersection upgrades, shoulder sealing and upgrades to local roads.

### Early stage

#### Mount Isa to Townsville Rail Corridor Upgrade (Queensland Government; \$575 million)

Accommodating increasing freight demand on the Mount Isa to Townsville corridor will improve productivity in the region.

The objective of the project is to improve the efficiency of rail access from the Surat Basin to the Port of Townsville to enable greater volumes of minerals and agricultural exports. The proposed enhancements to the western sections of the Mount Isa to Townsville Rail Corridor are expected to maximise the full benefits of the Townsville eastern access rail corridor.

The project scope includes upgrades to rail and related road infrastructure:

- enhancements to western sections of the Mount Isa to Townsville Rail Corridor;
- construction of a new 6.5 kilometre Townsville Eastern Access Rail Corridor to provide direct access to export facilities at the Port of Townsville for longer trains.

### Bruce Highway road safety (Queensland Government; \$500 million)

The Bruce Highway is part of the National Land Transport Network and is Queensland's major east coast transport and economic corridor. The highway plays a significant role in freight and passenger transport and its safe and efficient operation is important nationally.

The objective of the project is to reduce the overall number and severity of vehicle crashes on Queensland's National Road Network which result in death or serious injury. The focus of this initiative is to improve the safety of roads and roadsides by addressing the road and environmental conditions that contribute to the risk and severity of accidents.

The proposed solution is a suite of safety upgrade improvement works such as audio tactile line-marking, painted medians, removal of roadside hazards and wire rope barrier. The works will target high risk crash sites that account for approximately 70 per cent of all crashes resulting in death or injury.

### WestConnex (New South Wales Government; \$10 – 13 billion)

Congestion in the transport corridors identified in this submission is considered to be a nationally significant problem.

The primary objectives of this project are to improve accessibility, speed, congestion, reliability and connectivity of the roads linking Sydney's international gateways and Western Sydney and places of business across the city. This is to address existing demand as well as expected increase in demand for transport services provided by roads.

The main features of the proposal are:

- widening the M4 from Concord to Parramatta from two to three lanes in each direction to four lanes (9.2 kilometres)
- extending the M4 from Strathfield to Taverners Hill (6.2 kilometres)
- a tunnel from Taverners Hill to St Peters (5.3 kilometres)
- a Sydney Airport Access link from St Peters to the Airport (4.6 kilometres), and
- the duplication of the M5 East through construction of 2 new 2 lane tunnels (7.2 kilometres)

### Scone – rail level crossing (New South Wales Government; \$65 – 95 million)

This project aligns with the objectives of the Regional Infrastructure Fund and is considered to be nationally significant in that it aims to improve the efficiency of the National Land Transport Network. The project is located on Infrastructure Australia's indicative national land freight network.

The objective of the project is to improve travel reliability and travel times for freight vehicles on the Sydney–Brisbane national land transport network between Newcastle Port, the Upper Hunter Region and Queensland (Toowoomba/Darling Downs). At present, the closure of the rail level crossing for passing trains at Scone is causing delays to road traffic travelling on the New England Highway.

The solution proposed is to remove the level crossing. Four options for alternative crossing of the railway have been shortlisted – three road options and one rail option. Traffic modelling, cost estimates and economic analysis is being undertaken for the shortlisted options.

### Singleton – Gowrie Gates underpass (New South Wales Government; \$25 million)

This project is located on Infrastructure Australia's indicative national land freight network. Reducing restrictions on the use of high productivity vehicles on this network is important to improve national productivity. The project should be considered under the Regional Infrastructure Fund given it is on the mining supply chain to Newcastle Port.

The objectives of the project are to increase road freight productivity of over dimension vehicles, improve the reliability of the main north rail line and improve road safety around the Gowrie Gates underpass near Singleton.

Width and height limitations of the Gowrie Gates underpass prevent over-dimension vehicles from using the underpass at the intersection of the New England highway and the Main North Rail Line. Over-dimension vehicles must take a 34 kilometre detour on local roads. This reduces transport productivity and intensifies wear and tear on local roads.

The proposed solution involves:

- construction of a single span bridge to carry the main north rail line over the New England Highway allowing for dual carriageway configuration and standard clearance; and
- re-grading and re-aligning the New England Highway.

### Outer Metropolitan Ring Road (Victorian Government; \$tbc)

Corridor protection – particularly in Australia’s major cities – is nationally important for future infrastructure development.

The objective of this initiative is to protect Melbourne’s Outer Metropolitan Ring (OMR)/E6 orbital transport corridor to reserve lower cost long term national and state transport capacity. Rising land costs and inappropriate development are expected to compromise the ability of present and future governments to develop new infrastructure links to meet the demands of the growing population.

The identified solution is to continue purchasing land parcels on a hardship basis and where possible, acquire other properties now, to reduce the real cost of future infrastructure.

### Murray Basin Transcontinental Rail Link (Victorian Government; \$tbc)

The objective of the project is to assess options for addressing the constraints of the Murray Basin Region’s transport infrastructure.

The problem identified is that the existing transport infrastructure is preventing the region from fully capitalising on its significant economic resources. Poor road and rail infrastructure means that there are inadequate connections to deep water ports.

The project focuses on the section between Mildura and Menindee, as the Melbourne to Mildura rail line does not connect with the East West transcontinental line – a ‘missing link’ on the freight route.

The project involves assessing the broader transport needs of the region, including rail corridor, port infrastructure, intermodal terminal and road and bridge infrastructure requirements.

### Burnie to Hobart Freight Corridor (Tasmanian Government; \$tbc)

Developing a strategy for the Tasmania’s principal freight network – is a positive step toward improving the efficiency of the freight network.

The Tasmanian Government submitted a proposal for a package of works to meet capacity demands and improve service levels for the key highways on the main road transport corridor between Burnie and Hobart.

A separate proposal was submitted for the Tasmanian Rail Revitalisation Program aimed at raising the productivity of existing railway assets.

The problems described include road safety concerns and travel inefficiencies for freight, tourism and commuters; together with the poor condition of rail infrastructure.

A strategy should be developed that considers the roles of rail and road in respect of freight using an integrated approach to identify the best solutions for the corridor.



### Northern Sydney Road Freight Access – F3-M2 (New South Wales Government; \$4.8 billion)

The F3-M2 motorway connection is a proposed eight kilometre tunnel from the southern end of the F3 (Sydney-Newcastle Freeway) at Wahroonga to the M2 Motorway at Carlingford.

The project consists of:

- tunnel from the southern end of the F3 (Sydney-Newcastle Freeway) at Wahroonga to the M2 Motorway at its existing Pennant Hills Road interchange;
- improvements on the F3 at Wahroonga, including widening within the road reserve up to approximately Edgeworth David Avenue; and
- improvements on Pennant Hills Road south of the M2 Motorway up to and including the North Rocks Road intersection.

The proponent's cost estimate for the project is \$4.75 billion (\$2008) for the six lane tunnel option.

### Australian Digital Train Control System (Australasian Railways Association; \$20 million)

This project seeks to introduce digital train control – which uses radio, process data, voice and internet to underpin rail traffic management systems – to modernise and standardise signalling systems and ensure interoperable communications, train connection and control. This technology is being adopted in the European Union as the standard. The project has the potential to build on the Australian Train Management System and European Train Control System.

### Priorities under the adaptable and secure water supplies theme

#### *Real potential*

#### Water and Sewerage Reform (Tasmanian Government; \$1.0 billion)

The consolidation of 29 locally operated water services agencies into one water corporation and the move towards cost recovery pricing will deliver efficiency gains to the Tasmanian water and sewerage industry.

The objective of the project is to bring regional water and sewerage infrastructure in Tasmania up to a standard aligned with the Australian Drinking Water Guidelines and environmental standards. This includes infrastructure to provide regional areas with reliable access to potable water supplies and reticulated sewerage services.

The problem identified is regional water and sewerage infrastructure in Tasmania is at times non-compliant with Australian Drinking Water Guidelines, and some towns face environmental risks associated with not having reticulated sewerage services

The proposed solution is structural and regulatory reform coupled with a range of infrastructure works. These reform measures have largely been undertaken; the current submission relates to funding for construction of:

- water treatment infrastructure in 20 towns;
- reticulated sewerage infrastructure for one town.

### Tasmanian Irrigation Schemes Tranche 2 (Tasmanian Government; \$184 million)

This project supports a shift towards high-value agriculture production to build a more profitable Tasmanian economy.

The proposal aims to substantially increase the production of high-value agriculture and aquaculture food products by investing in rural water infrastructure.

The stated problem is low levels of rainfall on high-value agriculture lands coupled with inadequate water infrastructure that results in wastage of rainfall run-off and an unreliable, seasonal supply of water.

This submission relates to the second tranche of the water infrastructure program, which includes six irrigation projects to develop infrastructure to capture, store and transport water:

- Circular Head – works include the construction of an off-river storage and pump;
- Southern Highlands – works include the construction of a dam and pipeline;
- Great Forester-Brid – works include the construction of a dam and pipeline;
- Dial Blythe – works include the construction of a dam and pipeline; and
- Evandale and Swan River – works required are not specified.

## Priorities under the national energy grid theme

### *Real potential*

#### Mid-West Energy – Stage 2 (Western Australian Government; \$280 million)

This project seeks to connect the Geraldton area (including mines in the region) to Western Australia's South West Interconnected System. The project would provide a new 330 kilovolt line from the Perth metropolitan area to the region, and potentially replace much of the existing diesel engine powered generation.

The Mid West Energy Project Northern Section Stage 2 proposes an extension of Stage 1's 330 kilovolt transmission line. Stage 1 is to be implemented by Western Power and will run 189 kilometres from Pinjar (on Perth's northern outskirts) to Eneabba. Stage 2 is proposed to run approximately 160 kilometres from Eneabba to Moonyoonooka, just east of Geraldton. This was the basis of previous proposals to Infrastructure Australia. Western Power is reviewing options for the northern connection.

## Priorities under the essential Indigenous infrastructure theme

### *Threshold*

#### Tanami Road Upgrades (Northern Territory Government; \$196 million)

This submission aligns with the objectives of the Regional Infrastructure Fund and supports the Australian Government's objectives for 'Closing the Gap' for Indigenous communities.

The objective of the project is to upgrade the Tanami Road between the Stuart Highway turn-off and Yuendumu to improve access to support mining operations in the Tanami region, create opportunities for the Indigenous population and reduce costs to government of delivering and maintaining infrastructure and services in the communities.

Over two-thirds of the Tanami Road is unsealed with substantial sections being unformed. This surface has led to the development of significant ruts and corrugations from heavy vehicles. Through continual grading the road has dropped well below the surrounding land surface leading to increased flood damage and associated closures and safety risks. During the wet season the road is often impassable, resulting in delays to food and medical deliveries and services more generally.

### *Real potential*

#### Anangu Pitjantjatjara Yankunytjatjara (APY) Lands – road upgrades (South Australian Government; \$106 million)

The submission aligns with the objectives of the Regional Infrastructure Fund and supports the Australian Government's objectives for 'Closing the Gap' for Indigenous communities.

The objective of the project is to improve road access to the Anangu Pitjantjatjara Yankunytjatjara Lands to support the mining industry, in particular exploration; and reduce costs of delivering and maintaining infrastructure and services in the communities. These reduced costs are expected to open up the region to additional economic activities.

The existing road is unsealed and of a poor standard, which leads to additional maintenance costs; increased accidents and injuries; and flooding, hindering access for emergency and general services.

The preferred option is to:

- re-sheet 210 kilometres of the main road from the Stuart Highway to Pukatja; and
- improve 21 kilometres of access roads, including roads to airstrips in multiple communities.

# APPENDIX B

## REGIONAL INFRASTRUCTURE FUND

The Australian Government established the Regional Infrastructure Fund in 2011 to invest some of the proceeds of the resources boom to address urgent infrastructure needs, while supporting the mining industry, boosting export capacity and developing regional economies.

There are three program streams under the Regional Infrastructure Fund.

Stream 1 funding is for eight projects committed to in 2010:

- Gladstone Port Access Road (QLD, up to \$50 million);
- Blacksoil Interchange (QLD, up to \$54 million);
- Townsville Ring Road (QLD, up to \$160 million);
- Peak Downs Highway (QLD, up to \$120 million);
- Upgrade of the Bruce and Capricorn highways Intersection (up to \$68 million, with \$40 million from the Regional Infrastructure Fund);
- Mackay Ring Road Study (QLD, \$10 million);
- Gateway WA (WA, up to \$480 million); and
- Scone Level Crossing (NSW \$1.4 million).

Stream 2 comprises two elements – economic infrastructure projects and regional infrastructure planning projects. The objectives of Stream 2 of the Regional Infrastructure Fund are to:

- promote development and job creation in mining communities, and in communities which support the mining sector;
- provide a clear benefit to Australia's economic development, and to investment in Australia's resource or export capacity; and
- address potential capacity constraints arising from export production and resource projects.

### Regional infrastructure plans

The Australian Government set aside \$4 million in 2011-12 and \$6 million in 2012-13 to fund regional infrastructure planning projects under Stream 2 of the Regional Infrastructure Fund.

Based on the assessment of proposals for regional infrastructure plans, four plans have been awarded funding to date:

- Queensland – North Queensland Resources Supply Chain (\$1.66 million);
- Queensland – Central Queensland Resources Supply Chain (\$1.50 million);
- New South Wales – The Hunter Economic Infrastructure Plan (\$450,000); and
- South Australia – Regional Mining and Infrastructure Plans (\$1.50 million).

### Economic infrastructure projects

The regional infrastructure fund guidelines require that Infrastructure Australia identify potential economic infrastructure projects for Stream 2 and request jurisdictions to provide submissions. Thirteen proposals have been identified as being eligible for the Regional Infrastructure Fund.

### Infrastructure projects eligible for Regional Infrastructure Funds

State	Project	Priority list status
Western Australia	North West Coastal Highway – Minilya to Barradale	Threshold
Western Australia	Great Northern Highway – Muchea to Wubin	Threshold
Western Australia	Bunbury Outer Ring Road Stage 2	Real Potential
Western Australia	Port Hedland – Great Northern Highway Overpass	Early stage
Northern Territory	Tanami Road Upgrades	Threshold
Queensland	Toowoomba Second Range Crossing	Real potential
Queensland	Warrego Highway Upgrade Program – Helidon to Morven	Real potential
Queensland	Mount Isa to Townsville Rail Corridor	Real potential
South Australia	Anangu Pitjantjatjara Yankunytjatjara (APY) Lands – road upgrades	Real Potential
New South Wales	Newcastle Port – Kooragang Island Connectivity	Real potential
New South Wales	Scone Rail Level Crossing	Early Stage
New South Wales	Singleton 'Gowrie Gates' Rail Underpass	Early Stage
Victoria	Murray Basin Transcontinental Rail Link	Early Stage





Coal trains heading to Port of Newcastle,  
New South Wales.

# APPENDIX C

## TAX INCENTIVE FOR NATIONALLY SIGNIFICANT INFRASTRUCTURE

In 2013, the Government introduced a new tax incentive to encourage private sector investment in nationally significant infrastructure.

Investment in high quality infrastructure projects is critical to improving national productivity and underpinning economic growth.

Infrastructure projects often experience long lead times between incurring deductible expenditure in the construction phase and earning assessable income in the operational phase. Tax losses are therefore accumulated and carried forward to later income years awaiting the receipt of income. As such, the present value of losses may be eroded over time, disadvantaging infrastructure investment compared to other types of investment.

Furthermore, infrastructure projects may move through a number of phases as they progress from the construction phase to the operational phase. The infrastructure entity may have different owners as it moves through its different phases.

These changes could result in the infrastructure investors and providers no longer being able to use its tax losses to offset against future income, eroding the value of the losses altogether.

This measure will encourage private investment in nationally significant infrastructure projects by:

- ensuring that investors are not discouraged from investing in infrastructure because of the reduction in the present value of losses over time; and
- increasing the likelihood that the losses can be used to offset future earnings and benefit investors in the project, whether the original investors or new investors in the project.

In order to be eligible for the tax incentive, proponents will first need to apply to the Infrastructure Coordinator to have their project assessed and designated. Proposals will be assessed against the reform and invest framework, and those included as threshold or ready to proceed on Infrastructure Australia's infrastructure priority list will be considered eligible for the tax measure. In addition, projects must also meet the following criteria:

- be privately financed;
- be available to multiple users; and
- be in the pre-construction phase.

# APPENDIX D

## RECYCLING CAPITAL

Infrastructure Australia's 2012 report *Australia's Public Infrastructure – Part of the Answer to Removing the Infrastructure Deficit* identified more than \$100 billion of infrastructure assets on Government balance sheets that are suitable for transfer to the private sector. Subject to the level of competition, regulatory framework and user pays arrangements some are ready to be transferred immediately, while others will need reform to support private sector ownership. The value of asset classes and their suitability for transfer is in the table below.

### Suitability for transfer to private sector

Suitability for transfer to the private sector	Ready for transfer: competitive sectors	Ready for transfer: some level of monopoly characteristics, but suitable regulation in place	Demonstrate potential but require further work: some level of monopoly characteristics but regulatory framework and/or corporate structure needs further work	Estimated equity value of Government owned assets with potential to be transferred to the private sector*
Transforming our cities			<b>Roads</b> – require efficient road pricing strategies and reliable revenue streams to support privatisation.	Unknown
Competitive International Gateways (Ports)		<b>Capital city ports</b> – regulatory frameworks have been transferred to the private sector. <b>Bulk ports</b> – commercial operations, full user pays charging regimes and light-handed regulatory frameworks.		\$8 – 10 billion
National Freight Network		<b>Freight rail</b> – monopoly characteristics however subject to suitable and accepted regulatory frameworks.		\$2 – 3 billion
Adaptable and secure water supplies			<b>Metropolitan water and wastewater and rural water assets</b> – in most cases further price, corporate structure and regulatory reform is required.	\$54 – 63 billion
A truly national energy market	<b>National Electricity Market generators and retailers</b> – operate in competitive markets.	<b>National Electricity Market distribution and transmission</b> – monopoly characteristics by have price regulation within established regulatory framework.	<b>South West Interconnected System Electricity Assets</b> – Challenges with pricing, contestability and consistency with National Electricity Market may need to be addressed before private sector investment.	\$51 – 62 billion
Regional Infrastructure		<b>Various regional airports</b> – regional airports have less monopoly characteristics than city airports. Accepted regulatory frameworks in place.		<\$1 billion
Total value of assets				\$116 – \$139 billion

\* The estimated value of Government-held assets with the potential for asset transfer is based on assets and valuation methods outlined in the report 'Australia's Public Infrastructure – Part of the Answer to Removing the Infrastructure Deficit' (Infrastructure Australia 2012c). Valuations are indicative and primarily based on equity value estimates. Assets already announced as proceeding to a sale process are not included in the valuation.



# APPENDIX E NATIONAL INFRASTRUCTURE CONSTRUCTION SCHEDULE

The table below lists the major economic infrastructure and construction projects currently identified on the National Infrastructure Construction Schedule by state, as prepared by the Department of Infrastructure and Transport.

Project	Current Status	Timeline	Sector	Cost
<b>Australian Capital Territory</b>				
Majura Parkway	Committed	Q2 2012 – 2016	Transport	\$250m – \$500m
<b>New South Wales</b>				
Camden Valley Way – Raby Road to Oran Park Drive (Cobbitty Road)	Committed	Q1 2013 – 2016	Transport	TBA
Camden Valley Way, Bringelly Road to Ingleburn Road	Committed	2014 – 2016	Transport	TBA
HIMAS Albatross Redevelopment – Stage 3	Approvals	Q2 2012 – Q2 2015	Construction	\$100M-\$250M
Epping to Thornleigh Third Track Project – Alliance	Approvals	June 2012 – 2016	Construction	TBA
Lake Macquarie Transport Interchange at Glendale	Planning	Sept 2012 – 2016	Construction	Under \$25M
Moorebank Intermodal Terminal Project	Committed	2013 – 2017	Transport	TBA
Moorebank Units Relocation	Approvals	Q4 2012 – Q1 2015	Construction	\$500M – \$1B
Nelson Bay Road, Bobs Farm to Anna Bay Stage 3	Planning	Nov 2012 – Dec 2015	Transport	TBA
North-West Rail Link	Tender	Q2 2013 – 2019/20	Transport	Greater than \$5B
Pacific Highway – Nambucca Heads to Urunga	Tender	June 2012 – Dec 2016	Transport	TBA
Pacific Highway – Oxley to Kempsey	Approvals	Q4 2012 – 2016	Transport	TBA
Pacific Highway – Warrell Creek to Nambucca Heads	Approvals	Q4 2012 – 2016	Transport	TBA
Pacific Highway – Woolgoolga to Ballina	Approvals	Q4 2012 – 2016	Transport	TBA
Schofields Road, Stage 1 – Windsor Rd to Tallawong Rd	Planning	Q3 2012 – 2014	Transport	TBA
Sydney Light Rail Program – CBD and South East Light Rail	Planning	2014 – 2019/20	Transport	\$1B – \$5B
<b>Queensland</b>				
Bruce Highway (Brisbane – Gympie); Roys Road/Bells Creek	Committed	Q2 2013 – Q1 2015	Transport	\$50m – \$100m
Bruce Highway (Gin Gin – Benaraby) Back Creek Range	Tender	Q4 2012 – Q2 2014	Transport	\$50m – \$100m
Bruce Highway (Gin Gin – Benaraby) Cabbage Tree Creek – Carman Road	Approvals	Q4 2012 – Q2 2014	Transport	\$50m – \$100m
Bruce Highway – Cooroy to Curra (Brisbane – Gympie), Sankeys Road to Traveston Road (Section B)	Completed	Q4 2008 – Q4 2012	Transport	\$500m – \$1B
Burpengary – Caboolture Road (Graham Road – Gaffield Street)	Committed	Q3 2011 – Q4 2013	Transport	\$50m – \$100m
Cairns Bruce Highway Upgrade (Sheehy Road to Ray Jones Drive)	Tender	Q3 2011 – Q4 2013	Transport	\$100m – \$250m
Calliope Crossroads Interchange	Tender	Q2 2012 – Q1 2014	Transport	\$100m – \$250m
Cardwell Range Realignment	Committed	Q4 2009 – Q3 2013	Transport	\$100m – \$250m
Darra to Springfield Safety Work (Stage 2)	Committed	Q3 2012 – Q4 2014	Transport	\$50m – \$100m
Gateway Additional Lane (GAL)	Committed	Q4 2011 – Q4 2014	Transport	\$50m – \$100m
Gateway Arterial Road (Gateway Motorway – South); Mt Gravatt – Capalaba Road to Pacific Motorway	Tender	Q4 2012 – Q4 2014	Transport	\$50m – \$100m
Gladstone Port Access Road (0.85 – 5.00km)	Committed	Q3 2013 – Q2 2015	Transport	\$50m – \$100m
Gracemere Industrial Access Project	Tender	Q4 2011 – Q1 2013	Transport	\$50m – \$100m
Gore Highway (Toowoomba – Millmerran) 61.70 – 74.60km	Committed	Q2 2012 – Q3 2013	Transport	\$50m – \$100m
Landsborough Highway (Barcaldine – Longreach) Sections: 50.08 – 106.83km	Committed	Q4 2011 – Q4 2013	Transport	\$50m – \$100m
Landsborough Highway (Tambo – Blackall) Sections: 5.48 – 88.50km	Tender	Q4 2012 – Q3 2014	Transport	\$50m – \$100m
Landsborough Highway 7L Restoration (Morven – Augathella) Sections: 0 – 88.88km	Committed	Q2 2011 – Q3 2013	Transport	\$50m – \$100m
Leichhardt Highway (Westwood – Taroona) Sections: 6.07 – 254.50 km	Committed	Q3 2011 – Q2 2013	Transport	\$50m – \$100m

Moreton Bay Rail Link	Tender	Q3 2012 – Q4 2016	Transport	\$1B – \$5B
Pacific Motorway Interchange, Gateway Arterial Road (Gateway Motorway-South)	Approvals	Q4 2011 – Q3 2014	Transport	\$50m – \$100m
Pacific Motorway Upgrade – Gateway to Logan – Springwood South to Daisy Hill	Tender	Q1 2009 – Q1 2013	Transport	\$250m – \$500m
Pacific Motorway – Widening Between Nerang and Mudgeeraba Interchanges	Tender	Q3 2012 – Q4 2014	Transport	\$50m – \$100m
Pumicestone Road – Interchange Upgrade	Approvals	Q1 2013 – Q3 2014	Transport	\$50m – \$100m
Yeppen North Project	Tender	Q4 2011 – Q4 2013	Transport	\$50m – \$100m
NDRRA Warrego Highway – Event 7L – Restoration (Ipswich – Toowoomba) Sections: 73.80 – 85.50km	Committed	Q1 2012 – Q3 2012	Transport	\$50m – \$100m
Warrego Highway (Ipswich – Toowoomba) Sections: 88.83 – 95.01km	Committed	Q4 2012 – Q1 2014	Transport	\$50m – \$100m
Western Arterial Road (Jindalee – Everton Park)	Planning	Q1 2013 – Q2 2014	Transport	\$50m – \$100m
<b>South Australia</b>				
Goodwood and Torrens Rail Junctions Upgrade	Committed	Q3 2012 – Q2 2014	Transport	\$250m – \$500m
Rail Revitalisation – Gawler Line	Committed	2016 – 2020	Transport	TBA
<b>Tasmania</b>				
Midlands Irrigation Scheme	Tender	Q3 2011 – Q3 2014	Agriculture	\$100m – \$250m
<b>Victoria</b>				
Ballarat to Stawell Duplication	Committed	2013 – 2015	Transport	\$500m – \$1B
Dingley Bypass – Warrigall Road to Westall Road	Tender	Q3 2013 – Q3 2016	Transport	\$100m – \$250m
Geelong Ring Road – Stage 4C, Surf Coast Highway Connection	Tender	Q2 2013 – Q4 2016	Transport	Less than \$25m
Koo Wee Rup Bypass	Tender	Q1 2013 – Q4 2015	Transport	\$50m – \$100m
Mitcham Road and Rooks Road Rail Grade Separation Project	Tender	Q3 2012 – Q2 2014	Transport	\$100m – \$250m
Port of Melbourne Port Capacity Project	Tender	Q3 2012 – Q4 2016	Transport	\$1B – \$5B
Princes Highway East (Traralgon – Sale)	Committed	2009 – 2016	Transport	\$100m – \$250m
RAAF Base East Sale Redevelopment	Approvals	Q2 2012 – Q4 2015	Construction	\$100m – \$250m
Springvale Road Grade Separation Project	Tender	Q3 2012 – Q2 2014	Transport	\$100m – \$250m
Western Highway Duplication – Ballarat to Stawell (Section 2A Beaufort – Buangor)	Tender	Q2 2013 – 2015	Transport	\$100m – \$250m
<b>Western Australia</b>				
East Rockingham Waste Water Treatment Plan 40ML/day	Committed	2014 – Oct 2016	Electric, gas, water and waste services	\$100m – \$250m
Gateway WA	Tender	Feb 2012 – Dec 2016	Transport postal and warehousing	\$1,000m – \$5,000m
Harris Water Treatment Plant	Planning	2014 – Dec 2016	Electric, gas, water and waste services	\$100m – \$250m
Hedland South Waste Water Treatment – Relocation Pt Hedland	Planning	2012 – Sep 2013	Electric, gas, water and waste services	\$100m – \$250m
Hedland Yule Upgrade to 10.5 GL	Planning	Mar 2013 – Oct 2014	Electric, gas, water and waste services	\$50m – \$100m
IWSS Eglinton GWS Stage 1	Committed	2015 – Dec 2016	Electric, gas, water and waste services	\$50m – \$100m
IWSS Groundwater Replenishment Scheme	Planning	2014 – Jul 2016	Electric, gas, water and waste services	\$100m – \$250m
IWSS Perth GWR Stage 2: 14GL/year	Committed	2016 – Jul 2018	Electric, gas, water and waste services	\$50m – \$100m
Karratha Waste Water Treatment Plant No. 1 Upgrade to 10 MLD	Planning	2012 – Sep 2013	Electric, gas, water and waste services	\$50m – \$100m
Kwinana Freeway Managed Freeways Pilot Project	Planning	Jun 2012 – Jun 2014	Transport	\$100m – \$250m
Mandurah Gordon Road WWTP 12-16 ML/day Upgrade	Committed	2016 – Mar 2019	Electric, gas, water and waste services	TBA
Perth City Link Bus Project	Tender	Jan 2013 – Jun 2016	Construction	\$100m – \$250m
Subiaco WWTP Secondary Treatment to 75ML/day	Planning	2014 – Dec 2017	Electric, gas, water and waste services	\$100m – \$250m
Thomsons Reservoir Pond 2 and Roof	Feasibility	2016 – Oct 2018	Electric, gas, water and waste services	\$50m – \$100m
West Pilbara Bungaroo Integration Stage 1	Planning	Jun 2012 – Jun 2013	Electric, gas, water and waste services	\$100m – \$250m
West Pilbara Cape Lambert Main Extension Upgrade	Committed	2017 – Mar 2019	Electric, gas, water and waste services	\$50m – \$100m
Woodman Point Water Treatment Plant Interim Upgrade to 150ML/day	Planning	2014 – Jul 2016	Electric, gas, water and waste services	\$100m – \$250m
Woodman Pt WWTP Sludge Upgrade 180-240ML/day	Committed	2015 – Dec 2021	Electric, gas, water and waste services	\$100m – \$250m
<b>Multi-State</b>				
National Broadband Network	Tender	2013 – Q2 2021	Information, Media and Communications	TBA

• See [www.nics.gov.au/timeline](http://www.nics.gov.au/timeline), as of 6 June 2013.

• NICS projects identified in this table were selected by sector (infrastructure projects in the transport postal and warehousing, construction, information media and telecommunications, electricity, gas, water and waste services, agriculture, forestry and fishing as well as mining industries).

• The current status identified is that identified in the National Infrastructure Construction Schedule as of 6 June 2013.

• The timelines identified for each project are the planned timeframe to progress the project from tender to end of construction

• Projects by state are listed alphabetically

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## Appendices

- Note this figure includes only those projects on the national infrastructure priority list with capital estimates or a range.
- Guidance material on applying the framework is available at [http://www.infrastructureaustralia.gov.au/reform\\_investment](http://www.infrastructureaustralia.gov.au/reform_investment)
- This project replaces Queensland's Eastern Busway project.
- Previously Beams Road to Caboolture.
- Previously Gateway to Logan.
- Previously included under South West (Bunbury) Infrastructure.
- The Murray Basin Transcontinental Rail Link project was previously submitted by the Mildura Development Corporation. The current proposal, submitted by the Victorian Government, is for a feasibility study covering the wider transport infrastructure requirements of the region, as opposed to the rail link only.
- In last year's report this was titled 'An Innovation Strategy for Tasmania: Focus on Food Bowl Concept – Rural Water Infrastructure'.
- Project costs quoted are those included in the submissions received, except for Victorian Government's East-West Link and Melbourne Metro, where costs quoted are those referred to in the Victorian Budget 2012-13.
- Strategy development will consider existing Gold Coast Rail and Pacific Motorway proposals.
- Strategy development will consider Tasmanian Rail Revitalisation Program.
- The benefit cost ratios are those assessed by Infrastructure Australia, having regard to the proponent's estimate, and having made allowance for areas where the economic appraisal was judged to have over-stated or understated the project's benefits and costs.

# ACKNOWLEDGEMENTS

## Photographs

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