



Australian Government  
Infrastructure Australia

# Communicating the Imperative for Action

A report to the Council of  
Australian Governments

June 2011



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# Letter from the Chairman

Hon Anthony Albanese, MP  
Minister for Infrastructure and Transport

Dear Minister

It is my pleasure to provide you with a copy of Infrastructure Australia's 2010-11 report to the Council of Australian Governments.

The Infrastructure Australia Council has appreciated your strong support through the last year. Your message to the Council to strengthen its focus on infrastructure strategy and policy development is one that aligns closely with the Council's own sense of where greater action is required.

In many areas of public policy, the nation has demonstrated its willingness over the last twenty years to pursue necessary reforms that have then supported Australia's economic development.

On the other hand, progress in improving infrastructure planning, policy development and project evaluation has been slow. Across several infrastructure sectors, most notably in transport and water, governments have been advised and understand:

- the need for reform. Quite simply, current arrangements are unsustainable; and
- what needs to be done (whilst recognising that there may be differences in detail across jurisdictions).

As the rate of productivity growth has slowed over the last decade, the need for policy reform has grown. The infrastructure sector is a case in point.

What's missing is a sense of the urgent need for action.

The Council supports the thrust of comments made by Dr Ken Henry AC, the former Secretary of Treasury and Infrastructure Australia Council member, in his final address as Secretary, i.e. we cannot be complacent or self confident. To use Ken's words, we need to "communicate the imperative for action".

Those of us working in the infrastructure sector need to find better ways of engaging with the community, and making the case for change in the way we plan, deliver and manage our infrastructure networks.

Most critically, we need to make the case for major reform in the way we finance the development, operation and maintenance of our infrastructure networks. We need to show the consequences – lower rates of growth, declining standards of service – of failing to act.

The country needs leadership in this area. Political and business leaders must be willing to risk some criticism, and develop coalitions of support for difficult but necessary change.

The Council is keen to work with you during the coming year on these matters, and welcomes your offer to engage even more closely with the Council to address the infrastructure challenges facing the country.

The Council thanks the Government for its 'vote of support' in extending the term and strengthening the role of Infrastructure Australia with the 2011-12 budget announcement.

Equally, the Council welcomes the new responsibilities given to it by the Australian Government. Given the importance of the minerals and energy sectors to our economy, the Council aims to provide high quality advice in relation to outlays under the Regional Infrastructure Fund.

Looking back over the organisation's first three years, I am pleased that a small team – just the Infrastructure Coordinator, six policy staff and a handful of administrative staff to support the Council's work – has been able to achieve so much. It proves that Infrastructure Australia didn't need to be an overly large organisation to have an impact.

As noted in this report, Infrastructure Australia's focus over the next four years will lie in the following areas:

- getting the strategic settings right in the infrastructure sector. This will involve extending the approach used in developing the National Ports Strategy to other areas;
- financing reform, particularly developing practical options to secure additional private funds for investment in infrastructure;

- an expanded infrastructure pipeline, with a strong emphasis on projects that could be privately funded, and projects in regional Australia; and
- communicating the need for a more mature (and challenging) debate about our infrastructure and how we pay for it. This will be a core part of Infrastructure Australia's agenda over the next four years.

I would like to thank the outgoing Council members – Ken Henry, Ross Rolfe AO and Garry Weaven – for their fine contributions during Infrastructure Australia's first three years. All three brought their insight and passion to the table, especially on the vital issue of finding new means of funding the infrastructure required by our country. The Council and I wish them well. We are confident that they will continue to give of themselves in the cause of Australia's development.

Finally, I wish to welcome the new members to the Council – Councillor Nicole Lockwood, Dr Martin Parkinson PSM, and Elana Rubin. The next four years will be critical to the development of the nation's infrastructure networks, and their contributions to the Council's deliberations will be very welcome.

Sir Rod Eddington  
Chairman, Infrastructure Australia





# Executive Summary



Port Hedland is one of several very large export ports on Australia's north-west coast. Coordinating the various proposals to expand the port, and integrating the provision of utilities across governments and the private sector, are vitally important tasks for this region.

# Executive Summary

This is Infrastructure Australia's fourth major report to the Council of Australian Governments. Infrastructure Australia's mandate was strengthened and expanded by the Australian Government in the 2011-12 Budget.

It is appropriate, therefore, to take stock and:

- reflect on the major challenges facing the country; and
- highlight key areas of reform that must remain the focus of national attention, if the infrastructure sector is to play its part in addressing those challenges.

This report is also quite deliberately expressed in stronger terms than previous reports. Whilst governments have invested a significant amount on infrastructure, they have made little progress in responding to a number of issues raised in previous reports, e.g. the need for improved planning, and the need for reforms in the areas of pricing, demand management and funding.

In that context, Infrastructure Australia urges governments to embrace the need for reform, to lead necessary change, and to commit to action on a range of fronts.

## Key Challenges

Australians experience the consequences of poor or inadequate infrastructure planning, investment and regulation in their daily lives. They experience the frustration of congestion in our cities, and the absence of effective public transport leaves people stranded, both figuratively and literally.

Water restrictions and poor quality water affect the quality of our lives, and, worse, threaten the health of people in some regional communities. In various cases, our energy infrastructure is approaching the point where it must be renewed. Investors need certainty before they will commit to significant capital investments. An agreed position on climate change will be needed to progress crucial investment decisions.



In short, there is a sense that our infrastructure networks are barely adequate for current needs, and that they are beginning to impose significant, long-term costs. We need the courage to take difficult and decisive steps if our infrastructure networks are to continue to serve our needs and equip us to deal with significant economic, environmental and social challenges.

The slowdown in the rate of productivity growth over the last decade (to a point below the average of the countries that are members of the Organisation for Economic Cooperation and Development) needs to be reversed. While the causes of the slow down are varied, limitations imposed by our infrastructure – time lost in travel, costly delays at our ports, lost production due to water restrictions, or the prospect of power restrictions – have not helped.

There is a powerful need for change, especially in the way we fund our infrastructure, and in the discipline and rigour we bring to our infrastructure decisions. We particularly need to bridge the gap between expectations and reality, i.e. between the unrealistic notion that governments should fund more infrastructure, while at the same time cutting taxes, reducing debt, avoiding asset sales, and opposing the application of user charges.

Equally, we need to ensure that our existing infrastructure networks are well maintained and fit for purpose. Too often the focus is on the iconic, new project while the existing parts of our networks slowly degrade. In a number of areas, the age of our infrastructure is rising, and the condition of those assets is reaching a ‘tipping point’ where, in the absence of timely maintenance, the assets will require more substantial ‘remedial’ outlays.

Given the funding challenges before us, we need to make better use of our existing infrastructure networks. This is likely to involve a range of measures – for example charging for use of our infrastructure networks, changes in work hours, and concerted use of the National Broadband Network – to manage demand, thereby delaying and perhaps avoiding the need for expensive capital investment.

Ultimately, most of these problems and challenges have developed and intensified because of shortcomings in leadership. Governments, business leaders and opinion leaders have avoided a range of difficult debates and choices. That cannot persist.

### Infrastructure Australia's Role

Although, strictly, its role is set out in legislation, e.g. policy advice and the development of infrastructure priority lists, Infrastructure Australia is intended to be a catalyst for change; a mechanism to raise the standard of infrastructure-related decision-making. Infrastructure Australia aims to support the Australian community by:

- identifying key national gaps or weaknesses in infrastructure strategy or policy, and then working with others to re-dress those limitations. This is especially important in the transport sector, the area where the need for reform is greatest, where the community's expectation is highest, and where the ability to fund projects under current arrangements is lowest;
- by working across the infrastructure sectors, i.e. to identify issues where policy reform can assist stakeholders in multiple sectors, not just one sector;
- assisting governments with their infrastructure investment decisions, by providing additional and independent due diligence to the evaluation of project proposals; and
- raising the level of transparency in decision-making on infrastructure issues.

Working with governments and others, Infrastructure Australia has sought to re-shape the infrastructure environment over the last three years. It has been a significant undertaking for all concerned, and much more remains to be done. The key issues on which we have focussed our attention in the first three years have been:

- completion of the first national infrastructure audit, which foreshadowed many of the directions that have been pursued since 2008;
- improving standards of project planning and evaluation, particularly by the introduction and application of the Reform and Investment Framework. As a result, promising projects have been referred back to proponents for further development, and, in some cases, we've seen the benefits, i.e. re-submitted proposals that are more fully developed, and with a sharper focus on what needs to be done. Equally, poorly conceived projects have been 'knocked back';
- filling some notable policy gaps, especially with the release of the *National Ports Strategy* and current work on a *National Land Freight Strategy*;

- completion of the first national *Public Private Partnership Policy and Guidelines*. This has provided a common approach to a complex area of public policy, and lowered the barrier to entry for new private sector participants in the infrastructure sector; and
- raising the need for reform in the way we manage and fund our infrastructure, particularly in creating the environment where the private sector can play a larger role in funding the development of our infrastructure networks.
- financing reform, particularly developing practical options to secure additional private funds for necessary investment in infrastructure;
- an expanded infrastructure pipeline, with a strong emphasis on projects that could be privately funded, and projects in regional Australia; and
- communicating the need for a more mature (and challenging) debate about our infrastructure and how we pay for it.

We will work collaboratively with other parties, and welcome the establishment of other organisations with equivalent functions. Bodies such as Infrastructure NSW, the Tasmanian Infrastructure Advisory Council and similar organisations elsewhere will complement Infrastructure Australia's efforts at a national level, and improve standards of governance within individual jurisdictions. We will work with them to pursue necessary, but at times difficult change.

### Infrastructure Australia's Future Focus

In view of the Australian Government's decision to fund Infrastructure Australia for the next four years, this report highlights the key areas where Infrastructure Australia expects to focus its efforts over that period. The main areas will be:

- establishing the right strategic settings in the infrastructure sector. This will involve extending the approach used in developing the *National Ports Strategy* to other areas;



A yellow excavator is the central focus, positioned on a gravel surface. A worker wearing a white hard hat and safety vest is visible through the glass of the cab. The excavator's arm and bucket are partially visible on the left. The background shows a construction site with trees and a red fence. The text is overlaid on a semi-transparent grey box.

# National Challenges – Australia's Infrastructure in 2011

Work is proceeding on the electrification and upgrade of the Gawler Rail Line in northern Adelaide, one of the projects recommended by Infrastructure Australia in 2009 for funding from the Building Australia Fund.

# 1 National Challenges – Australia’s Infrastructure in 2011

Australia faces four key infrastructure-related challenges.

They are:

- a a decline in the rate of national productivity growth, and the uncertain prospects for future improvements in productivity;
- b the failure of governments to lead a community debate and agreement on necessary changes in the way the nation funds the development and operation of our key infrastructure, especially in the transport sector;
- c slow progress in pursuing regulatory and other reform, including limited progress in implementing reforms that governments have already agreed, for example in the water sector; and
- d continuing weaknesses in the planning of our infrastructure networks and in infrastructure investment decisions.

Each is addressed under a heading below. Other issues, e.g. dealing with climate change, are also important, and, in some cases, relate to the main concerns above. They are addressed collectively under a separate heading.

The matters above – productivity growth, funding, policy reform and planning – are clearly the main areas where governments must take a stronger leadership position and, frankly, show some courage. Failure to do so will leave the country and future generations much the poorer.

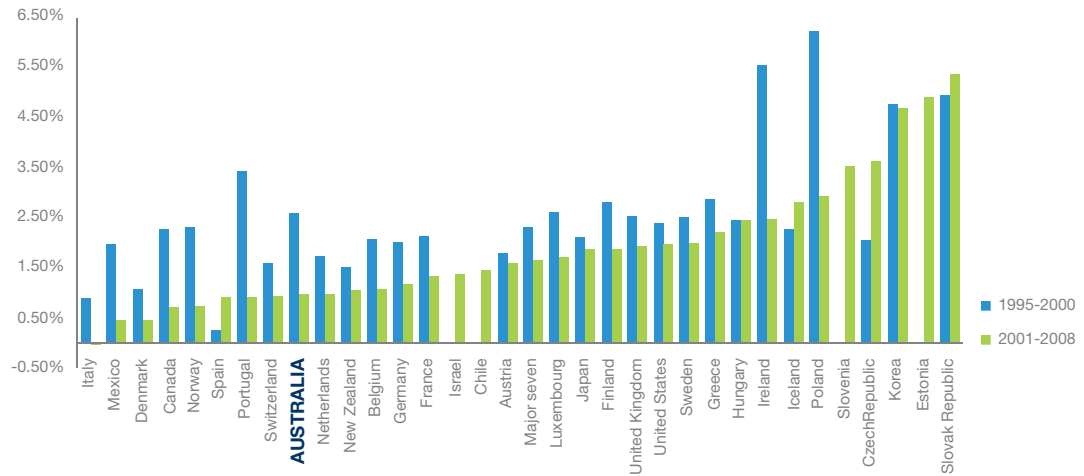
These are the areas where there is the greatest need for action.

## A. A Decline in the Rate of Productivity Growth

Productivity growth is fundamental to Australia’s future prosperity and well-being. Without productivity growth, the nation’s ability to maintain a high standard of living will be compromised. Without productivity growth, our ability to deal with present and future challenges – for example the implications of an ageing population and climate change to identify just two – will be more difficult.

As shown in Figure 1 below, Australia’s productivity growth has slowed markedly over the last decade. Moreover, Australia’s productivity growth is low in comparison with many developed countries.

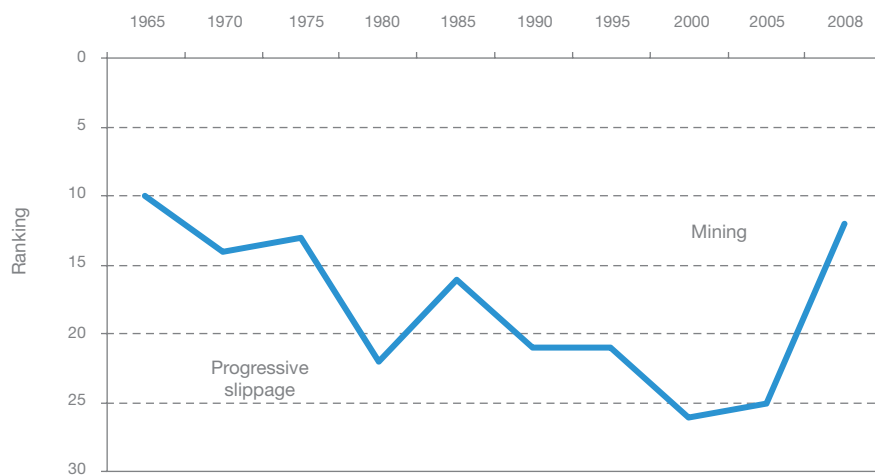
Figure 1: Average Annual Gross Domestic Product Per Hour Growth Rate (%)



Source: Organisation for Economic Cooperation and Development Factbook 2010

The slowdown in productivity growth affects the income of all Australians. But for an improvement in the last few years, probably brought about by the growth in our mining and energy exports, the relative 'income' of Australians compared to other countries has slipped somewhat over the last few decades (see Figure 2).

Figure 2: Australian Global Ranking of Gross Domestic Product Per Capita



Source: Office of the Infrastructure Coordinator analysis of World Bank data

In short, we need to consolidate the growth in national income from the minerals boom. Equally, we need to invest wisely in our infrastructure to improve productivity and enhance our global competitiveness.

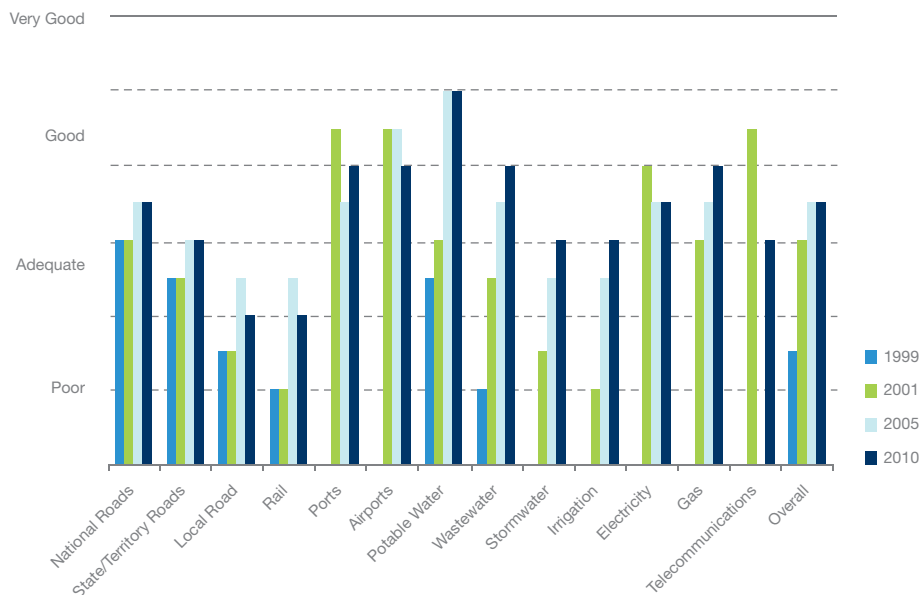
‘Investment’ in this context means much more than ‘funding’ projects. It means that projects started now will yield productivity benefits in the future that substantially outweigh costs. The focus needs to shift to projects that deliver these productivity benefits, not just projects that ‘need funding’. Such a focus implies greater participation of customers and the community in directly sharing the benefits and the costs of infrastructure projects.

### Is Australia’s Infrastructure Adequate for our Needs?

Inevitably, there is debate about the adequacy of the nation’s infrastructure networks.

The World Economic Forum’s 2010-11 Global Competitiveness Index ranked Australia’s infrastructure at 22nd out of 139 countries assessed, a respectable, though not a standout, result. Australia’s overall ranking was improved somewhat by a very high result for one measure (available airline seat kilometres). In fact, across a range of measures relevant to Australia’s fixed infrastructure networks, our ranking was in the 30s and 40s. Inadequate infrastructure supply was ranked as the fourth most significant problem for doing business (out of 15 potential problems).<sup>1</sup>

Figure 3: Assessment of Infrastructure by Engineers Australia: 1999 – 2010



Source: Office of the Infrastructure Coordinator analysis drawing on Engineers Australia assessments

1 World Economic Forum, Global Competitiveness Index 2010-11, p. 18 and pp.84-85. Available at <http://www.weforum.org/issues/global-competitiveness>



Engineers Australia has been reporting on the engineering profession's assessment of Australia's networks for more than a decade, i.e. whether they are 'fit for purpose'. The networks are assessed against 15 criteria, including asset condition, asset management, and various dimensions of sustainability.<sup>2</sup> Figure 3 shows Engineers Australia's overall assessment of the various elements of Australia's economic infrastructure.

Whilst there has been improvement across several sectors, the overall result suggests our infrastructure networks, and the systems we use to manage those networks, are, at best, merely adequate to meet the country's current needs. In some sectors that are critical for Australia's development as an urbanised, low-carbon economy, the ranking is poor.

Doubtless, some will contest these judgments, arguing that the assessments are self-serving.

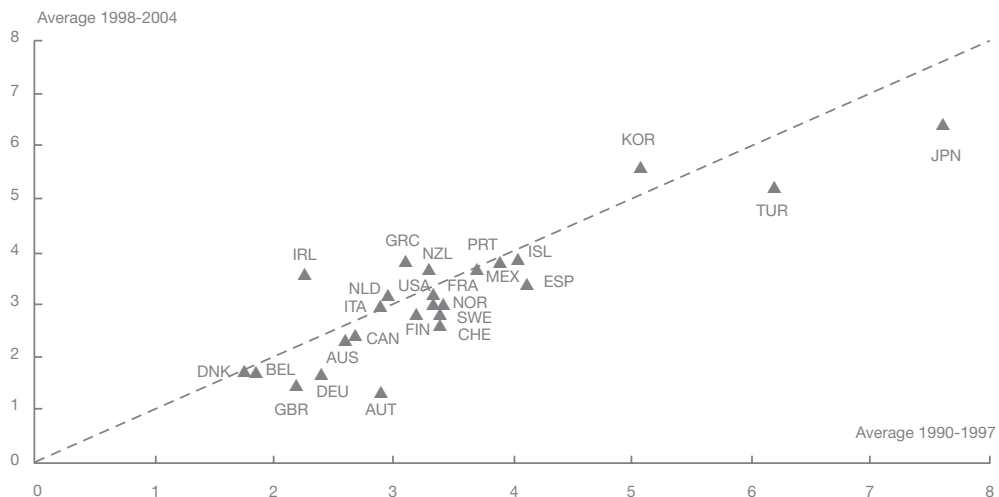
On the other hand, many would agree with the assessments, and, if anything, claim that they are optimistic.

### Are We Investing Enough?

Reform in infrastructure policy is vital, but, of itself, it is not enough to meet Australia's infrastructure needs. We will need to invest.

Like a number of other western countries, our investment in our public infrastructure has declined as a proportion of Gross Domestic Product. Importantly, as shown in Figure 4, over the 1990s and into the last decade, Australia has invested less in public infrastructure as a proportion of Gross Domestic Product than other countries. This has been offset partly by private investment, not only in export-related infrastructure, but also by the new private owners of assets previously owned by governments.

Figure 4: Public Investment as a Percentage of Gross Domestic Product 1990 – 2004



Source: Coombs and Roberts (2007) *Trends in Infrastructure*, drawing on OECD data

<sup>2</sup> The individual State/Territory and national assessments are available at <http://www.engineersaustralia.org.au/ieaust/index.cfm?669532E2-A7E8-F64F-4E97-88122877E8C7>

Still, we face a challenge. Our total capital stock (expressed as a proportion of Gross Domestic Product) is below the average of the Organisation for Economic Cooperation and Development countries. Developing nations around the world are investing billions of dollars in infrastructure. China, the Middle East, Africa and South America, as well as the developed nations of Canada and Europe, have decided that their economies can only grow with such investment.

Modern assets tend to be more productive than older assets. The rate of investment in, and therefore modernisation of, our capital stock is likely to be an important determinant of national productivity.

## B. Financing and Funding Reform

A productive future for our nation is by no means assured. We need a more productive economy, and prudent investment in our infrastructure is one of the suite of initiatives the nation needs to pursue to remain competitive.

As a nation, we also want better infrastructure to improve our quality of life, and adjust to a low carbon economy. Yet we seem unwilling to acknowledge that developing and maintaining our infrastructure costs money. There are no free rides.

### 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); and
- are ‘against’ recycling capital, i.e. selling poorly performing infrastructure assets that could be better managed by the private sector, and using the proceeds of those sales 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.

Failing to address this matter will threaten our prosperity and future. Communicating the need for a more mature debate about our infrastructure and how we pay for it will be a core part of Infrastructure Australia’s agenda over the next four years.

The gap between our expectations and the financial capacity of our governments is most pressing in the transport sector; the infrastructure sector which remains most removed from a sensibly-structured system of user charging.

As an example, the estimated capital cost of the urban transport proposals submitted to Infrastructure Australia since its establishment in mid-2008 is well over \$120 billion. It is reasonable to assume that the governments/ proponents believe that the projects are pressing and that they should proceed in the relatively near term. In fact the prospective demand on government transport budgets is somewhat higher than this figure, because:

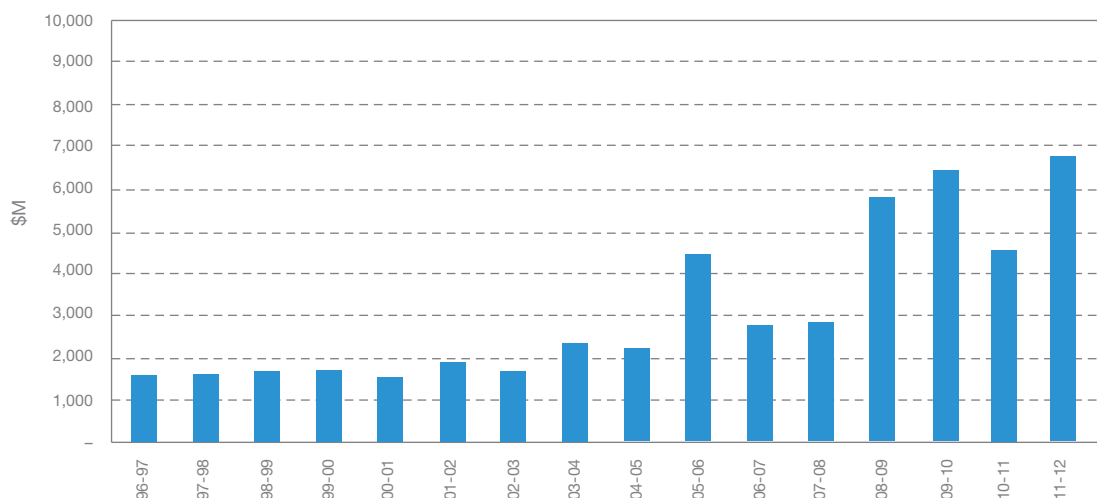
- 1 project cost estimates are frequently under-estimated, often by 50 – 100%;
- 2 other urban transport projects listed in government plans, or that are likely to be needed in the future, have not been submitted for Infrastructure Australia's consideration; and
- 3 the figure does not include the estimated cost of projects outside our cities, e.g. upgrades of our interstate road and rail networks.

Figure 5 puts these expectations into perspective. Until the last few years, Australian Government transport-associated outlays have typically been less than \$3 billion per annum. That figure covers all Australian Government transport infrastructure outlays, including those for major road and rail projects, smaller programmes such as the 'Blackspot' programme, and road-specific revenue sharing grants to Local Government.

On this basis, the prospective demands on the budget far exceed what we as a nation are presently prepared for our governments to spend on transport. Improving productivity and efficiency in the planning, procurement and delivery of projects can assist in creating the financial capacity to fund new infrastructure, though it would be misleading to conclude that 'efficiency improvements' alone will bridge the funding gap. In the absence of pricing reform, additional government expenditure on transport (to take that sector as an example) can only occur by:

- reducing outlays in other sectors, e.g. health, education and defence; and/or
- increasing taxes.

**Figure 5: Australian Government Land Transport Infrastructure Outlays (Nominal Dollars): 1996-97 to 2011-12**



Source: Office of the Infrastructure Coordinator analysis of data from Department of Infrastructure and Transport<sup>3</sup>

<sup>3</sup> The amounts behind the chart reflect all Australian Government land transport infrastructure-related outlays, including those for major road and rail projects, smaller programmes such as the 'Blackspot' programme, and road-specific revenue sharing grants to Local Government.

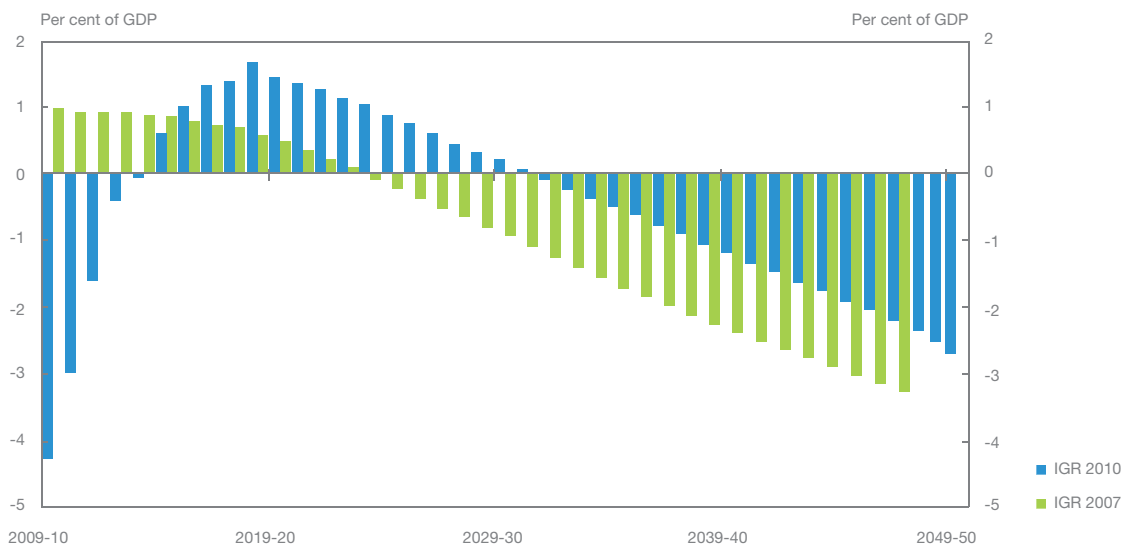
We also need to recognize that the nation and our governments face a major challenge in adjusting to an ageing population. The impact on future Australian Government budgets – both expenditure and revenues – is enormous, as the Australian Government’s *Inter-Generational Report 2010* shows.

Figure 9 shows that, on current policy settings<sup>4</sup>, a ‘fiscal gap, i.e. the gap between spending and revenues that will need to be closed to address the fiscal pressures of an ageing population, will appear in future

government budgets. Critically, for the discussion above, the modelling assumes that Australian Government outlays on transport, as a proportion of Gross Domestic Product, would not increase. Equivalent analysis by a number of State and Territory governments shows they face the same long-term fiscal challenges.

These structural challenges emphasise the need for a deeper, more mature public debate about infrastructure planning and investment decisions.

Figure 9: Australian Government Projected Fiscal Gap



Source: Australian Treasury, *Inter-Generational Report 2010*

4 For example, the modelling assumed that Australian Government revenues would remain at 23.6% of Gross Domestic Product (broadly the average of the last decade), and that no policy changes were made in areas such as health and retirement incomes.

## Infrastructure Financing Working Group

As noted above, the need for a new funding paradigm is especially critical. Without change in this area, Australia will not secure the infrastructure it needs. There will be a long list of ideas that cannot be delivered, leading to community frustration. The Infrastructure Priority List would lose its currency, and be seen as a long list of ideas that cannot be delivered.

Infrastructure Australia has established an Infrastructure Financing Working Group, including leading private sector stakeholders, to identify areas where changes can be made to improve the funding environment. Examples include:

- restructuring how projects are put to the market in order to encourage superannuation funds to invest in infrastructure, not only in so-called 'brownfield assets' but also in new projects;
- updating existing guidelines on public-private partnerships, taking into account the financial environment after the Global Financial Crisis, and experience with the transfer of demand risk on projects (several projects have failed financially because of over-optimistic demand projections);
- government asset sales; and
- for urban transport projects especially, models such as land value capture.

The Working Group builds on a successful conference held in April, involving Infrastructure Australia and senior figures in the infrastructure finance sector.

Although finding new means of financing infrastructure is vitally important, it is also important to remember that such financing options need to be applied to the right projects, i.e. projects that meet our national needs. Unless the projects are soundly conceived, they could still represent an unproductive call on national resources, whether they are funded by governments and/or by the private sector.

## C. Lack of Progress in Pursuing Reform

### The Pace of Regulatory Reform is Slow

Regulatory reform, particularly in the transport sector, has proceeded slowly. Remarkably, despite analysis suggesting that regulatory reform in the transport sector could offer benefits of many billions of dollars over the long term, there is still resistance to sensible reforms, e.g. the establishment of national safety regulators for rail, road and maritime industries.

It is pleasing to see that some progress has recently been made in these areas.

In the water sector, whilst agreements have been reached at a national level, e.g. adoption of a set of urban water planning principles in 2008, implementation of those agreements has been inconsistent and generally slow. The current Productivity Commission inquiry into the urban water sector has also found that further reform is required in this area.

It is not clear that the regulatory issues in the infrastructure sector are so complex or sensitive that a national approach cannot be pursued. Infrastructure Australia urges all State and Territory governments and the relevant industries to embrace the need for these changes.

### Failure to Use Pricing to Manage Demand and Signal the Need for Investment

Experience over Infrastructure Australia's first three years confirms that governments are reluctant to use the discipline of pricing to manage demand and encourage efficient new investment.

The challenges are most pressing in the road transport sector. While there are tentative steps in some jurisdictions, e.g. time of day tolling on the Sydney Harbour Bridge, these are the exception. Although congestion is recognised as a major economic cost, and there is a growing realisation that we cannot build our way out of it, the obvious answer is largely ignored. Other potentially complementary measures – travel behaviour change arrangements, or otherwise – simply are not at the forefront of governments' thinking.

This reluctance is borne out in the infrastructure proposals submitted to Infrastructure Australia. Invariably, pricing options are excluded altogether (on the grounds that it is ‘not government policy’) or given only a cursory assessment before the submission concludes that a large new taxpayer funded capital investment is required.

Infrastructure Australia acknowledges that reform in this area is politically difficult; it recognises that patterns of settlement and transport demand have built up within a paradigm of relatively inexpensive vehicles, free roads and, going back to the mid twentieth century, higher levels of investment.

But times have changed. Demands on government funds are greater, particularly in areas such as health, education and social policy. The cost of providing new infrastructure is rising above the rate of general inflation. In our cities, transport infrastructure often now requires extensive tunnelling, and higher degrees of protection of other community assets.

In this context, difficult as the changes may be, there are significant costs to the community in not pricing access to infrastructure. Every time government funds a project that could be funded by the users, it gives up the opportunity to fund projects where pricing is not a viable option, e.g. schools and hospitals.

Pricing is not a panacea; but, in a tight financial climate, it can buy time and defer the need for major outlays. Moreover, the shift in demand does not have to be great to produce results. Some data suggests that shifts of only 6-7% in traffic levels could have a dramatic impact on congestion levels.

#### D. Weaknesses in Planning and Project Development

The key weaknesses in infrastructure planning and project development remain at the level of strategy development. Projects are still being presented to Infrastructure Australia that do not align well with the proponents’ own strategic directions and plans.

At present, much of the debate around infrastructure is project-specific. Systemic issues and policy development are debated much less effectively. For example, there is little information or opportunity to consider the various trade-offs (e.g. levels of taxation and charging, project priorities, project scope, levels of service offered by our infrastructure networks) implicit in governments’ strategic planning processes.

In particular, the ability of governments and others to fund the portfolio of projects underpinning many plans is rarely considered in detail. And to the extent these debates occur at all, they are rarely open to the community at large.

Infrastructure Australia intends to place greater emphasis on strategy development, and will use the results of that work to shape the Infrastructure Priority List. Our work on the *National Ports Strategy* and the draft *National Land Freight Strategy* is indicative of the direction that we will take.

Infrastructure Australia will continue to work with the states and territories to promote the planning and development of nationally significant infrastructure proposals, and to recommend the best projects for support from the Australian Government.

The range of strategy work being undertaken through Infrastructure Australia continues to provide a platform for a more focussed process for updating the priority list in future. However, just as a substantially submissions-based process is not necessarily leading to a full list of proposals, so a process focussed too heavily on strategy will not produce proposals with sufficient definition (and owner/sponsor support) to enable rigorous project evaluation. In short, strategy has to be translated into real reform and investment proposals. Infrastructure Australia will engage further with proponents to achieve this objective.

## E. Other Key Challenges

### The Prospect of On-going Real Increases in Costs

Since 2008, many proposals to Infrastructure Australia have been presented on the basis that infrastructure outturn costs would escalate at a rate somewhat above the rate of general inflation. Projected escalation rates of 5 – 7% per annum have not been uncommon.

As a result, Infrastructure Australia recently commissioned some high level research<sup>5</sup> to examine whether experience in Australia was unique (perhaps reflecting local conditions, such as the number and scale of projects in the minerals and energy sector) or in line with overseas developments.

Data for Australia, the United States, United Kingdom, France and Canada showed strong similarities between the rates of increases in infrastructure costs across the countries. Infrastructure costs broadly tracked general rates of inflation until the early 2000s, and then increased in real terms, until the commencement of the Global Financial Crisis (when they fell in real terms).

The research identified local and international factors at play, both of which raise the possibility of on-going real increases in infrastructure costs. At the local level, the volume of construction-related work over the 2000s had an impact.

The research also noted that the increase in infrastructure costs in other countries (and Australia) from around 2003 occurred at the same time as a significant increase in global oil prices. Whilst this may simply be coincidence, rising energy prices do feed into rising costs. This is an important signal, as there is increasing evidence that oil prices are likely to rise in the short-term, and, over the medium term, by a significant amount.<sup>6</sup>

This is a complex area, and the research was exploratory. Other factors, including competition for construction resources from newly industrialising countries, may be involved. Nevertheless, the research highlights:

- the prospect of on-going real increases in the cost of developing infrastructure; and
- as a result, the need for governments and industry to carefully consider the choice and scope of projects in which they are investing. Governments need to carefully consider the scoping of their projects (to ensure they are not 'gold plated'), and more effectively consider the opportunity cost of their investment decisions.

5 GHD (2011) Evidence Based Comparative Analysis of Major Infrastructure Construction Costs in Australia and Internationally.

6 For example, the US Energy Information Administration's 2011 Energy Outlook concludes that under a 'central case' scenario, oil prices are projected to rise in real terms by 22% between 2010 and 2015, and by 88% under a 'high' scenario.

## Skills Shortages and Skills Development in the Infrastructure Sector

As in other areas of the economy, the infrastructure sector needs to focus on the development of a more skilled workforce. In the infrastructure sector, two areas of skills development stand out:

- planning and project development; and
- construction.

Weaknesses in infrastructure planning and project submissions are driven primarily by weaknesses in governance and policy. Infrastructure Australia's experience suggests there is scope to improve and extend the skills of those working at the 'front end' of infrastructure projects, but this will only occur if there is demand for these skills.

One way to do this is to have governments place a higher priority on the need to work through structured problem-solving processes such as Infrastructure Australia's Reform and Investment Framework. They are only likely to do this if there is a consequence of not doing it, e.g. not receiving Australian Government funding.

Working from the supply side of the equation, Infrastructure Australia collaborated with the Australian Institute of Management to design and deliver a two day master class in strategic infrastructure planning to infrastructure professionals titled *Thinking Strategically about Infrastructure in March 2011*.

The need for better skills remains evident in the quality of project proposals submitted to Infrastructure Australia. Consideration is therefore being given to running the course again later in the year, and at locations outside of Sydney.

In the construction and engineering sector, there is significant activity underway. Infrastructure Australia wants to avoid duplicating the efforts of others. Nevertheless, this is an area where Infrastructure Australia will look to play a more active, supporting role. We will look to work with both the large firms and representatives of smaller players in the sector.

## Governance

Improved governance in the infrastructure sector continues to remain a major issue. This observation applies at several levels. The effectiveness of various inter-governmental arrangements – Ministerial Councils, Standing Committees and Working Groups – is open to debate. The transparency to industry and the community of progress and results of some committees is an area that needs attention.

Equally, the number of local councils is something the nation needs to consider. There are strong views in the community about the importance of local representation. Nevertheless, the large number of councils, their variable capacity to manage local infrastructure networks, and, not infrequently, their apparent reluctance to 'see the bigger picture' and, instead, focus on local concerns, is a serious constraint on infrastructure planning and provision, and on the associated re-shaping of urban development.

### Governance

560 Councils, 8 State and Territory governments (comprising hundreds of agencies), 1 Federal Government to govern 23 million people. Is this sustainable? If this structure is not working effectively, do we have the strength and conviction to change these arrangements?



## Environmental Assessment Processes for Infrastructure Projects

Environmental assessment processes, and associated conditions imposed on new infrastructure projects, remain a concern for Infrastructure Australia. Considerable scope exists for productivity improvements in this area.

Infrastructure Australia looks to the Australian Government response to the review of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* to simplify the assessment process for major infrastructure projects.

Improving processes in this area will require more than legislative change. A review of assessment processes by Infrastructure Australia found that administrative and ‘turf’ issues were at the heart of many of the delays and inconsistent standards that bedevil various assessment processes. The review formed the basis of advice that was presented to the Council of Australian Governments at its meeting in July 2009.

Equally, processes within the jurisdictions frequently fell short of the truly integrated approach that is required.

Industry, local government and community groups have also expressed an interest in reviewing the current environmental offset policy to explore whether more certainty and alternative outcomes for community benefit might be considered.

At its meeting in July 2009, the Council of Australian Governments agreed, amongst other things, that:

*“funding agreements between the Commonwealth and State Governments for major infrastructure projects will require an integrated assessment and approval process encompassing all statutory assessments and approvals by the three levels of government with target time periods for each stage of the process, and that the process would be subject to transparent regular reporting arrangements including formal reporting through the Commonwealth Coordinator-General.”<sup>7</sup>*

The COAG Reform Council has been given a mandate to review progress with the implementation of this agreement. Infrastructure Australia will engage with the COAG Reform Council, and offer its assistance in undertaking that review.

Beyond the **processes** for obtaining environmental approvals, consideration needs to be given to reviewing whether there is scope to apply **different conditions** and management arrangements to major projects that might permit far more efficient construction practices to be used. There are sensitive trade-offs in this area; impacts on local communities during the course of construction are a legitimate concern.

7 The decision is available at [http://www.coag.gov.au/coag\\_meeting\\_outcomes/2009-07-02/index.cfm#regulatory](http://www.coag.gov.au/coag_meeting_outcomes/2009-07-02/index.cfm#regulatory)

Nevertheless, current planning and operational constraints would seem to have a significant impact on productivity. The impacts are in two areas:

- planning conditions that require construction to occur, in the main, during daylight hours; and
- operational limitations, e.g. keeping networks open during peak hours, and, as a consequence, limiting construction activity to a small 'window' late at night.

As a result, the time when construction can actually occur can often be reduced to as little as 5-6 hours per day, and an occasional (say, quarterly) weekend closure of part of the network. Anecdotal evidence suggests that, if a more productive approach to managing construction could be applied, quite substantial savings could be achieved. In addition, projects could be delivered far more quickly, and the community would gain the benefits of the upgrades at an earlier date than would otherwise be the case.

In a tight budgetary climate, opportunities to realise costs savings and improve productivity need to be considered. There is a need for public debate about this matter.

It cannot be beyond our ability to conceive of arrangements that involve a higher level of short-term impact and disruption (albeit with appropriate benefits and offsets, e.g. perhaps using some of the savings to fund other improvements in local infrastructure) but which yield substantial savings that can then be used to reduce backlogs in upgrading our major infrastructure.

## Increasing Competition and Capacity in the Infrastructure Sector

Pressure on government and private sector budgets demands that the nation secures the 'best value' in the delivery of infrastructure projects.

As identified in the research discussed earlier, Australia is experiencing increases in infrastructure costs that are significantly above the inflation rate.

Over the last ten years, Australia has seen significant consolidation in the ownership of firms operating in the infrastructure sector. Reports of skills shortages, particularly in the resources sector, are increasing. Consolidation has delivered firms that are capable of delivering massive infrastructure projects, but at the same time has reduced the level of competition in the construction sector. Consolidation has facilitated significant skills development, but has not provided a solution to skills shortages.

Government initiatives to deepen the skills base through training and development will take some time to bear fruit. In the meantime, the skills shortage is delaying projects and adding to their costs. Encouraging participation by overseas players in the Australian infrastructure market will increase the level of competition and assist in meeting skills shortages.

Infrastructure Australia is actively supporting initiatives that are aimed at attracting international players into the Australian infrastructure market, including:

- the Japan-Australia, and Australia-Japan Business Cooperation Committees' promotion of greater levels of collaboration by firms from both countries in Public Private Partnerships; and
- Austrade's continuing engagement with firms in Europe to promote and facilitate their entry into the Australian infrastructure market.

These initiatives seek to make participation in the Australian market as attractive as possible – for all parties. International players get to participate in a strong and commercially attractive economy, and Australia secures broader access to cutting edge design and technology, significant expertise in construction and operation of infrastructure, as well as capacity to finance massive projects.

Increased competition in the infrastructure sector should lead to greater efficiencies and greater productivity – in short being able to do more within available budgets.

Overseas players have shown interest in tendering for projects in Australia, and claim to be able to bring management and delivery skills that could dramatically cut the cost of developing projects in Australia. The message from overseas firms is that:

- such firms do not expect to be guaranteed to be awarded projects (it being accepted that they must win projects on a competitive basis); but they are looking to governments and the private sector to have a pipeline of projects on which they can tender and therefore justify the costs of establishing a material presence in Australia; and
- once governments decide to proceed with a project, they don't change their mind and terminate the tender process. Experiences in several jurisdictions have not helped Australia's reputation in this regard.

This is a vitally important point. Australia needs to attract more entrants in to the infrastructure sector. Infrastructure Australia will pursue this actively, both here in Australia and with overseas players.

## Best Practice Procurement

Infrastructure Australia has a strong interest in promoting the efficient delivery of nationally significant infrastructure. Infrastructure Australia, other government agencies and the private sector have a number of concerns relating to infrastructure procurement by the public sector in Australia. Infrastructure Australia is keen to identify the aspects of procurement performance that drive efficiency, both in the bidding process and in managing project delivery.

The key concerns about infrastructure procurement all have the effect of making the bidding process and project delivery more difficult and costly than it should be – both for government and the private sector.

In 2010, Infrastructure Australia investigated potential barriers to competition and efficiency in the procurement of Public Private Partnerships. Improvements identified in that review are now being implemented by state and territory governments. Infrastructure Australia will continue to identify lessons from the Canadian, United Kingdom and other Public Private Partnership markets that can be applied here.

Infrastructure Australia intends to identify, and then gain commitment to implementation of best practice procurement on a more consistent basis than is currently the case. This initiative will cover all forms of infrastructure procurement, not just Public Private Partnerships. This will involve working closely with state and territory governments and the private sector.

## Climate Change

The Climate Commission's recent report, *The Critical Decade*, articulates the great weight of scientific evidence pointing to the prospect of changes in our climate.<sup>8</sup> That evidence reinforces the need to take steps to:

- mitigate future increases in greenhouse gas emissions; and
- adapt to future climate change.

The recent report, *Climate Change Risks to Coastal Buildings and Infrastructure*, has improved our national understanding of the risks to our infrastructure posed by climate change.<sup>9</sup> The report argues that, under a high sea level rise scenario, by 2100 between 27,000 and 35,000 kilometres of our road and rail networks are at risk. These assets have an estimated replacement value, as at 2008, of between \$51 and \$67 billion.

There is broad agreement that doing nothing is not an option. On the other hand, many in the infrastructure sector are frustrated that the architecture of an enduring national response to climate change remains a matter of debate.

Market-based solutions are likely to yield the least cost means of addressing climate change.

Such solutions need policy certainty. In the energy sector especially, investors need certainty before they will be in a position to commit large sums in new, low carbon forms of energy.

Market measures may need to be supplemented by regulatory measures in order to reach emissions targets within set times.

<sup>8</sup> Available at: <http://climatecommission.gov.au/topics/the-critical-decade/>

<sup>9</sup> Available at: <http://climatecommission.gov.au/~media/publications/coastline/riskscoastalbuildings.pdf>

Given that the stationary energy sector represents around half of Australia's greenhouse emissions inventory, and given that the impact of policy uncertainty on investment decisions is most pressing in that sector, attention needs to be focused in that area.

The transport sector is also a significant source of greenhouse gases. Almost 15% of Australia's emissions are from the transport sector. Transport- sector emissions have grown at a faster rate than several other sectors; by almost 30% between 1990 and 2008 notwithstanding improvements in vehicle fuel efficiency.

Set against the emissions reduction targets committed to by governments and indicated by the scientific evidence, the growth in transport emissions suggests governments will need to consider climate change issues more carefully when setting their transport investment priorities.

In several fields, including climate change and energy, the future faced by Australia is different, and less clear, than for many decades. This has important consequences for infrastructure planning, and the role of government. There is a need for government to 'frame' its response to such challenges in a more sophisticated way than in the past, including by providing information to the community and markets.

Also, there is a change in the degree of redundancy risk facing various types of infrastructure. With these changes in risk, it is opportune to debate whether there should be increasing reliance on market mechanisms and the private sector to assess the price of these risks, rather than leaving future generations of taxpayers exposed to decisions they cannot influence.

## National Infrastructure Corridors Strategy

Delivering future infrastructure requires the acquisition of land, or corridors, to minimise disruption caused to communities when the infrastructure is subsequently installed.

Poor infrastructure corridor identification and protection is resulting in incompatible land use on or near key infrastructure precincts. As a result, future infrastructure development is either blocked or becomes very expensive, for instance because extensive tunnelling is required.

Similarly, the potential for the co-location of different types of infrastructure in the same corridor (such as road, rail lines, energy and telecommunications infrastructure), to reduce land costs and urban dislocation needs to be better explored.

Infrastructure Australia has progressed a draft national infrastructure corridors strategy, and has embarked on consultation with the jurisdictions in order to further develop its recommendations. The strategy will be submitted to the Council of Australian Governments later in 2011.





# Transforming Our Cities

The proposed Cross River Rail project, an 18 kilometre line through the heart of Brisbane, would provide a new station in the CBD, serve the 'Gabba, connect to existing lines at Roma Street and Park Road/Boggo Road, free up capacity for rail freight to serve the Port of Brisbane, and act as a catalyst for transit-oriented development in line with the Queensland Government's strategic plans for SE Queensland. The line has the potential to transform the development of Brisbane and the region.

## 2 Transforming Our Cities

### The Goal

To develop productive, sustainable and liveable cities by: consolidating planning and investment decision-making practices; making better use of existing infrastructure; and increasing public transport capacity and use.

#### National Urban Policy and Sustainable Population Strategy

In last year's report, Infrastructure Australia referred to the Australian Government's work which was to lead to a national perspective on our major cities.

It is pleasing to see that work come to fruition in the form of the *National Urban Policy*. It is also pleasing to see the Government's release of its *Sustainable Population Strategy*. These two documents are important foundations for infrastructure planning in our cities and regions.

The *National Urban Policy* sets out a number of important objectives and priorities for our cities. These include:

- investing in urban passenger transport, particularly public transport;
- increasing densities around transport nodes;
- using smart infrastructure, pricing and demand management measures to improve the effectiveness of transport networks;
- maximising triple-bottom line returns on infrastructure investment;
- protecting infrastructure corridors, sites and associated buffers from inappropriate development;

- considering climate change in the development and siting of infrastructure; and
- reducing spatially concentrated social disadvantage.

Infrastructure Australia will incorporate the objectives and priorities into its own strategy development work, and into its assessment of infrastructure proposals. The *National Urban Policy* sets out the Australian Government's higher order policy position that links well with the first stages of Infrastructure Australia's Reform and Investment Framework.

Similarly, some of the key messages from the *Sustainable Population Strategy* – notably the shared responsibility for high quality infrastructure planning – are worthy of support.

#### Taking the Long View

Infrastructure Australia is strongly of the view that, in the case of infrastructure, we need to 'take the long view'.

Whilst there is always uncertainty about the future, we need to ensure that plans are based on an understanding that, by mid century, Australia's capital cities could, on current medium level projections, have a total population that is 10 million larger than at present. The larger east coast cities would each need to manage an additional 2.5 million people or more.



For our larger cities, especially, this raises important questions about the nature of the metropolitan plans themselves. Looking forward only 20 years or so is likely to be too short a timeframe.

Notwithstanding the uncertainties about long-run projections, if we took a longer view, would we still reach the same conclusions about what infrastructure is required in the short to medium term, or would we do something different?

On the other hand, there is a risk of over-scoping projects to meet long-run projections that may not come to pass. This emphasises the importance of enabling projects to be staged or upgraded over time.

### Governance of our cities

Can we do better? Brisbane City Council has one Council for 1.1 million citizens. Sydney has 43 Councils for its 4.4 million citizens. Governance reform is vital in the infrastructure space.

### Economic development

Do any of our cities have clear targets for the economic, social and environmental outcomes for their communities? If there are no targets and no clear plans to reach those targets, it is little wonder that many in the community feel that, as a country, we are drifting and apprehensive about the future. We need a clear economic focus to drive our infrastructure investment in cities and elsewhere.

## COAG Reform Council Review of Metropolitan Planning Systems

The review of metropolitan planning systems has advanced considerably during the last year. Infrastructure Australia has worked closely with the COAG Reform Council on this review, particularly in:

- providing input to the Reform Council's work; and
- running a joint workshop with the Reform Council and jurisdictional representatives.

There are undoubtedly aspects of our metropolitan planning systems that work well. Nevertheless, it appears that in a number of cases, the capital city planning systems are in need of some improvement. This reflects Infrastructure Australia's experiences and conclusions.

### Opportunities for Improvement

A number of the infrastructure planning and project development weaknesses identified in Chapter 1 are evident in the planning of infrastructure to support our cities. The inevitable trade-offs between different public policy goals are frequently not well understood or debated.

There are considerable opportunities to:

- increase debate about the outcomes of different urban development and infrastructure investment strategies (e.g. the degree to which they might reduce congestion, and the cost of the various options);
- improve the rigour with which governments transparently prioritise their investment decisions;

- link infrastructure decisions to land use decisions, including decisions about the phasing of development;
- make better use of urban road space by sensibly allocating more space to public transport, cycling and freight vehicles (this recognises that, in most established urban areas, the cost of providing additional road space will be very high, and, accordingly, additions to the road network (especially below the arterial road network) will be limited;

Infrastructure Australia believes the Australian Government needs to re-affirm and follow through on its commitment to tie infrastructure funding to the effectiveness of the jurisdictions' planning systems. Reward payments, akin to the National Partnership payments system, are an option.

### Public Transport

The international movement is to dramatically improve the provision and utilisation of public transport by 2025. What would this require in Australia?

Can our governments work together to: improve safety and reliability; make greater use of the private sector; introduce a single fare and ticketing system across Australia; better integrate public transport with land use planning; use public transport to boost our economy (including better productivity outcomes); make better use of existing infrastructure; use 'horses for courses', pedestrian, bike, bus, etc.

### National Public Transport Strategy

Infrastructure Australia is strongly of the view that governments need to focus strongly on public transport in Australia's cities, and that worthwhile projects that strengthen the economy and resilience of the community need to be brought forward.

This should include some continuing role for the Australian Government. Until recently, successive Australian Governments have been disinterested in public transport.

Infrastructure Australia has received a number of proposals for public transport infrastructure, and also for urban roads. Few referred to services or service standards – in other words, the type of information that enables governments and the community to assess what they are trying to achieve, and the relative priority of different proposals. It is clear that more of these proposals will be needed to achieve the public transport systems needed by Australia.

Infrastructure Australia is finalising a number of studies aimed at providing the foundation for a national public transport strategy. Together with other base work, these studies will be used to commence a challenging debate about the role of public transport in personal movement, and the need to narrow distance between infrastructure proposals and benefits to all Australians.

## Urban Roads

In its 2010 report, Infrastructure Australia articulated a range of positions on the management of and charging for urban roads, and on the scoping of new roads.

It highlighted the importance of making better use of existing urban roads, e.g. through the introduction of a national approach to the development of managed motorways. Infrastructure Australia therefore welcomes the commitment of funds in the 2011-12 budget to a number of managed motorways projects. The governance dimensions of that programme, i.e. the requirement to implement a national approach to managed motorways, are vitally important.

Still, despite various inquiries (including the 2006 review of urban congestion, which was initiated by the Council of Australian Governments and found that some form of pricing was required to manage demand), there has been no substantive progress with or even trial of urban road pricing.

Unfortunately, no jurisdiction is prepared to canvass the proposition, much less take any action. The prospect of securing agreement on these matters at the Tax Summit later in 2011 seems as remote as ever.

The 2010 report to the Council of Australian Governments went on to state:

*Infrastructure Australia believes proposals for urban road upgrades (particularly those in our larger cities) need to demonstrate a clear focus on:*

- *Making better use of existing networks;*
- *The efficient movement of freight; and*
- *The efficient movement of road-based public transport.*

The *National Ports Strategy* and the draft *National Land Freight Strategy* made further suggestions, based on extension of already agreed directions and on some international examples. These included trials of freight priority lanes or roads in a few corridors in urban areas – selected by jurisdictions. The aim would be to improve efficiency, safety and community amenity of the growing freight task. Infrastructure Australia has not received any proposals along these lines.

Several submissions to Infrastructure Australia in the past year have continued to focus on the development of large urban motorways, presented as ‘freight roads’, when, in fact, 80-90% of the projected traffic is expected to be private vehicles.

In several cases, the use of tolls to fund these roads was rejected. At the same time, the jurisdictions have asked for the Australian Government to meet all or the great majority of the cost of these projects. Yet, as noted in Chapter 1 of this report, Australian Government outlays on transport are at an historical high.

Unless urban road proposals:

- are scoped in line with the principles outlined above; and/or
- provide for tolling/charging to recover the cost of the project(s), and send signals that will influence demand,

Infrastructure Australia is highly unlikely to support the proposals for funding by the Australian Government.

In the east coast cities especially, where many new arterial roads would need to be in tunnel (or possibly built on an elevated structure), new roads will be very expensive. Infrastructure Australia has previously reported tunnelled motorway costs of \$600 million+ per kilometre for six lane tunnels, i.e. around \$100 million+ per lane kilometre.

The transport outlays in Figure 5 in Chapter 1 demonstrate just how challenging those sorts of per kilometre costs truly are. Given those costs, and the long-run financial constraints facing all governments, further consideration will need to be given to more significant reforms, e.g. a form of network charge applied to a city's overall motorway network, as a means of:

- funding road improvements that support the principles mentioned above; and
- managing travel demand in our major cities, especially the large east coast cities.

A proposal involving network charging – Integrating Sydney's Motorway Network – was presented to Infrastructure Australia in early 2010, and included in the Infrastructure Priority List. Such proposals deserve further consideration.

## Smart Urban Infrastructure

Infrastructure Australia sees promise in the wider application of smart urban design – for example on-site water capture and recycling, and local energy generation – as a means of reducing the need for infrastructure network outlays.

Innovative trials are occurring in various locations around the country, often sponsored or supported by local councils. Programs such as the Smart Grid, Smart City program, and others like it at a State/Territory level, are useful complements to the local initiatives.

## Next Steps

Infrastructure Australia will continue its work in the following areas:

- development of an urban public transport strategy;
- engagement with governments and others about road charging models, including network charging; and
- working with the COAG Reform Council and governments to improve urban infrastructure planning, particularly with a view to building on the *National Urban Policy*.

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# Adaptable and Secure Water Supplies

Desalination plants, such as the facility at Kurnell in Sydney, are becoming an increasingly significant part of the urban water supply system.

# 3 Adaptable and Secure Water Supplies

## The Goal

To ensure the provision of secure, clean water supplies – which are integral to the quality of life enjoyed by Australians and to the success of Australian industry.

### Progressing Reform in the Water Sector

Infrastructure Australia's June 2010 report to the Council of Australian Governments indicated that we would pursue reforms relating to both major cities' and regional towns' water supplies. To that end, Infrastructure Australia:

- has worked closely with the National Water Commission on its review of urban water and the Productivity Commission on its Inquiry into Urban Water;
- has issued its report on *Regional Towns Water Quality and Security*;
- will work with the National Water Commission and its review of the National Water Initiative; and
- will continue to contribute to the Productivity Commission's Inquiry.

In the water sector, the case for reform is becoming increasingly clear and strong, as are the priorities and the direction that

reforms should take. Examples where key aspects of the already agreed Urban Water Planning Principles and the National Water Initiative's Pricing Principles are not being applied continue to be identified. In addition, recent reviews are indicating the need for wider reform.

Recent reports from the National Water Commission<sup>10</sup> and the Productivity Commission<sup>11</sup> have supported the thrust of Infrastructure Australia's earlier conclusions and recommendations on urban and regional towns' water. They have also informed and promoted debate, provided additional opportunities for input from stakeholders, and added to the evidence base in this area.

The coincidence of the three independent reviews, as well as the Committee for Economic Development of Australia's Australian Water Project, has ensured that a significant amount of expertise is being applied this subject.

10 National Water Commission (2011) *Urban Water in Australia: Future Directions*

11 Productivity Commission (2011) *Australia's Urban Water Sector – Draft Report*



## Major Cities' Water Security

The National Water Commission and the Productivity Commission have added support to Infrastructure Australia's view that further reform is necessary in the major cities' water sector, and that it needs to be focussed on three broad areas:

- 1 improvements in supply and demand planning, especially in the face of projected increases in population and greater variability in rainfall. There remains debate as to whether this requires stronger mechanisms at a central level or more locally, for example at a catchment level;
- 2 jurisdictions being prepared to consider and apply the full range of supply and demand management options, including water recycling, rural-urban trading, new dams and allowing new suppliers to enter the market. Customers should be able to know the costs of disregarding particular options – at the moment, these costs are not transparent. These changes need to recognise that customers (particularly larger customers) are likely to have differing demands for water security and quality; and
- 3 most importantly of all, broadening the application of fully cost-reflective water pricing. Governance reforms are required to separate water pricing decisions from day to day political pressures, as these have proven to pose significant risks to ensuring security of supply.

## Regional Towns Water Quality and Security

Infrastructure Australia released its report on regional towns' water quality and security in January 2011. The report presented evidence of serious problems in the drinking water supply for many regional towns. More specifically, it illustrated the limitations of the governance and institutional structures in NSW and Queensland in sustainably managing small towns' drinking water supplies.

In a number of communities, water supplies were not meeting reasonable standards. More generally, regional communities often cannot rely on receiving safe drinking water.

The challenges of supplying secure, safe water to regional towns are both similar to, and different from, those associated with the supply of water to our larger cities. For example, the need for clearer supply objectives, improved planning, and the application of cost-reflective pricing is common across localities. On the other hand, the governance arrangements and the availability of a skilled workforce are a greater challenge in regional areas.

The report presented a range of recommendations, principally:

- mandating compliance with the health-related aspects of the Australian Drinking Water Guidelines through legislation or regulation;
- implementing a nationally consistent Best Practice Management Framework for all regional water utilities;

- moving toward more cost reflective water pricing;
- developing a more highly skilled workforce to operate and maintain water systems in regional water utilities by developing a nationally consistent trade qualification; and
- reforming the governance and institutional structures of regional water utilities in NSW and Queensland.

The report concludes that governance and institutional reform are not sufficient to ensure reliable water quality – it must be accompanied by regulatory requirements to meet acceptable water quality standards and accountability mechanisms where performance falls short. In an important development, the NSW and South Australian Governments are moving to introduce health legislation and regulations to improve the reliability of drinking water quality. Victoria, Tasmania and Queensland already have such regulations. However, there are still instances of poor water quality outcomes in these jurisdictions, and there is room to strengthen the assurance mechanisms that are used to ensure compliance.

Feedback on the report has generally been positive and valuable. There is almost universal agreement that the first four recommendations above are important and worthwhile.

However, the proposal for reform of governance and institutional arrangements faced some resistance from local government in NSW. A number of councils in NSW voiced concerns over the potential impact of different governance arrangements on councils' financial viability and employment prospects in small towns. These are valid concerns that must be addressed if the benefits of these reforms are to be realised. Importantly, the Productivity Commission's draft report found that the benefits of reform far outweighed the costs for regional communities.

Infrastructure Australia reviewed its recommendations in the light of new information that emerged in its consultations following the release of its report and the work of the National Water Commission and Productivity Commission. It has become clearer that the County Council model in NSW can provide an effective and attractive arrangement for regional water utilities as an alternative to the recommended Regional Water Corporations. Such an option could go some way to dealing with the concerns voiced by some NSW councils and may be a suitable transitional or final solution.

Infrastructure Australia will use the opportunity of a further call for submissions to the Productivity Commission's Inquiry to take into account the feedback it has received and to improve the prospects of important reforms being implemented.

## Murray Darling Basin

At this time, Infrastructure Australia has not involved itself in debates about the Murray Darling Basin. We do not wish to duplicate the efforts of significant other bodies working in this area, and our current efforts are focussed on the areas mentioned above.

Progress with the development of water management plans for the Basin will be kept under review.

## Next Steps

As noted above, there is now a clear and strong case for reform in the management of major cities' and regional towns' water. In addition, the weight of evidence and expert opinion is now substantially aligned in relation to what needs to be done to assure city and regional communities that they will have a secure water supply that delivers drinking water of an acceptable standard.

It is now up to governments and other stakeholders to act to implement those agreed directions. Yet, some jurisdictions have indicated their intention to pursue pricing and governance models that run counter to the thrust of the recommendations of the various reviews. It is clear that there is still some distance between building a strong case for reform and building a constituency for implementing those reforms.

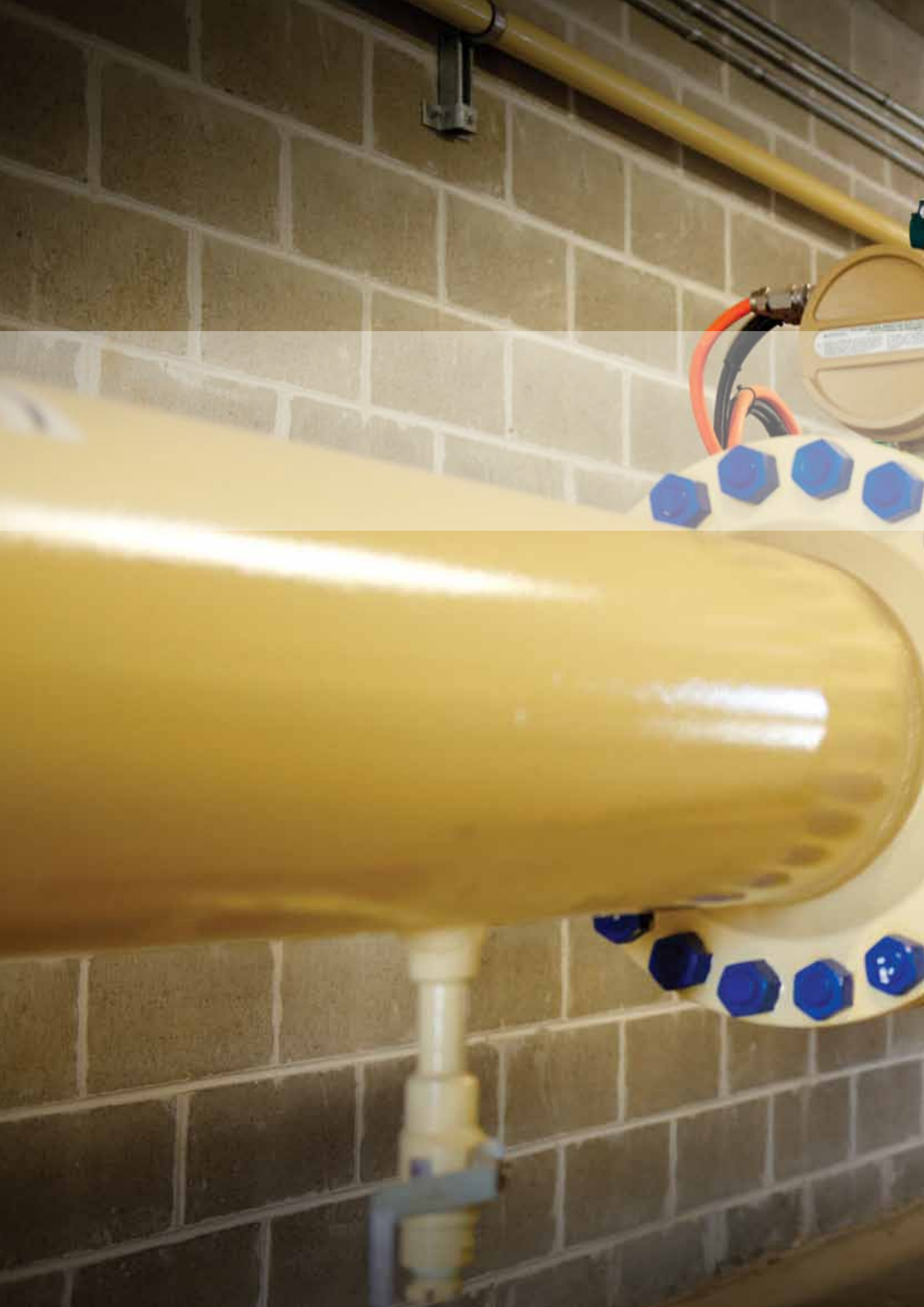
Infrastructure Australia strongly endorses the reform proposals in the recent National Water Commission and Productivity Commission reports. Probably the most vexed question posed by all these reports is: how does Australia ensure that the most important reforms are implemented? While the reforms will bring net benefits to city and regional communities and their jurisdictions, some of them are likely to involve difficult adjustments. This is not unusual when fundamental reforms are being implemented. As a result, it may be necessary for the Council of Australian Governments to once again take a lead in driving reform in the urban water sector.

This could involve:

- agreed national objectives for the urban water sector; and
- stronger incentives and other mechanisms to encourage jurisdictions to implement reform in the urban water sector.

Infrastructure Australia will continue to contribute to the debate on water reform and to work closely with other water sector participants in:

- the finalisation of the Productivity Commission's Inquiry into Urban Water;
- the review of the National Water Initiative; and
- the development of a package of reform proposals to be presented to the Council of Australian Governments.



A full-page photograph of a male worker in a yellow and black high-visibility safety suit, a white hard hat, and safety glasses. He is focused on a large, yellow industrial gas pipeline with numerous blue valves. The setting is an industrial facility with other similar equipment visible in the background. The text 'A True National Energy Market' is overlaid in white on a semi-transparent dark band across the middle of the image.

# A True National Energy Market

Upgrading our gas networks, such as this pipeline in Victoria, will be necessary as the nation shifts to a low carbon economy

# 4 A True National Energy Market

## The Goal

Reliable, safe and cost-efficient energy supplies for our homes, communities and industries.

Infrastructure Australia is confident that the current market-based framework for energy generation, trading, network operation and investment is appropriate for the Australian environment. The concerns that Infrastructure Australia raised in its June 2010 report to the Council of Australian Governments were that:

- the inter-regional electricity transmission network may not provide for effective competition between regions; and
- the electricity transmission network may not be capable of facilitating significant increases in renewable energy generation.

## Progressing Reform in the Energy Sector

Infrastructure Australia's June 2010 report indicated that we were confident that proposed reforms to the energy policy and regulatory regimes would promote the connection of and investment in new renewable energy generation and the progressive expansion and strengthening of the National Electricity Market.

The proposed reforms included: the new mandatory renewable energy target; changes to the renewable energy certificate scheme; changes to the regulatory arrangements for transmission grid extensions; and provisions for recovering the costs of transmission from beneficiaries outside the region where the energy was generated. In addition, the

Australian Government has announced the Connecting Renewables Initiative, aimed at supporting investment in transmission that will connect new renewable energy generation.

The renewable energy target and the renewable energy certificate scheme were revised as of January 2011, largely to deal with the impact of incentives for small scale solar generation and hot water on renewable energy certificate prices. It is likely to take some time for the impact of the revisions to the target and schemes to become clear. Infrastructure Australia will continue to monitor developments in the renewable energy certificate market as well as in investment sentiment in the renewable energy generation sector.

The National Electricity Market has a comprehensive regulatory framework which continues to evolve to meet the challenges of a growing population, the move to a less carbon intensive environment, and the maturing of the electricity market and its mechanisms. The National Electricity Market's regulatory framework will implement the reforms dealing with the connection of new renewable energy generators and inter-regional transmission charging. Implementation relies on substantive consultation with key stakeholders. These reforms will be implemented through changes to the National Energy Rules.

Proposed changes to the rules to implement Scale Efficient Network Extensions (to new renewable energy generation) and Inter-regional Transmission Charging are expected to be finalised in June 2011 and February 2012 respectively.

A major benefit of the Scale Efficient Network Extensions rule change will be in reducing the connection cost burden on first movers into remote renewable energy producing areas. The change will require transmission grid owners to publish the results of studies into the potential for efficiency gains from the coordinated connection of expected new generators in a particular area. This will provide critical information to investors in renewable energy generation and investors in the transmission companies.

The Inter-regional Transmission Charging rule change will mean that consumers in one National Electricity Market region that benefit from the flow of energy generated in another National Electricity Market region contribute to the costs of the transmission assets used to provide those flows. This rule change is likely to improve the feasibility of investment in transmission augmentation in regions that are net exporters of electricity and increase price competition in the National Electricity Market.

For example, under the existing rules, while the South Australian National Electricity Market region has significant existing and potential wind generation capacity, the regulator may not allow recovery of the costs of investment to allow export of energy to the Victorian National Electricity Market region because consumers in the South Australian region would not benefit. In this example, the rule change would mean that Victorian consumers would contribute to the cost of the South Australian transmission line that provided the flow.

The Connecting Renewables Initiative will provide \$1 billion over the next decade to facilitate connecting renewable energy projects to electricity networks. The fund aims to accelerate the development of transmission infrastructure that supports the connection of renewables generation that otherwise would not proceed without Australian Government support. Governance arrangements will be finalised in late 2011 to enable prioritisation of projects for funding assistance.

### Smart Grid, Smart City Initiative

Electricity distribution costs are increasing throughout Australia. This cost growth is being driven, in part, by the need to ensure the reliability of the electricity distribution networks in the face of growing demand for energy.

The Australian Government has committed up to \$100 million to develop the Smart Grid, Smart City project. A smart grid can improve the reliability of electricity services by identifying and resolving faults on the electricity grid, better managing voltage and identifying infrastructure that requires maintenance. They also can facilitate more effective integration of distributed generation, such as rooftop solar cells. By helping network managers better utilise existing infrastructure, smart grids have the potential to reduce the cost growth in distribution networks.

### Next Steps

Infrastructure Australia is confident that these reforms will promote investment in renewable energy generation in areas that provide the best outcome for all consumers in the National Electricity Market. Infrastructure Australia will continue to monitor the progress and impact of these reforms.







# Competitive International Gateways

The Port of Melbourne remains our largest container port. The *National Ports Strategy* aims to ensure that all nationally significant ports around the country are supported by plans to ensure that they can operate efficiently over the longer term, and that the necessary landside transport links are in place.

# 5 Competitive International Gateways

## The Goal

Improvement of Australia's trade performance by:

- cutting the cost of moving goods and bulk commodities through ports and airports, and related logistics chains; and
- cutting the cost of moving passengers through international airports and landside transfers.

## National Ports Strategy

Infrastructure Australia and the National Transport Commission presented a draft *National Ports Strategy* to the Australian Government in late 2010. This was subsequently discussed at the Council of Australian Governments. The Council of Australian Governments agreed to the need for a national ports strategy, and has asked the Infrastructure Ministerial Council to finalise an implementation plan by August 2011.

Ports are the fixed points of many of Australia's most important supply chains.

There is a large port in each of Australia's metropolitan areas, and economic activity in most of Australia's regions is dependent on at least one major port. In Australia, it is not possible to develop any sustainable national, jurisdictional or regional freight policy without strong reference to ports. A national ports strategy therefore is the logical starting place for rejuvenation of Australia's approaches to freight and ultimately transport policy.

While each port has unique challenges, they also share common national themes:

- 1 long term infrastructure;
- 2 the commercial nature of port, freight and cruise activities, and the role of trade facilitation;
- 3 the likelihood of strong growth in trade over the next few decades;
- 4 the need for efficiency and operational compatibility with other ports including those overseas;
- 5 the critical functional interdependence with land transport systems;
- 6 interaction with other community needs, including the challenge of urban encroachment;
- 7 the multiplicity of commercial and other stakeholders including defence, security, biosecurity;
- 8 the role of government in setting directions to achieve optimal economic and social outcomes; and
- 9 the potential leadership role of the port authority.

Given these, the ports strategy proposes: the need to publish long term plans; the need to allow these plans to be executed; the need to better integrate the ports with land transport infrastructure and freight activities; and the need to consider governance arrangements for ports.

The propositions of the ports strategy were developed in extensive consultation with industry and governments, and Infrastructure Australia welcomes the efforts of all in developing this important initiative.

The key issue addressed by the ports strategy is the need for confidence in the future of our major ports and supply chains. This confidence is important not only for the port, but for decisions about the location and investments of many businesses. It is necessary for long term plans for each major port and related land transport infrastructure to be agreed by governments and the community, and be published. Industry and the community, and not merely governments, need to be apprised of progress with the strategy, against the objective of improving investor and industry confidence.

In short, the issue of major ports is one for all Australians – but governments must take the lead in identifying broad parameters for future infrastructure requirements. Infrastructure Australia sees its future role in this as facilitative rather than directive.

### **Kingsford Smith Airport and Other Major Airports**

Kingsford Smith Airport is Australia's most significant international airport. The response of both the Australian and NSW Governments, industry and the community to the current review of Sydney's aviation needs is vitally important for the country.

Long-term solutions to accommodate growing aviation demand need to be found. This involves more than just a debate about airport capacity and potential sites. Land transport links to and from Kingsford Smith Airport are an increasingly pressing need for the city.

At this point, with around 35 million passengers passing through the airport each year, Kingsford Smith Airport is well on track towards its projected demand of almost 79 million passengers by the late 2020s.

The effectiveness of the airport's operations needs to be complemented by good ground transport. The airport environs are also expected to see increased freight traffic as a result of increased container movements to and from Port Botany. An integrated plan for handling these key transport flows is urgently needed, not just for Sydney but for the country.

### **Productivity Commission Review – Economic Regulation of Airports**

Infrastructure Australia welcomes the current reference to the Productivity Commission, asking it to report by the end of 2011 on the economic regulation of airport services. The Commission's terms of reference include:

- land transport facilities providing access to the airports;
- regulatory impacts on the ability of airports to price, operate and invest in infrastructure in an efficient and timely manner; and
- the effectiveness of arrangements for the control of planning, operation and service quality monitoring of land transport access to major airports.

These matters relate squarely to some of the challenges seen around Kingsford Smith Airport, and potentially at other locations.

Infrastructure Australia has met with the Commission to discuss the current inquiry, and expects to engage further with the review, once the Commission's draft report is released.

## A Regional Strategic Focus

Building on the productive capacity of Australia's regional communities is a focus of governments around the country. Infrastructure Australia shares that aspiration.

Increasingly, Australia's wealth is being generated in the regions. We need to ensure that our infrastructure networks do not put a

brake on the wealth-generating opportunities that exist in the various regions around the country.

The Regional Infrastructure Fund, and the support it provides for the development of infrastructure plans and specific projects, is an important means of supporting this work.

### Mt Isa – Townsville

Representatives from across the north and north-west of Queensland – 14 local Councils, industry, the community, the Port of Townsville, and Queensland Rail – recently met in Julia Creek, and agreed to prepare a supply chain masterplan for the Mt Isa to Townsville corridor, including energy, transport, water and telecommunications.

The Queensland Government and Infrastructure Australia are supporting this initiative.

This master plan will guide the development of one of the country's most productive regions. The draft 50 year masterplan that has been produced by the groups above is an exciting, comprehensive and visionary document. It offers a sound model for the way such planning might be pursued in other regions.

### The Pilbara

The further development of the Pilbara is a vital initiative for the nation. The opportunity for industry, and the Australian, State and local governments to work to increase the wealth created from this region cannot be missed.

The Western Australian Minister for Regional Development has led this initiative, with the support of the Premier, Prime Minister and

the Australian Government Ministers for Infrastructure and Transport, Regional Australia, Regional Development and Local Government, and Resources, Energy and Tourism.

The significant role of the two principal Shire Presidents is an important ingredient in this approach.

### The Hunter Valley

The Hunter Valley in NSW is a source of enormous wealth for the country. Its capacity to double and redouble its contribution to the nation is clear.

The supply chain of goods and services with a major port and city working together can change the face of the region. A new collaborative model though is needed, and alternative, smart ways of combining the best in the Hunter is achievable.

### The Green Triangle Project

The project remains the only example of genuine cross border collaboration we have seen. The development of the timber market is vital and the infrastructure development required significant. The South Australian and Victorian Governments working hand in hand with local government and industry have brought innovation to this task.

Infrastructure Australia will support similar initiatives in other regions, building on work to date. Examples include: the Rockhampton, Mackay and Gladstone region; the development of new ports in South Australia; the further development of Oakajee and Bunbury ports in Western Australia; Port Hastings in Melbourne, the NSW/Queensland border coastal region, and of course in our cities.

### Next Steps

In the coming twelve months, and over the coming years, Infrastructure Australia's primary focus will lie in two areas:

- securing adoption of the *National Ports Strategy*, then working with industry and jurisdictions to see it implemented; and
- working with regional groups to establish well-considered plans that maximise wealth-creating opportunities in regional Australia.



A large blue and white semi-truck is shown from a front-three-quarter view. The truck has a prominent chrome bumper with a license plate that reads "ROAD TRAIN". The license plate is split, with "ROAD" on the left and "TRAIN" on the right. The truck's grille is large and chrome, with a license plate that reads "SX 08DL". The truck is parked on a paved surface under a blue sky with scattered white clouds.

# A National Freight Network

Reform of our land transport links, including the identification of a network of roads where so-called 'B-triples' might operate, is needed to build upon the transport sector productivity gains of the last 20 years.

# 6 A National Freight Network

## The Goal

A national freight network capable of efficiently moving freight by rail and road.

### Draft National Land Freight Strategy

Numerous parliamentary and other reviews over twenty years have pointed towards the need for a more strategic approach to the way in which our nation plans, manages and invests in its land freight networks.

Infrastructure Australia's discussion paper on a *National Land Freight Strategy*, released in February 2011, builds upon the broad proposition outlined in last year's report to the Council of Australian Governments.

The freight industry and its customers need to have more direct and effective means of guiding decisions about the major freight network's management and investments.

Reflecting that proposition, the discussion paper has been strengthened by extensive private sector input, not just from freight operators but also from the end users of the freight network, i.e. the companies and individuals who need the network to work efficiently in order to move their product to market, and who base their locational decisions in part on expectations of governments' intentions regarding the major land transport infrastructure used by freight vehicles.

Feedback from market participants has emphasised the need for:

- 1 better planning for freight;
- 2 clarity about future freight projections on major infrastructure networks and whether the existing networks have the capacity to handle future growth;
- 3 much better interoperability;
- 4 better network condition, management, capacity and performance in various locations; and
- 5 a more commercial approach to infrastructure, including being able to attract private finance to improve freight networks.

Key directions outlined in the discussion paper are:

- building on the themes of the ports strategy; since, for Australia, ports are the most important fixed freight nodes;
- identifying a network for special focus – in recognition of the fact that major freight flows tend to be concentrated;
- consistent with agreed directions of the Council of Australian Governments, exploring opportunities to introduce direct charges for freight users to operate over the national road freight network, while recognizing that under current arrangements indirect charges are already paid;
- as a logical extension of this, and as applies in other infrastructure sectors, giving the freight industry and its customers some say in the location, priority and scope of improvements on some roads. This is consistent with the conclusions of the Productivity Commission and the Henry Tax Review;
- ensuring that the infrastructure on this major network is put to its most productive use;



- increasing interoperability among freight systems;
- further development of a standard gauge railway network across the country and between principal freight nodes and the designated interstate network, i.e. not just between the capital cities. One hundred and fifty years after the development of Australia's first railway line, we are still constrained by differences in rail gauge. As the freight task is projected to grow and as the rail freight task in particular needs to grow to improve overall productivity and minimize environmental impacts, we need to set ourselves a target of converting the existing narrow and broad gauge networks to standard gauge. Steps have already been taken in that direction. For example, some recent upgrades of rail lines in Victoria have provided for future conversion of the line to standard gauge. Each investment would need to be assessed for its costs and benefits; however, a move to a standard gauge network could enable productivity improvements in the procurement and maintenance of new rolling stock;
- establishment of a single rail control system or at least a similar interface with city rail control systems. Around the country, jurisdictions are making critical investment decisions about train control, new rolling stock, and the like. There is no clear sense that these investment decisions are being driven by an integrated national agenda. Given the shortage of specialist signaling and train control staff worldwide, and given the productivity savings that could come from having common systems, Australia needs to move to a common system. This must be part of the set of funding criteria that the Australian Government would attach to any new rail projects;
- pursuing opportunities to use smart technology and infrastructure operations;
- development of intermodal terminal capacity (both rail to road and road to road) in capital cities and other locations;
- introducing high productivity/high performance standards for roads on the national network, including the major interstate highways, town by-passes and so on. The productivity benefits that come from going to high performance vehicles is striking. Progress has been made in this area in some jurisdictions, notably in Victoria; and
- development of dedicated road freight infrastructure, where freight traffic densities permit, e.g. between capital city ports and intermodal terminals and freight clusters.

Consultations on the draft *National Land Freight Strategy* discussion paper are now well advanced. Feedback has been very positive, especially on the principle that freight operators' use of the road network needs to be charged.

### Improving Rural Road Asset Management

The Australian Rural Roads Group created by 114 Councils has provided a fresh approach – a single national road portfolio manager with serious opportunities for private sector investment.

### National Road Portfolio Manager

Management of the nation's roads remains a significant challenge. Whilst funding issues are raised by many (and they are not unimportant), the issues are more wide spread.

Over some years, State and Territory road authorities have progressively improved their asset management systems. The information base on which investment and maintenance decisions can then be made is somewhat better than it used to be. Even so, as reports from various jurisdictional Auditors General have found, the condition of various sections of our major road networks is variable and, in some locations, is in a state of decline.

This is partly a result of political pressures to fund new capital projects rather than investing in maintenance of existing assets.

At the local government level, especially in rural Australia, the picture is more serious.

Work by the Australian Rural Road Group has painted a compelling picture of the need for wide spread reform. Some of the Group's recommendations go to issues of additional funding. Others relate to changes in the methodology and formula for distributing general purpose revenue sharing grants and untied road funding grants to place a greater emphasis on the potential for prioritising the distribution of grants on a basis of the potential productivity gains that can be secured from those grants. In this, there are parallels with the recently announced review of the Commonwealth Grants Commission processes for distributing Goods and Service Tax revenues. These are likely to be important, but contentious areas of reform.

Underlying these sorts of changes though, is the need for greatly improved asset management practices.

Improvements in asset management are required to ensure the condition of existing road assets are not allowed to decline by default, and to provide the information base for more focused investment in our road networks. This investment needs to support rural industries and improvements in productivity.

A National Roads Portfolio Manager should be established. Its remit would extend not only to local government roads, but also to roads that are a shared responsibility between local government and state/territory governments, and the national highway network.

The roles of the Road Portfolio Manager could include:

- 1 independent high level verification of asset management plans prepared by local government and other road agencies;
- 2 working with councils that are experiencing significant difficulty in their asset management systems to ensure they receive suitable engineering and other support with the development and implementation of their asset management plans;
- 3 analysis of asset management plans to identify emerging trends; and
- 4 providing advice to other bodies, including Infrastructure Australia, on policy matters and on potential investment decisions.

## The Pacific Highway and Other East Coast Highways

The Pacific Highway is one of Australia's most important roads. Tens of millions of tons of freight and millions of vehicles traverse its length every year.

Successive New South Wales and Australian Governments have committed to upgrading the Pacific Highway to four lanes (most of it at a motorway standard) by 2016. Infrastructure Australia identified the remaining duplication projects as 'Ready to Proceed' in its 2009 report to the Council of Australian Governments.

The recent Australian Government budget confirmed additional funding (including new funding and the bringing forward of funds from 2014-15) to continue the duplication of the highway. Australian Government funding was conditional on the NSW Government making a financial contribution to this work.

On current indications, the expected 'outturn' costs of completing the highway by 2016 are somewhere between \$8-9 billion. Further works near Raymond Terrace and Coffs Harbour could add \$1 billion or more to this figure.

The additional funds provided in the 2011-12 budget provide some ability to pursue necessary planning, land acquisition and procurement steps over the next two years, as well as additional construction.

Even so, given broader budgetary restraints, historic levels of outlays on transport (current investment is the highest ever), and other significant project commitments both within New South Wales and across the nation, the NSW and Australian Governments will find it challenging to fund this project, such that it will be completed by 2016.

Similar funding challenges apply elsewhere. Upgrading the Bruce Highway from north of Brisbane to Cairns will also cost many billions of dollars. The floods in early 2011 highlighted the need for further funding (again, estimates suggest in the billions of dollars) to flood-proof parts of the highway.

As escalation rates in the infrastructure and construction sector are increasing above the general rate of inflation, there is a prospect that these costs will continue to rise appreciably for each year that funding is delayed.

In these circumstances, a different model is required.

Consistent with the principles articulated in the *National Land Freight Strategy* discussion paper, Infrastructure Australia believes that the Australian, New South Wales, Victorian and Queensland Governments should move towards an east-coast corridor wide tolling regime to fund and finalise the completion of the Pacific Highway, Hume Highway and upgrades on the Bruce Highway (and potentially other highways) at the earliest possible date.

The Pacific Highway has been upgraded on a sensible priority basis over the past fifteen years; in general, the more heavily trafficked sections of the highway, and the sections with greater safety risks, have been upgraded first. The consequence of that is that the remaining sections are relatively lightly trafficked. Similarly, many sections of the Bruce Highway are lightly trafficked.

This level of traffic is almost certainly insufficient to fund the highway upgrades, if tolls are applied only to the sections that remain to be upgraded. An east-coast corridor wide toll is required, both to moderate the per kilometre costs and to recognize various equity issues, e.g. to address concerns that highway users in northern NSW might pay a toll when users of the Hume Highway (which has been funded by governments over the last 20 years or more) do not.

Given the volume of inter-capital traffic, the Pacific Highway is the most critical of the highways in question. The growing volume of freight on southern sections of the Bruce Highway demands that well-scoped and prioritised safety and operational upgrades in that corridor will also be required.

Exceptions for genuinely local traffic using the highway upgrades might be considered. However, other users of the highways, including users of the existing upgraded sections of the highway, would pay a modest toll.

Similar arrangements should be considered for upgrades of other sections of the national highway network along the east coast, especially those linking Melbourne, Sydney and Brisbane such as the Newell and New England Highways. Such a model could evolve over time to include other parts of the national highway network. The motorway networks in other developed economies, both in Europe and increasingly in North America, are often established and operated on this basis.

Infrastructure Australia acknowledges that some will consider these moves controversial or perhaps unfair.

However, the \$8-9 billion not required for the Pacific Highway upgrade (and the billions required for the other highway upgrades) is funding that could be used to invest in other parts of the road network where tolling (even on a corridor basis) is unlikely to be sufficient to fund various projects, or in urban public transport.

### Next Steps

Infrastructure Australia will present a draft *National Land Freight Strategy* later this year for consideration by the Council of Australian Governments.

The productivity improvements that can be realised through this initiative should not be underestimated. Consideration of the *National Ports Strategy* showed that individual jurisdictions can still bring narrow, sectional perspectives to bear that ultimately frustrate important national reform.

Infrastructure Australia believes that the *National Land Freight Strategy* will be an important reform worthy of the Council of Australian Governments support.



A large spool of blue fiber optic cable is the central focus, set against a background of a clear blue sky with light clouds. In the distance, a utility pole and a red safety fence are visible. The spool is made of wood and is filled with many strands of bright blue fiber optic cable.

# A National Broadband Network

The rollout of the National Broadband Network is under way, promising considerably improved access to services in regional Australia and wider use of smart infrastructure in our cities.

# 7 A National Broadband Network

## The Goal

High speed telecommunications to support improvements in productivity and service delivery in our cities and regions.

Countries around the world are improving their telecommunications systems. Australia needs to do likewise.

### Submission to the Standing Committee on Communications and Infrastructure

The Infrastructure Coordinator has articulated his position on the Government's National Broadband Network in a submission to the House of Representatives Inquiry. The submission explained that "...as overseas experiences have shown, a national optical fibre network could enable 'smart infrastructure' enhancements to the management of our economic infrastructure that could realistically yield substantial productivity benefits."

Examples of these smart infrastructure enhancements include intelligent transport systems that can help improve travel safety and efficiency. The National Broadband Network can also support increased telecommuting – which involves employees utilising technology to work from locations other than the traditional workplace – thereby reducing road congestion and travel demand.

### Opportunities for Telecommuting

At present, Australians are less likely to telecommute or 'telework' than in other countries. Data from the Australian Bureau of Statistics cited in work commissioned by the Australian Department of Broadband, Communications and the Digital Economy indicates that around 6% of employed persons have some form of 'teleworking' arrangement.<sup>12</sup> On the other hand:

*The Australian experience falls well short of teleworking rates in other countries. WorldatWork (2009) reports that 11% of US employees telework at least one day per month. Teleworking is also more common in the EU, where eight countries report that more than 10% of workers were involved in telework 'a quarter of the time or more' as of 2005.*

<sup>12</sup> Access Economics (2010) *Impacts of Teleworking under the NBN*, Available at [http://www.dbcde.gov.au/publications/2010\\_publications](http://www.dbcde.gov.au/publications/2010_publications)

The propensity to telecommute is higher in locations with a higher proportion of white collar workers (e.g. locations such as the capital cities).

The report commissioned by the Department of Broadband, Communications and the Digital Economy pointed to the following reasons why the National Broadband Network may have an impact on the uptake of telecommuting:

- *The improved quality and reliability [of fibre compared to existing broadband] will reduce uncertainty about whether it is possible for teleworkers to remain as productive as when they are in the office and encourage employers to utilise teleworking as part of their business;*
- *The cross-network reliability of the National Broadband Network provides greater remote monitoring certainty to employers, as worker output differences more clearly relate to productivity differences rather than differences in technical capacity;*
- *New applications that will make it easier to work remotely will become available under the National Broadband Network. A key example is quality of service video conferencing, as high speeds and low latency mean video conferencing approaches the physical reliability of face-to-face discussion;*
- *The speed of data transfer will facilitate more reliable use of remote servers, as files can be downloaded and uploaded faster and with more reliability about the speed at which transfer will take place.*

*This will be particularly important where the nature of the business involves very large files, such as in architecture and the planning approvals process where electronic file transfer is presently a laborious process; and*

- *The National Broadband Network will likely widen the potential for teleworking, with some industries and careers opened to teleworking for the first time as new applications become available. Tertiary education is one such example, where high quality video conferencing means both the teacher and student can attend lectures remotely, improving the productivity of the lecturer and increasing access to classes.*

While the uptake of telecommuting will continue to be influenced by many factors, the National Broadband Network has the potential to bring about a significant change in the 'technical' constraints on the wider application of this practice. It may be that the demand for transport (especially commuting) will be lower than conventional projections would suggest, and that the National Broadband Network will facilitate a greater ability to manage demand and lower infrastructure costs.

### Next Steps

Infrastructure Australia will continue to stay abreast of developments with the network, and, in particular, how high speed broadband can be utilised to maximise the return on other infrastructure investments.





An aerial photograph showing a coastal town with several buildings and a large body of water in the background. The town is situated on a flat, reddish-brown landscape with scattered green trees. The water is a deep blue, and the sky is clear and light blue. The title 'Essential Indigenous Infrastructure' is overlaid in white text on a semi-transparent dark blue band across the middle of the image.

# Essential Indigenous Infrastructure

Providing improved infrastructure to support indigenous communities, such as the settlement of Lajamanu in northern Queensland, is a national priority.

# 8 Essential Indigenous Infrastructure

## The Goal

Improve infrastructure and services for remote Indigenous communities to ‘close the gap’ between standards of opportunity to other Australians and those in remote communities.

## The Challenge

In many parts of remote Australia, Indigenous communities do not have access to reasonable standards of infrastructure that other Australians would take as a given. Adequate roads, public transport, communications, water supply and electricity infrastructure in these communities is essential to ‘close the gap’ in Indigenous health and well being.

There is a need to consolidate best practice in order to provide a framework for remote delivery that engages with Indigenous people in remote communities through processes, training and management models that will deliver long term, ongoing and sustainable employment, business development and social well being options.

Building on the National Partnership Agreement on Remote Service Delivery and the work of the Co-ordinator-General for Remote Indigenous Services, Infrastructure Australia is now taking a lead in the development of the best practice planning frameworks described above. With the assistance of seconded staff from Australian Government agencies and the jurisdictions, Infrastructure Australia is now taking a more active role in pursuing planning improvements in this area.

A Sub Committee of the Infrastructure Australia Council has been established with a range of objectives to:

- support the National Indigenous Reform Agreement (NIRA) and the National Partnership Agreement, with a particular focus on identification and resourcing of infrastructure deficiencies in remote Indigenous communities;
- develop infrastructure plans with joint federal, state, territory, local government and first and third party support, which aim to ensure that, over time, standards of infrastructure are brought to an acceptable standard in the larger Indigenous communities comparable with those non-Indigenous communities of similar size and location;
- ensure that such infrastructure plans are integrated with land use and service requirements and that infrastructure projects proposed in such plans are viable in remote communities and are developed using Infrastructure Australia’s seven step Reform and Investment Framework;

- develop funding arrangements for eligible projects that include contributions from federal, state, territory and local governments, the private sector and Indigenous communities as appropriate; and
- provide advice on effective governance arrangements for ongoing delivery and operation (including Indigenous participation) of critical infrastructure projects.

The Sub-Committee's first priorities are to:

- develop a framework for prioritisation of remote Indigenous infrastructure projects based on:
  - town/regional land use planning and infrastructure planning arrangements in remote areas;
  - relevant information from processes such as the recent audit of municipal and essential services delivery mechanisms explored in work by the Gumala Aboriginal Corporation; and
  - Infrastructure Australia's seven step Reform and Investment Framework, with further advice on relevant cost/benefit analysis;
- develop eligibility criteria and a project assessment methodology based on the current Infrastructure Australia methodology;
- develop a funding model for eligible projects and a case for the establishment of sustainable sources of funding; and

- develop a broader reform framework supporting improved and normalised service delivery where feasible, and better overall targeting and coordination of government investment (including housing) and planning processes.

A working group with representation from the Department of Families, Housing, Community Services and Indigenous Affairs, the Office of the Coordinator General for Remote Indigenous Services, and the Northern Territory, Western Australian, South Australian, and Queensland Governments has been established to ensure engagement with relevant jurisdictions, and to draw upon the work in those areas. Infrastructure Australia is aiming to secure the involvement of other jurisdictions in the working group.

The working group also includes representatives from the private sector, the Centre for Appropriate Technology and the Australian Local Government Association.

Delivery models will draw upon both local experience, for example models applied by some of the resource companies in Western Australia, and international experience, for example approaches documented by the Organisation for Economic Cooperation and Development, the World Bank, and models from Canada.

### Next Steps

Infrastructure Australia will circulate an issues paper for comment during 2011 identifying areas where the need for change is most pressing.





# Appendices

The Tasmanian Government remains keen to support the revitalisation of the centre of Hobart, both by strengthening the Antarctic industries currently operating out of the port, and by redeveloping some dockside lands for housing.

# Appendix A

## Updating the Infrastructure Priority List

This appendix sets out a range of issues associated with the development of the Infrastructure Priority List. It also describes the processes that have been followed in developing the list, and the broad outcomes from the evaluation of proposals received over the last year.

### The Reform and Investment Framework

The project evaluation processes applied by Infrastructure Australia to arrive at the Infrastructure Priority List are often seen by proponents as a ‘hurdle’ that has to be negotiated. Indeed, project proponents have said to Infrastructure Australia representatives, “We’ll go through this exercise if there is a chance of some funding from the government; otherwise why bother?”

Such comments reflect an understandable desire to focus attention and resources on projects that ‘have a chance of success’. More seriously, though, they are also suggestive of a misunderstanding of the importance of robust planning, project development, and project evaluation.

The Reform and Investment Framework (set out at the end of this appendix) and Infrastructure Australia’s assessment of project proposals against three broad criteria – strategic alignment, economic appraisal, and ‘deliverability’ – simply reflect good infrastructure planning and investment practice. Governments and others should apply similar processes and rigour to all of their infrastructure decisions, whether or not the projects need to involve Infrastructure Australia or require Australian Government funding support.

The Reform and Investment Framework has been available to proponents for almost three years, and, as noted later, Infrastructure Australia has sought to engage closely with proponents to assist them in understanding the importance of a clear articulation of their proposals against four basic questions which underpin the Framework, i.e.:

- 1 what is the proponent aiming to achieve with the investment proposal, i.e. what are the higher order goals and specific objectives the proposal is looking to address?
- 2 what problems are preventing or constraining the achievement of those goals and objectives, and what is the relative ranking of those problems?
- 3 what options, including options that do not require the construction of new infrastructure, are available to resolve those problems?
- 4 following rigorous analysis, what is the best or most appropriate option to resolve those problems?

In turn, the Framework provides a mechanism for proponents to present and articulate their proposals in a way that assists Infrastructure Australia to answer three basic questions:

- a does the proposal present a cogent, well-structured case that the project is well aligned with national strategic priorities?
- b is there solid evidence that the project will generate economic benefits?
- c if the first two questions are answered in the affirmative, is the depth and range of project development (including risk management and governance arrangements) sufficient to provide confidence that the project can be successfully delivered and that the benefits claimed for the project can actually be realised?

Given the financial and other challenges outlined in Chapter 1, the importance of rigorous project development and evaluation is only going to grow. Whether at a national level – or at a State, Territory or local level – we cannot afford to waste scarce capital on poorly conceived projects.

Equally, we need to set our priorities wisely. Scarce capital needs to be committed to addressing the big problems first. Fixing the wrong problem or addressing lower order complaints while major challenges are left unattended is likely to impose a high cost, whether it is expressed in:

- lost economic potential;
- limited preparedness to deal with long-term challenges such as climate change; and/or
- social costs.

## Capital Cost Threshold

Infrastructure Australia was established to assist governments, the private sector and the community address nationally significant infrastructure issues.

In its first two years, Infrastructure Australia did not adopt a threshold value of capital cost or benefit to help identify projects of national significance. In part, this was because it was felt that a simple 'cut off' might exclude potentially worthwhile projects. Particularly in a Federation, divergent views will exist as to what type or scale of initiative appropriately qualifies a project to be 'nationally significant'. Some will argue that projects can be nationally significant, even though, of themselves, they have a relatively small capital cost.

Nevertheless, in order to focus the efforts of prospective proponents, and consistent with the Australian Government's statement of expectations for Infrastructure Australia, we will now only consider projects above a threshold of \$100 million, except in relation to projects that demonstrate unique national interest qualities.<sup>13</sup> This development will minimise the risk of proponents putting substantial effort into proposals that are unlikely to make their way on to the Infrastructure Priority List. This is not to say that the proposals are without merit; rather it simply reflects the need to focus national efforts on national infrastructure priorities.

<sup>13</sup> The Australian Government's 2011-12 Budget also announced a role for Infrastructure Australia in relation to the assessment of Regional Infrastructure Fund projects. This role is separable to the development of the national infrastructure priority list, and, in executing this role, Infrastructure Australia will not apply the \$100 million capital cost threshold.

The following criteria will be used as an initial capital cost filter in the assessment of submissions:

A capital cost threshold of \$100 million in current year real dollars will be applied. The capital cost estimate will be that presented by the proponent, adjusted for any clear overstatement of costs compared to similar projects;

- 1 \$100 million relates to the creation or development of relevant infrastructure and not expenditure of a recurrent nature relating to running costs such as staff wages and maintenance (this is consistent with the legislation establishing the Building Australia Fund);
- 2 Projects with an individual capital cost below \$100 million can be packaged together (and exceed \$100 million) where they relate to the same network or broader overarching programme. In such cases, it is the overall programme which is being assessed under the proposal;
- 3 Projects with a value less than \$100 million will be considered where:
  - they are primarily aimed at making better use of existing infrastructure, e.g. through demand management, and not the creation of new infrastructure; or
  - the project is innovative and flagship in that it is aimed at demonstrating a solution that has broader application. For these projects, information will need to be presented on:
    - how similar projects would be rolled out (in that jurisdiction or elsewhere) if the demonstration was successful, i.e. evidence of planning for a programme that builds upon a (presumably successful) demonstration project; and
    - how (and when) the proponent would evaluate the demonstration.

These criteria have been applied for this year, and will be applied in the future.

## Submissions Received

Infrastructure Australia received and assessed 59 new or updated project submissions. The submissions are listed in Appendix B.

Submissions were required to identify how the proposal relates to one or more of Infrastructure Australia's seven themes for action and to apply the Reform and Investment Framework. This framework emphasises the identification and consideration of initiatives and policy reform options to complement or substitute for 'build solutions'.<sup>14</sup>

Infrastructure Australia also engaged with prospective proponents, explaining the Reform and Investment Framework in some detail.

In a number of cases, the proponents of projects on the 2009 or 2010 Infrastructure Priority List have not provided further information on their proposals. In some cases, this is because projects have proceeded to delivery without funding assistance during the intervening period.

On-going project development by a proponent is important evidence that there is a material problem needing attention, and evidence that the proponent is willing to work collaboratively with others to find a solution. To maintain the currency and relevance of the Infrastructure Priority List, Infrastructure Australia will contact the proponents of projects where there has been no new information since the previous list, asking them for advice on the status of the project. Subject to the receipt and assessment of that advice, the inclusion of some projects on the list may be reviewed in the future.

The quality of information and analysis supporting the submissions received in 2010 was broadly equivalent to that which supported submissions in 2009 and 2008. This is disappointing.

<sup>14</sup> Guidance material on applying the Framework is available at <http://www.infrastructureaustralia.gov.au/publications.aspx>



As noted in last year's report, more robust long-term plans and the exploration of innovative and alternative means of addressing infrastructure problems (including demand management, pricing and other 'reform-focused' initiatives rather than 'build' initiatives) are required to ensure infrastructure decisions adequately meet future challenges.

It is disappointing that more projects have not 'moved to the right' on the Infrastructure Priority List, and particularly disappointing that only one new project has moved into the 'Ready to Proceed' category. Infrastructure Australia has reflected on whether it is 'setting the bar too high'. Our conclusion is 'No', based on the fact that:

- projects that have previously been either recommended by Infrastructure Australia have experienced difficulties in delivery (e.g. Regional Rail Link in Melbourne) or, where funding commitments have been made by government (e.g. Oakajee and Darwin ports), are still under development;
- a number of projects not recommended as 'Ready to Proceed' have encountered significant difficulty (e.g. Sydney's CBD Metro), as a result of the projects failing to clear basic hurdles;
- the fiscal constraints facing all governments strengthen the case for rigorous project evaluation (the 'red books' provided by Treasury and the Department of Finance and Deregulation to the incoming Australian Government after the August 2010 election have made clear that they too see the need for increasing discipline in project evaluation).

There continue to be examples where a lack of rigour leads to poor outcomes.

Nevertheless, there is some progress. In a few cases, the Reform and Investment Framework has been applied well, and is starting to shape the nature of the proposals being submitted to Infrastructure Australia.

## Infrastructure Australia's 2011 Infrastructure Priority List

Infrastructure Australia's 2011 Infrastructure Priority List is set out in Appendix C. A brief description of each project in the priority list is included in Appendix D.

Building on the priorities in 2010, the list includes proposals for reform and strategy development, aimed at improving infrastructure planning, utilisation and investment decisions. These are expected to bring about economic, social and environmental benefits with significantly less costs than simply investing in new capacity.

These priorities address a nationally significant issue or problem. However, acknowledging that initiatives are in varying stages of development, they continue to be categorised as: ready to proceed; threshold; real potential; or early stage.

### 'Ready To Proceed' Projects

The Australian National Audit Office has recommended that, in developing future infrastructure priority lists, Infrastructure Australia provide advice on:

- the relative priority of 'Ready to Proceed' projects, and suggested conditions on any Australian Government funding; and
- projects or initiatives which are recommended for project development funding (thereby assisting governments in preparing well-conceived business cases for potential future investments).

By themselves, Benefit Cost Ratios (even including so-called ‘Wider Economic Benefits’) are an insufficient basis for prioritising the ‘Ready to Proceed’ projects. Benefit Cost Ratios are an important tool in project evaluation; but they need to be complemented by a consideration of a project’s ‘strategic fit’, i.e. whether a project is likely to align in a balanced manner with the overall goals and objectives of governments and the wider community.

In reaching its recommendations, Infrastructure Australia has considered the projects’ Benefit Cost Ratios and strategic fit. There is inevitably a degree of judgement in applying prioritisation processes, especially when applied to the breadth and scale of projects being considered by Infrastructure Australia.

Strategic fit assessments clearly fall into this category, but so too does the economic appraisal assessment. Economic appraisals are highly influenced by their inputs and the robustness of the appraisal methodology. Our judgment at this time is that it would be a mistake to conclude that the appraisals (and therefore the Benefit Cost Ratios) can be judged to fine degrees of differentiation.

Accordingly, the ‘Ready to Proceed’ projects have been prioritised in bands rather than on a project by project basis.

The recommended order of ‘Ready to Proceed’ projects is shown below. Details of the rationale for this order, including each project’s Benefit Cost Ratio<sup>15</sup> and summary comment about the project’s strategic fit, as well as suggested funding conditions are set out in Appendix E.

### Recommended Priority Order of ‘Ready to Proceed’ Projects

Priority Band	Project
1	<ul style="list-style-type: none"> <li>National Managed Motorways Program</li> <li>Integrated Transit Corridor Development – Route 86</li> </ul>
2	<ul style="list-style-type: none"> <li>Melbourne Metro One</li> </ul>
3	<ul style="list-style-type: none"> <li>Pacific Highway Upgrade</li> <li>Adelaide Rail Freight – Goodwood and Torrens Junctions</li> <li>Federal Highway Link to Monaro Highway – Majura Parkway</li> </ul>

### Project Development Funding

Project development funding can play a key role in shaping the projects presented in future years for potential inclusion on the Infrastructure Priority List.

The key consideration in making recommendations for project development funding is whether the projects show 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 is likely to become critical.

<sup>15</sup> 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.

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 which are 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, e.g. 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 make an appropriate contribution to project development costs. The reasons for Infrastructure Australia's identification of the projects below, and suggestions for funding conditions are set out in Appendix E.

## Projects Recommended for Project Development Funding

Project
Cross River Rail
Integrating Sydney's motorway network – network charging
National Managed Motorways Program
Freight access to Port Botany and Kingsford Smith Airport
Western Interstate Freight Terminal
Freight access to Port of Melbourne
Transforming the Pilbara: Pilbara Cities

## Reform and Investment Framework

Stage	Description	Components Required	Rationale
1. Goal Definition	<p>Definition of the fundamental economic, environmental and social goals that Australia seeks to achieve. For example:</p> <ul style="list-style-type: none"> <li>sustained economic growth and increased productivity;</li> <li>lower carbon emissions and pollution; and</li> <li>greater social amenity and improved quality of life.</li> </ul>	<ul style="list-style-type: none"> <li>Formalised, comprehensive, and agreed goals, objectives, targets and indicators.</li> <li>Specific and quantified goals, objectives and targets.</li> <li>Outline how the initiative fits within existing infrastructure plans.</li> <li>Outline of how the goals and objectives align with those of other parties (e.g.: National – including Infrastructure Australia’s Strategic Priorities, State/Territory, Regional, Local level and across sectors.</li> </ul>	Goals are needed against which problems and solutions can be assessed.
2. Problem Identification	<p>Objective, specific, evidence-based, and data rich identification of problems of infrastructure systems and networks that may hinder the achievement of those economic, environmental and social goals.</p>	<ul style="list-style-type: none"> <li>Situation Assessment – a review and analysis of the current status.</li> <li>Scenario Assessment – a review and analysis of the future status that identifies: <ul style="list-style-type: none"> <li>Driver and trends of the current and future situation</li> <li>Base-case using the current trends (certainties)</li> <li>Alternative futures using future trends (uncertainties)</li> </ul> </li> <li>A list of Problem Statements that can be accurately defined and quantified.</li> </ul>	Specificity regarding inadequacies is essential in order to take targeted and therefore more effective action.
3. Problem Assessment	<p>Objective and quantified appraisal of the economic, environmental and social costs of those deficiencies, so that the most damaging deficiencies can be identified and prioritised.</p>	<ul style="list-style-type: none"> <li>Accurate and objective assessment of the economic/environmental/ social impacts of those problems.</li> <li>Priorities identified which reflect the scale of impacts.</li> </ul>	Understanding the costs/ impact of deficiencies allows the worst problems to be identified and prioritised.

Stage	Description	Components Required	Rationale
4. Problem Analysis	Objective policy and economic analysis of why these deficiencies exist – i.e. what is the underlying cause (depending on the sector, reasons could include market failure, government failure, capital restrictions, etc). This should include an assessment of non-infrastructure reasons for the problem – e.g. land use patterns, peak demand; or education/ business hours.	<ul style="list-style-type: none"> <li>For each deficiency, analysis of why those problems have developed.</li> <li>Covers both immediate and underlying causes (e.g. not just 'lack of investment', but causes of underinvestment, e.g. regulatory environment).</li> </ul>	Understanding the causes allows effective and targeted solutions to be created. Infrastructure is often not the only cause of problems.
5. Option Generation	Development of a full range of interventions that address the issue in the domains of: <ul style="list-style-type: none"> <li>reform (regulation, legislation, governance); and</li> <li>investment.</li> </ul>	Identify the full range of Options for each problem from the domains of: <ul style="list-style-type: none"> <li>reform – e.g. independent pricing, regulation, approvals, coordination; and</li> <li>investment – e.g. better use through demand management, capacity increases.</li> </ul>	Identification of a broad range of options – across reform and investment areas – rather than relying on early judgements or pre-conceived ideas – is more likely to identify the best Solution or package of Solutions.
6. Option Assessment	Strategic analysis and cost-benefit analysis to assess those options. The appraisal should incorporate the full range of economic, environmental and social impacts (including agglomeration and trade impacts, carbon impacts, noise, and social amenity) so that the impact on all goals is measured and understood.	Qualitative and quantitative analysis including: <ul style="list-style-type: none"> <li>Strategic analysis – using high-level profiling assessment – to assist in the analysis of a large number of Options; and</li> <li>Rapid analysis – using a high-level Appraisal assessment – such as a Rapid Benefit Cost Analysis – to assist in the analysis of a smaller of Options.</li> </ul>	An understanding of the strategic and economic value along with the risks and uncertainties in delivery – is essential to understand how the Options or a package of Options will achieve the fundamental goals outlined in Stage 1.
7. Solution Prioritisation	Identification of policy and investment priorities from the list of solutions, on an objective basis that gives primacy to the Benefit Cost Ratio of initiatives, but is balanced by considerations such as strategic fit and deliverability (including risk and affordability).	<ul style="list-style-type: none"> <li>A structured and objective evaluation framework – that reflects the primacy of Cost Benefit Analysis along side of the strategic value and deliverability risk – is used to make decisions on the long-term infrastructure pipeline.</li> <li>A review of the Solution is made against the fundamental goals/ problem identification.</li> </ul>	Benefit Cost Ratios provide the best available objective evidence as to how well solutions will impact on the goals outlined in Stage 1 – but are not the whole story.

# Appendix B

## Submissions to Infrastructure Australia

The 59 project submissions presented to Infrastructure Australia this year are listed below. The projects are listed under the relevant Infrastructure Australia theme, and given the title used by the proponent.

The list includes all proposals that were submitted to Infrastructure Australia, whether or not the relevant submission was a substantial document (or set of documents), a brief outline of a concept, or simply a reference in a covering letter to the status of a project, e.g. a project that may have been included in last year's Infrastructure Priority List.

New proposals are marked with an asterisk. The other projects in the list are updates of proposals previously submitted to Infrastructure Australia. The proponents of some projects that had been included in the 2010 Infrastructure Priority List did not provide any updated information, or a more developed proposal.

Following the change of government at the election in late 2010, the Victorian Government advised Infrastructure Australia that it was reviewing the strategic plans and infrastructure proposals of the previous government, and that, as a result, it would present proposals progressively for Infrastructure Australia's consideration as the results of its own reviews were advanced. As at 6 June 2011, no new or revised project submissions have been presented by the Victorian Government.

Similarly, following the change of government at the March 2011 New South Wales election, Infrastructure Australia wrote to the new government inviting it to advise whether: (a) it still wished Infrastructure Australia to consider the proposals submitted by the previous government in late 2010; and (b) whether there were any new proposals it wished Infrastructure Australia to consider. As at 6 June 2011, the NSW Government was still reviewing Infrastructure Australia's request.

Submission Title	Proponent
<b>Transforming Our Cities</b>	
North East Transport Corridor – Northbourne Avenue Transitway*	ACT Government
Parramatta to Epping Rail Link* ∞	NSW Government
North West Rail Hills District Line* ∞	NSW Government
Capacity Improvements and Expansion of the Metropolitan Commuter Rail Network*	NSW Government
Cross River Rail	Queensland Government

Submission Title	Proponent
Eastern Busway – Stages 2 and 3	Queensland Government
Darlington Transport Project	South Australian Government
Hobart: a world class, liveable, waterfront city	Tasmanian Government
Stirling City Centre*	Western Australian Government and City of Stirling City Centre Alliance
National Managed Motorways Programme – National submission	NSW, Qld, SA, Vic and WA Governments
Nine Point Transport Plan – A Sustainable Alternative to Expanding the M5 Motorway*	Eco Transit Sydney
C-Page	Nesh Pty Ltd
North West Rail System*	Ian and Joan King (Sydney)
Strathfield Town Centre Bus/Rail Interchange *	Strathfield Council (NSW)
Sunshine Coast Airport	Sunshine Coast Regional Council
The Green Loop Public Transport Corridor	Sydney City Council
<b>Adaptable and Secure Water Supplies</b>	
Installation of Low Flow Bypasses in the Mount Lofty Ranges	South Australian Government
An Innovation Strategy for Tasmania: Focus on Food Bowl Concept – Rural Water Infrastructure	Tasmanian Government
Water and Sewerage Reform in Tasmania	Tasmanian Government
Brunswick Valley Dam*	Southern Cross Water and Infrastructure Corporation Pty Ltd
<b>Creation of a True National Energy Market</b>	
Mt Isa to Townsville Transmission Line*	Queensland Government/ Copperstring
Energy Market Regulatory Reform	South Australian Government
Mid West Energy (330kV Line and Renewable Link)	Western Australian Government

Submission Title	Proponent
<b>Competitive International Gateways</b>	
Darwin East Arm Port Expansion	Northern Territory Government
Marine Supply Base* <sup>ooo</sup>	Northern Territory Government
Container Freight Improvement Strategy*	NSW Government
M4 Extension	NSW Government
M5 East Upgrade	NSW Government
Abbot Point Multi Purpose Cargo Facility	Queensland Government
Gateway Motorway North	Queensland Government
Port of Brisbane Motorway Upgrade	Queensland Government
Eyre Peninsula Port Proposals	South Australian Government
Northern Connector – Adelaide	South Australian Government
Bell Bay Intermodal Expansion	Tasmanian Government
Gateway WA – Perth Airport and Freight Access	Western Australian Government
Oakajee Port	Western Australian Government
Pilbara Cities	Western Australian Government
Port Hedland Inner Harbour Capacity Enhancements	Western Australian Government
South West (Bunbury) Infrastructure	Western Australian Government
<b>A National Freight Network</b>	
Federal Highway Link to Monaro Highway – Majura Parkway	ACT Government
F3 – M2 Link – Sydney	NSW Government
Northern Sydney Freight Corridor Program	NSW Government
Pacific Highway Corridor Upgrades	NSW Government
Bruce Highway Corridor Upgrades	Queensland Government



Submission Title	Proponent
Freight Connections to State Development Areas*	Queensland Government
Mount Isa – Townsville Rail Corridor (including Eastern Access Corridor)	Queensland Government
Pacific Motorway Upgrade	Queensland Government
Toowoomba Second Range Crossing	Queensland Government
Warrego Highway Upgrade (Helidon to Morvan) – Stage 1*	Queensland Government
Adelaide Rail Freight – Goodwood and Torrens Junctions	South Australian Government
Trans Regional Amalgamated Infrastructure Network Project (TRAIN)	Nation Building Australia Pty Ltd
A Plan to Upgrade the Warialda – Texas Road*	Australian Rural Road Group, including Gwydir and Inverell Shire Councils
Shoalwater Bay Training Area Access Routes*	Rockhampton Regional Council
Wodonga ‘Logic’ Freight Services Centre*	Wodonga City Council
<b>National Broadband Network</b>	
No proposals submitted against this theme.	
<b>Essential Indigenous Infrastructure</b>	
‘Bridging the Gap’ – Advancing Economic and Social Reform by Improving the NT’s Remote Road Network	Northern Territory Government
Infrastructure Community Essential Infrastructure Program Priorities 2011-12 to 2013-14*	Northern Territory Government
Roads Associated with Indigenous Communities	Queensland Government
Closing the Gap and Making Connections – Win/Win for Communities in Central Desert*	Shire of Wiluna (WA)
<b>Other</b>	
Newcastle City Centre Renewal*	NSW Land and Property Management Authority

\* New proposal this year.

°° The Infrastructure Coordinator is currently awaiting further information on these proposals.

°°° Received after assessment of submissions had been largely completed. Proposal to be reviewed in next update of the Infrastructure Priority List.

# Appendix C

## 2011 Infrastructure Priority List

	Early Stage	Real Potential	Threshold	Ready to Proceed
Transforming Our Cities	<p>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.</p> <p>Capacity Improvements and Expansion of the Metropolitan Commuter Rail Network (NSW; \$795m)</p> <p>Melton Rail Line Duplication and Electrification (Vic, \$1,300m)</p> <p>Gold Coast Rail (Qld, SE Qld Mayors; \$2,875m)</p> <p>Hobart: A World Class, Liveable, Waterfront City (Tas; \$120m)</p>	<p>Initiatives in this category clearly address a nationally significant issue or problem and, there has been a considerable amount of analysis of potential solutions.</p> <p><i>Integrating Sydney's Motorway Network</i></p> <p>Melbourne Metro Stage 2 (Vic; tbc)</p>	<p>Initiatives in this category have strong strategic and economic merit, and are only not ready to proceed due to a small number of outstanding issues.</p> <p><i>Support for commitment to urban plans for all cities by 2012</i></p> <p><i>Jurisdictions to satisfy the Council of Australian Governments criteria in their urban plans</i></p> <p><i>Jurisdictions to commit to common standards for public transport assessment</i></p> <p>Cross River Rail (Qld; \$7,731m)</p> <p>Eastern Busway (Stages 2b and 3) (Qld; \$825m)</p>	<p>Initiatives in this category meet all of Infrastructure Australia's criteria.</p> <p><i>National Managed Motorway Program: NSW, Victorian, South Australian and Western Australian proposals (Qld, NSW, SA, WA, Vic; c.\$6,000m; BCR varies by project c. 3.0:10.0)</i></p> <p><i>Integrated Transit Corridor Development -Route 86 Demonstration, Project (Vic; BCR = 4.0; capex = \$30m)</i></p> <p>Melbourne Metro Stage 1 (Vic, BCR = 1.3; capex = \$4,900m)</p>
Adaptable and Secure Water Supplies	<p>An Innovation Strategy for Tasmania: Focus on Food Bowl Concept (Tas; \$tbc)</p>	<p>Tasmanian Water and Sewerage Reform (Tas; \$1,000m)</p>		<p><i>Infrastructure Australia proposes reforms around planning for water security, independent pricing, competition in bulk supply and consumer choice over levels of reliability</i></p>
A True National Energy Market		<p>Mount Isa to Townsville Transmission Line (Copperstring; \$1,500m)</p> <p>Mid-West Energy – Stage 2 (WA; \$280m)</p>	<p><i>Infrastructure Australia supports proposed reforms to regulatory provisions regarding connection of remote renewable energy generation and electricity transmission connections between states.</i></p>	
Competitive International Gateways	<p>Port Hedland Inner Harbour – Capacity Enhancements (WA; NWIOA; Hancock; \$3,400m)</p> <p>Transforming the Pilbara: Pilbara Cities (WA; \$2,900m)</p> <p>Container Freight Improvement Strategy (NSW; \$3,870m)</p> <p>Port of Hastings (incl. Peninsula Link rail freight corridor) (Vic; \$tbc)</p>	<p>Freight Access to Port Botany and Kingsford Smith Airport – M5 East (NSW; \$4,500m – \$2010)</p> <p>Freight Access to Port of Melbourne – Westlink (Vic; \$5,000m)</p> <p>Gateway WA – Perth Airport and Freight Access (WA; \$955m)</p> <p>Abbot Point Multi Purpose Harbour (Qld; \$3,300m)</p> <p>Smart Port ICT (Vic; \$16m)</p> <p>South West (Bunbury) Infrastructure (WA); \$605m)</p>	<p>draft National Ports Strategy – 30 year plans for ports and landside connections</p> <p>Moorebank Intermodal Terminal (Comm./NSW; \$tbc)</p> <p>Oakajee Port (potential equity injection) (WA; c.\$4,500m)</p> <p>Darwin East Arm Port Expansion (potential equity injection) (NT; \$336m)</p>	

	Early Stage	Real Potential	Threshold	Ready to Proceed
	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.	Initiatives in this category clearly address a nationally significant issue or problem and, there has been a considerable amount of analysis of potential solutions.	Initiatives in this category have strong strategic and economic merit, and are only not ready to proceed due to a small number of outstanding issues.	Initiatives in this category meet all of Infrastructure Australia's criteria.
Competitive International Gateways (continued)	<p>Freight Access to Port Botany and Kingsford Smith Airport – M4 East (NSW; \$9,100m – \$2008)</p> <p>Eyre Peninsula Port Proposals (SA, Centrex; \$tbc)</p>	<p>Freight Access to Port of Brisbane Airport – Gateway Motorway North (Qld; \$1,159m – \$2,710m)</p> <p>Freight Access to Port of Adelaide – Northern Connector (SA; \$1,191m)</p> <p>Melbourne International Freight Terminal (Vic; \$260m)</p> <p>Bell Bay Intermodal Expansion Project (Tas; \$150m)</p>		
National Freight Network	<p>Northern Sydney Road Freight Access – F3-M2 (NSW; \$4,750m – \$2008)</p> <p>Australian Digital Train Control System (Australian Railways Association; \$20m)</p> <p>Mount Isa – Townsville Rail Corridor Upgrade (QLD; \$tbc)</p> <p>Bruce Highway Corridor Upgrades (QLD; \$tbc)</p> <p>Transcontinental Rail Link – Mildura to Menindee (Mildura Development Corporation; \$400m)</p>	<p>Western Interstate Freight Terminal (Vic; \$2,314m)</p> <p>North South Rail Freight Corridors (including Northern Sydney Freight) \$n/a</p> <p>Advanced Train Management System (Australian Rail Track Corporation; \$500m)</p> <p>East West Rail Freight Corridor (Australian Rail Track Corporation; \$n/a)</p> <p>Green Triangle Freight Transport Project (SA/Vic; \$340m)</p>	<p>draft National Land Freight Strategy</p>	<p>Pacific Highway Corridor Upgrades (NSW, BCR = 1.5; capex = \$7,600m – \$2010)</p> <p>Adelaide Rail Freight – Goodwood and Torrens Junction (SA, BCR = 1.3; capex = \$418m)</p> <p>Federal Highway Link to Monaro Highway – Majura Parkway (ACT, BCR = 3.3; capex = \$288m)</p>
A National Broadband Network				National Broadband Network
Essential Indigenous Infrastructure				Submissions regarding indigenous infrastructure are being further considered by Infrastructure Australia's Indigenous Infrastructure Sub-Committee
Total capex	\$29,530m	\$24,621m	\$13,392m	\$19,236m
<b>Total estimated Infrastructure Priority List capital costs: \$86,779m</b>				

(1) Each project in the list includes the name of the project proponent(s), the project's estimated capital cost, and, for 'ready to proceed' projects, estimated Benefit Cost Ratio (BCR). Excluding wider economic benefits.

(2) Unless stated otherwise, the capital cost and the BCR are those estimated by the proponent. Costs are expressed in outturn dollars, unless a 'real' cost estimate has been provided by the proponent, in which case the base year for the 'real' estimate is provided.

(3) See the project summaries at Appendix D for an explanation of proponent acronyms.

(4) Potential Private Sector Involvement – Many publicly driven projects could be structured to be part-supported or enhanced by private investment, and most privately sponsored projects could be made certain and potentially enhanced by government funding and/or regulation and/or customer support. The opportunity for user pay principles is particularly relevant for projects in the telecommunications, energy and water sectors, as well as ports, road and rail freight and urban motorways in the transport sector.

# Appendix D

## Description of Projects in the 2011 Infrastructure Priority List

The following provides a brief description of investment priorities, listed under each of Infrastructure Australia's themes. The projects are shown in priority order, from 'Ready to Proceed' to 'Early Stage'. Proponents are shown in brackets. Unless stated otherwise, project costs are 'outturn' estimates provided by the proponent.\*

### Priorities under the Transforming our Cities Theme

#### Integrated Transit Corridor Development – Route 86 Demonstration Project – (Victoria)

Congestion on Melbourne's network of roads and trams, particularly the highly congested inner networks, is adversely affecting the reliability of the tram system and increasing commuter travel times. The Route 86 project aims to demonstrate how to maximise the use of Melbourne's tram routes with best practice integrated transport and land-use planning.

The demonstration project in High Street, Darebin (north of the CBD) is an important element of Stage 2 of Victoria's Integrated Transit Corridor Development Program that involves initiatives to intensify residential development along tram lines as well as measures to improve the speed and reliability of the tram service. The demonstration project will provide feedback for the business case for Stage 3, which involves rolling out the measures to other parts of the tram network.

The demonstration project along the 6.8 kilometre section of the Route 86 tram line includes:

- accessible stops to integrate with urban form, providing *Disability Discrimination Act* compliant level access;
- traffic management measures and the introduction of a 40kph 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.

An initial section of the project is now under construction.

Section B of the project is estimated to cost \$30 million.

\* Victorian projects nominated by the former Victorian Government are being reviewed alongside the new Government's priorities. Cost estimates for Victorian projects are as submitted to Infrastructure Australia in 2009.

### National Managed Motorways Program – (Queensland, NSW, South Australian, Victorian, and Western Australia Governments)

The managed motorways initiative is aimed at improving the efficient functioning of Australia's capital cities and major urban areas via the construction and retrofitting of intelligent transport systems along with a pro-active approach to the operations and performance management. Such intelligent transport system tools include:

- Primary tools:
  - control systems, variable speed limits (VSL), lane use management systems, and ramp signalling systems;
  - hard shoulder running.
- Secondary tools:
  - incident management – installation of closed circuit television cameras at strategic locations, road weather monitoring stations, help (emergency) telephones;
  - traveller information systems through dynamic message signs, including variable message signs, and travel time signs.
- Intelligent Transport System foundation measures:
  - pits and ducts for telecommunications network;
  - communications backbone; and
  - vehicle detectors (for example, in pavement loops).
- Complementary traffic engineering works for queue storage and management at key bottlenecks.

The \$4 billion suite of proposals includes applying a range of these measures to motorways in South East Queensland, greater Sydney, Melbourne, Adelaide and Perth.

The Queensland managed motorways proposal was rated as a Threshold project in Infrastructure Australia's June 2010 report, with proposals from other States rated as being of Real Potential.

### Melbourne Metro Stage 1 – (Victoria)

Melbourne Metro Stage 1 aims to benefit the entire metropolitan rail network by creating more rail capacity in the inner-city to relieve pressure of existing congestion, boost the number of suburban services across the network to accommodate projected growth.

Melbourne Metro Stage 1 proposes to deliver:

- two track 8 kilometre rail tunnel under inner Melbourne aimed at allowing a segregated 'metro-style' rail service to run from Sunbury (and Melton, once electrification is completed) to St Kilda Road via the CBD and will create additional capacity for more than 14 trains per hour in the peaks;
- five new train stations including underground stops connecting to Melbourne Central and Flinders Street stations;
- enabling works to support a major urban renewal precinct centred around the Arden metro station; and
- associated service planning and smaller scale infrastructure changes.

The project was identified as a 'Priority' project in Infrastructure Australia's May 2009 report. Detailed feasibility studies (funded with a \$40 million Australian Government grant) are well progressed. The estimated cost of the project is \$4.9 billion.

### Cross River Rail – (Queensland Government)

Cross River Rail is aimed at increasing rail capacity to meet this projected demand while unlocking the suburban heavy rail network and give the region more train services, more often. It aims to provide the inner city rail infrastructure necessary to transform the rail network and provide capacity in key locations to enable more freight to be moved by rail on the existing surface rail network.

The project consists of:

- 9.8 kilometres of twin single track tunnels between Yeerongpilly train station and Victoria Park;
- new underground stations at lower Albert Street, Roma Street, Woolloongabba and Boggo Road Urban Village;
- new surface stations at Yeerongpilly and RNA/Exhibition;
- minor station upgrades at Moorooka and Rocklea;
- five kilometres of additional surface tracks from the southern tunnel portal at Yeerongpilly to south of Salisbury (includes 4 kilometres of additional freight track, three kilometres of two additional Cross River Rail tracks); and
- 2.7 kilometres of twin additional surface tracks on the Exhibition rail loop.

The project has the potential to support implementation of the Queensland Government's and Brisbane City Council's land use plans.

The project is estimated to cost around \$7.7 billion. The Australian Government has committed \$20 million and the Queensland Government \$5 million, towards detailed feasibility studies, an environmental impact assessment process and a detailed business case. These investigations are scheduled to be completed in 2011.

### Eastern Busway (Stages 2b and 3) – (Queensland Government)

The Eastern Busway aims to provide a dedicated bus-only roadway between the University of Queensland and Capalaba in Brisbane's south-eastern suburbs, with connections to the inner city busway network. Stage 1, from the University to Buranda, is now complete, and Stage 2a is under construction. Future stages include Stage 2b, Stage 3, and the remaining parts of the corridor between Bennetts Road and Scrub Road.

The proposal to Infrastructure Australia is for:

- Stage 2b (Main Avenue, Coorparoo to Bennetts Road, Coorparoo):
  - combination of driven and cut and cover tunnel beneath Old Cleveland Road;
  - sub-surface busway station at the Coorparoo Junction; and
  - at-grade busway station at Bennetts Road, Coorparoo;
- Stage 3 (transit lanes between Scrub Road, Carindale to Tilley Road, Chandler).

The projects are estimated to cost (Stage 2b) \$685 million and (Stage 3) \$140 million.

### Integrating Sydney's Motorway Network

Sydney's motorway network experiences considerable congestion, particularly during peak periods. The network has different ownership and pricing structures which limit its ability to operate efficiently.

Creating a single Sydney Motorway Network Company to operate the network could greatly improve the efficiency of the network and potentially generate a revenue source to fund public transport infrastructure or future motorway expansions.

### Melbourne Metro Stage 2 – (Victoria)

Melbourne Metro Stage 2 aims to provide substantial metropolitan and regional rail growth capacity and reliability for the Dandenong, Frankston and Sandringham lines.

The project is proposed to be delivered in two sections with:

- Section 1 being for capacity upgrades to the Dandenong line south of Caulfield, for which a program of works is currently being assessed; and
- Section 2 being a new tunnelled link connecting the proposed terminus of Melbourne Metro 1 to the Caulfield corridor.

Development work on the Melbourne Metro has identified synergies between the delivery of Stage 2 and Stage 1.

### Capacity Improvements and Expansion of the Metropolitan Commuter Rail Network – (New South Wales Government)

The Capacity Improvements and Expansion of Metropolitan Sydney Commuter Rail Network project is a suite of initiatives arising from the NSW Government 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 CBD 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 2nd 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 and Garfield Road, Riverstone.

### Hobart – A World Class, Liveable, Waterfront City (Tasmanian Government)

Hobart's Port precinct is in the process of undergoing significant transformation with the relocation of the Macquarie point rail yards providing an opportunity to revitalise the centre of Hobart and extend its economic base.

The Tasmanian Government has proposed a four stage project; with Stage 1 focussed on the further development of inner port and airport facilities to support the seagoing and airlink operations of Antarctic research programs. Subsequent stages would be focused on improve freight handling and lay-up capacity for larger vessels and revitalisation of the urban environment. The estimated capital cost of Stage 1 is \$70 million.

Stage 2 involves the remediation of the Macquarie Point railyards with an estimated capital cost of \$50 million. Stages three and four involve remediation of Macquarie Wharves Nos. 5 and 6.

### Gold Coast Heavy Rail Capacity Upgrades and Extension – (Queensland Government and South East Queensland Council of Mayors)

The Gold Coast Heavy Rail Capacity Upgrades and Extension project aims to reduce congestion on the heavily used Gold Coast Rail Line and extend the line to Coolangatta, with key linkages to Gold Coast Airport, the Gold Coast Rapid Transit project and the Pacific Motorway upgrade, and opportunities for medium density development along the corridor.

This proposal seeks to deliver:

- duplication of the existing line between Coomera and Helensvale;
- a third track from Kuraby to Kingston;
- a 17 kilometre extension from Varsity Lakes to Coolangatta Airport; and
- up to four new stations at Tallebudgera, Elanora, Tugun and Gold Coast Airport at Coolangatta

The project is estimated to cost around \$575 million for the capacity upgrades and \$2.3 billion for the extension to Coolangatta.

### Melton Rail Line Duplication and Electrification – (Victoria)

The population in the Melton area in western Melbourne has been growing strongly over recent years and is driving rapidly growing 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.

Melton Rail line duplication and electrification is aimed at improving the capacity, regularity and reliability of services in the western Melbourne's suburbs. This project proposes to deliver:

- 15 kilometres of track duplication and electrification between Sunshine and Melton, specifically;
  - duplicating the existing track between Deer Park West and Melton; and
  - electrifying tracks from Sunshine to Melton;
- providing new or upgraded stations along the corridor, including a new station at Toolern;
- providing new stabling and basic maintenance facilities in the vicinity of Melton; and
- additional passing loops between Melton and Ballarat.

The project is estimated to cost \$1.3 billion.



## Priorities under the Adaptable and Secure Water Supplies Theme

### An Innovation Strategy for Tasmania: Focus on Food Bowl Concept – (Tasmanian Government)

The Food Bowl Concept project aims to expand high value agriculture over the next decade using higher levels of irrigation, particularly in the North-West and North-East of the state and encourages and involves the private sector in timely and efficient capital investment in water supply and distribution through a public private partnership model. The program's delivery model ensures that operational expenditure for schemes constructed under this program will be fully financed through user charges.

Currently the first tranche of irrigation schemes, dams and pipelines are in planning and development. The Tasmanian Government has commenced planning to identify and prove further opportunities for a second tranche of irrigation infrastructure.

The first tranche of the water infrastructure program is estimated to cost \$400 million.

### Tasmanian Water and Sewerage Program – (Tasmanian Government)

Recently the Tasmanian Government introduced major reforms in its water and sewerage sector. These involve significant structural changes to the industry, with water and sewerage services now delivered by three local-government-owned regional water corporations and one common services corporation, replacing services previously delivered by 29 local councils and three former bulk water authorities. During the reform process it became apparent that almost \$1 billion would need to be invested in new and upgraded water and sewerage infrastructure in Tasmania.

The reform of Tasmania's water and sewerage sector aims to transform the sector and significantly raise health and environmental standards, and the quality of services, to many parts of the Tasmanian community.

This program is estimated to cost in the order of \$1 billion over ten years. Tasmania will fund the bulk of the program, but is seeking a further contribution to this investment.

## Priorities under the National Energy Grid Theme

### Mount Isa to Townsville Transmission Line – CopperString – (Queensland Government)

The emergence of Mount Isa, Townsville and Bowen as a triangle of mining, mineral processing and industrial development is expected to continue over the course of the next half century. Impeding further exploitation of mineral resources and the advancement of economic growth of the Northern Economic Triangle is the provision of competitively-priced power to North-West and North Queensland.

The Mt Isa-Townsville Transmission Line – the CopperString Project – aims to provide reliable and more competitively priced power to secure more value-adding projects and enhance the Northern Economic Triangle's attractiveness as an investment location. The project will provide opportunities for renewable energy projects along the proposed transmission line.

The project proposes the development of a regulated 1,100 kilometre high voltage transmission link which connects the Mt Isa to the National Electricity Market near Townsville. A private sector proponent, CopperString Pty Ltd, plans to undertake this development.

The project is estimated to cost around \$1.5 billion.

### Mid-West Energy – Stage 2 – (Western Australian Government)

This project seeks to connect the Geraldton area (including mines) to Western Australia's South West Interconnector System. The project would provide a new 330 kV 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 Stage 2 (MWEP2) proposes an extension of Stage 1's 330kV transmission line. Stage 1, which is proposed to be implemented by Western Power, runs from Pinjar (on Perth's northern outskirts) to Eneabba. Stage 2 is proposed to run from Eneabba to Moonyoonooka, just east of Geraldton which is the basis of the funding request in Infrastructure Australia.

The total cost of the Mid West Energy project is estimated at \$795 million – (includes an estimate of the cost of the connection asset to Karara Metals Limited's mine site):

- Cost of southern section – \$325 million; and
- Cost northern section: approximately \$280 million.

### Priorities under the International Gateways Theme

#### Moorebank Intermodal Terminal – (Australian and New South Wales Governments and private developers)

The Australian Government is currently conducting a feasibility study into the development of an intermodal terminal facility at Moorebank to cater for:

- the movement of port freight by rail from Port Botany to Moorebank to ease medium and long term road congestion on the M5 east of Moorebank; and
- provide a terminal for inter-State freight trains, thereby minimising prospective growth in freight demand on the nation's highways.

The Moorebank intermodal terminal is proposed for development on two sites, presently used for Defence purposes, with a total area of approximately 280 hectares. Elements of the proposed terminal complex comprise:

- a terminal focusing on inter-state and intra-state long trains;
- a terminal focusing on port-related freight;
- a rail line to connect the two terminals to the Southern Sydney Freight Line; and
- associated road improvements in the vicinity of the terminal.

### Oakajee Port Common-User Services – (Western Australian Government)

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 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.

The Common Use Infrastructure proposes to deliver a:

- 2 kilometre breakwater;
- dredged port channel, turning basin and navigation aids;
- provision for tug and pilot boat pens;
- port administration facilities;
- land based facilities and infrastructure including access roads; and
- utilities services these facilities.

The Common Use Infrastructure project is estimated to cost \$680 million. In the May 2009 budget, the Australian Government made provision for a possible \$339 million equity contribution to the project, pending recommendation of the project by Infrastructure Australia. The estimated capital cost for the overall Oakajee Port and Rail project is of the order of \$4.5 billion.

### Darwin East Arm Port Expansion – (Northern Territory Government)

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 has 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:

- 22 hectares of land reclamation;
- 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.

The project is estimated to cost \$336 million. In the May 2009 budget, the Australian Government made provision for a possible \$50 million equity contribution to the project, pending recommendation of the project by Infrastructure Australia.

### Freight Access to Port Botany and Kingsford Smith Airport – M5 East – (New South Wales Government)

Port Botany and Kingsford Smith Airport are important international gateways and have been experiencing increasing road congestion over recent years.

The NSW Government is proposing an expansion to the M5 East Motorway from Beverly Hills to Arncliffe, involving the duplication of the existing M5 East freeway to provide four lanes in each direction including:

- new twin two-lane westbound tunnels with entry and exit portals near the existing tunnel portals and converting the existing westbound tunnel to eastbound;
- retaining two lanes in each direction from the Marsh Street portals to General Holmes Drive (including to Port Botany);
- widening to four lanes in each direction from the Bexley Road portals to King Georges Road; and
- providing three lanes in each direction under King Georges Road.

The project is estimated to cost \$4.5 billion (\$2010).

### Freight Access to Port of Melbourne – Westlink – (Victoria)

Projected growth in traffic through the Port of Melbourne will place pressure on the efficiency of freight movements to and from the port. Westlink is a proposed road in inner Melbourne designed to facilitate better road freight access to the Port of Melbourne from the west. This would enable the continued growth of the Port of Melbourne and improve amenity in the suburbs around the port (e.g. Footscray). It would also serve the important secondary role of reducing the reliance on the West Gate Bridge and M1 corridor for cross-river, east-west traffic.

The two stage project includes:

Stage 1:

- an east-west road tunnel (approximately 2.5 kilometres long) between the Port of Melbourne (linking with Dynon and Footscray Roads) and West Footscray (Geelong and Sunshine Roads);
  - a new interchange in the port area connecting to Footscray Road and Dynon Road.
- Stage 2:
    - road connection between the Western Ring Road and West Footscray.

The project is estimated to cost \$5 billion.

### Gateway WA – Perth Airport and Freight Access – (Western Australian Government)

The Perth Airport and Kewdale Freight Precinct is the primary passenger and freight gateway of Western Australia. Efficient access for general traffic, public transport and freight is important for operation of the precinct. However, the performance of the Perth Airport and Kewdale Freight Precinct is being constrained by high levels of traffic congestion during peak periods.

The Gateway WA – the Perth Airport and Freight Access project aims to improve and secure efficient access to the airport by providing sufficient capacity to handle the expected growth in airport related transport demand.

The project includes:

- upgrade of Leach Highway between Orrong Rd and Tonkin Highway;
- upgrade of Tonkin Highway (Great Eastern Highway to Roe Highway) to a six lane freeway);
- a grade separated interchange at the intersection of Tonkin Highway and Horrie Miller Drive / Kewdale Road;

- upgrade the intersection of Roe Highway and Tonkin Highway to a full freeway to freeway interchange;
- a flyover / half diamond interchange at the intersection of Leach Highway and Abernethy Road; and
- upgrade of Orrong Road (from Leach Highway to Graham Farmer Freeway).

There may also be scope for the provision of a rail link with private project proponents and the establishment of an appropriate equity vehicle. Infrastructure Australia has been working with the Western Australian Government to advance its plans and develop a comprehensive and robust business case.

The estimated cost of the project has increased since last year, and is now estimated to cost \$955 million.

#### Melbourne International Freight Terminal – (Victoria)

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 to improve landside access.

The Melbourne International Freight Terminal has been proposed to improve handling of international shipping containers to ensure that landside supply chain efficiency is maintained and enhanced. The initiative is expected to contribute to the development of a national rail network, as it will enhance efficiency of the rail supply chain for urban freight movements. This initiative involves planning and development of a new freight terminal adjacent to Swanson Dock at the Port of Melbourne. The project is estimated to cost \$260m.

#### Bell Bay Intermodal Expansion Project – (Tasmanian Government)

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. The proposed port expansion consists of:

- dredging and reclamation of land;
- construction of new berths and loading facilities including 'hardstand' areas;
- re-development of existing berths; and
- relocation of a rail line.

The estimated project cost is \$150 million.

#### Abbot Point Multi Purpose Harbour – (Queensland Government)

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 and bulk minerals export and related industrial activity, goods importation.

The development of this hub centres around the a stage port expansion through the creation of a Multi-Cargo Facility (MCF) – a man-made, sheltered harbour capable of accommodating multiple trade products and able to be built in stages.

The scope of Stage 1 includes:

- 1 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. Decisions made in the next 12 months will determine the long-term scope of development at Abbot Point.

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

#### Freight Access to Port of Brisbane and Brisbane Airport – Gateway Upgrade North – (Queensland Government)

Brisbane's current road network is showing increasing levels of congestion. Road congestion to the Port via the Gateway Motorway has been at saturation levels for several years. 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 will greatly improve road freight connectivity between key northern industrial and logistics centres and the Port precinct.

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

widening the existing motorway from four lanes to six between Nudgee Road and the Deagon Deviation;

- development of an interchange at the Gateway Motorway/Deagon Deviation connection;
- providing grade-separated interchange improvements at Nudgee Road, Sandgate Road, Depot Road and Bicentennial Drive;
- widened bridges at Bicentennial Drive, Depot Road (southbound) and Nundah Creek; and
- rehabilitation of existing four-lane pavements between Deagon Deviation and the Bruce Highway a dedicated bikeway facility alongside the motorway corridor.

The project is estimated to cost \$1.167 billion.

#### Smart Port ICT – (Victoria)

Currently the international maritime sector averages between 27 and 30 parties for each import/export transaction, with an average of 40 documents per transaction resulting inefficient processes, duplication of resources and information and delays at points in the supply chain.

The Smart Port ICT project aims to coordinate a national approach (using international standards) to the development of ICT systems including governance structures, processes, electronic information and systems that allow a national approach to improving international containerised cargo movement throughout Australia, principally through streamlining information flows.

The project is estimated to cost \$16 million.

### South West (Bunbury) Infrastructure – (Western Australian Government)

The road, rail and port upgrades at Bunbury are suite of projects designed to address emerging shortfalls in the capacity of the existing transport and export infrastructure in the region. By securing marine access to southwest Western Australia and facilitating a better layout of the port and transport links, a whole of supply chain improvement can be realised.

Infrastructure Australia received two submissions from the WA Government and the Bunbury Wellington Alliance, Bunbury Port Authority and the South West Development Commission for a range for the construction or upgrade of a range of individual infrastructure projects being:

- 22 kilometre duplication of the rail line between Brunswick Junction and Bunbury Port;
- upgrade to the capacity of the rail line between Brunswick Junction and Collie;
- construction of a rail spur line to Kemerton;
- refurbishment of the Greenbushes rail line;
- diversion of the Preston River to allow for port expansion;
- upgrading the Coalfields Highway;
- Port Access Road (Stage 2);
- the Bunbury Outer Ring Road being a controlled-access four-lane dual carriageway highway; and
- Eelup Rotary.

The duplication of the rail line between Brunswick Junction and Bunbury Port is estimated at \$63 million; with the remaining works estimated at \$605 million.

### Freight Access to Port of Adelaide – Northern Connector – (South Australian Government)

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

- 30.9 kilometre grade separated, single-track freight rail corridor between Virginia, Dry Creek and Port Adelaide and consisting of a new 24.7 kilometre north-south link for Perth to Melbourne freight trains;
- twin two kilometre passing loops;
- removal of up to 12 existing railway crossings;
- 15.6 kilometre eight lane (four lanes in each direction) Northern Connector road corridor joining the Northern Expressway to the Port River Expressway;
- overpass connections across the expressway;
- entry to the expressway via interchanges; and
- shared use path for cyclists and pedestrians.

The project is estimated to cost \$1.12 billion.

### Port Hedland Inner Harbour Capacity Enhancements – (Western Australian Government, NWIOA, Hancock)

Mining, processing and infrastructure industries in the Pilbara are rapidly expanding. It is important that capacity is made available to cater for the demand to meet the Pilbara region's growth potential, which in turn will create employment and strengthen economic growth. There are no other ports that serve the East Pilbara mines.

The Port Hedland Inner Harbour Capacity Enhancements, proposed by the West Australian Government, aim 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
- inner harbour berths.

The project is estimated to cost between \$500 million and \$1 billion.

A number of additional submissions have been received relating to 'common user' infrastructure at Port Hedland. The North West Iron Ore Alliance (NWIOA) has brought forward a proposal relating to berth development, associated infrastructure and dredging of South West Creek at the Port, estimated to cost \$2.4 billion. Hancock Prospecting (Hancock) has brought forward proposals relating to main channel deepening and dredging of South West Creek, two berths, rail unloading, stockpiling and handling facilities at the Port.

### Transforming the Pilbara – Pilbara Cities – (Western Australian Government)

The Pilbara region of Western Australia plays an important role in the economic development of the nation and is a principal driver of Western Australia's growth.

The Pilbara has been experiencing rapid economic growth in recent times and this is expected to continue. 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, including:

- airport upgrades;
- upgrading of the water and wastewater infrastructure;
- improvement of communication infrastructure;
- creation of serviced land (connection to wastewater, water, energy);
- purpose-built accommodation units; and
- marina developments.

The program is estimated to cost \$2.9 billion.



### Container Freight Improvement Strategy – (NSW Government)

The proposal aims to increase dedicated rail and terminal capacity for port related container movements in Sydney. The key elements of the proposal are:

- Stage 1 involves duplicating the Botany goods line, replacement of a level crossing, and corridor protection for a new western Sydney freight line (broadly from the existing terminal at Chullora to a proposed intermodal terminal site in Western Sydney); and
- Stage 2 is construction of a western Sydney freight line.

The project cost is estimated by the proponent to be \$3,870 million (\$2010), including \$870 million for Stage 1.

### Port of Hastings Development – (Victoria)

As Port of Melbourne throughput grows the port will gradually become more constrained which is likely to gradually affect 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 the project's planning and business case investigations for Stage 1, estimated to cost \$80 million. Planning work to date has focussed on corridor options which connect Hastings to the State and interstate rail freight networks.

### Freight Access to Port Botany and Kingsford Smith Airport – M4 Extension – (New South Wales Government)

The M4 Motorway extension project, from the eastern end of the Western Freeway (M4) at North Strathfield to the western outskirts of the Sydney CBD and the road network near Sydney Airport, proposes to include:

- widening the existing motorway from Pitt Street to four lanes in each direction (additional one lane each way) utilising the existing wide median and viaducts;
- duplication of the motorway from Homebush Bay Drive to Concord Road;
- a dual three lane tube tunnel from North Strathfield with ramp connections to the City West Link;
- a surface motorway link of dual carriageway, 3 lanes in each direction, from south of Campbell Road to the road network around Sydney Airport;
- connection to roads near Sydney Airport;
- widening of Airport Drive to 3 lanes in each direction; and
- northern motorway tunnel connecting Victoria Road near Gladesville Bridge to the main tunnel in the Leichhardt area.

The southern part of the route would overlay with the proposed M5 East expansion project and further work would be required to ensure integration between the two projects.

The project is estimated to cost \$9.1 billion (\$2008).

### Eyre Peninsula Port Proposals – (South Australian Government)

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. 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:

- Port Bonython (near Whyalla): identified by the South Australian Government as a suitable site for a deep water export facility that has sheltered deep water (20 metres deep) to cater for cape size vessels (180,000 to 240,000 tonne capacity). Following a call for expressions of interest, the South Australian government has selected Spencer Gulf Port Link Pty Ltd to develop a feasibility study for the project;
- 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

#### Pacific Highway Corridor Upgrades – (New South Wales Government)

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 improved access 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 estimated cost to complete the project is \$7.6 billion (\$2010).

#### Adelaide Rail Freight – Goodwood and Torrens Junctions – (South Australian Government)

Freight moving east-west through Adelaide is currently operating inefficiently as track is limited in capacity, since longer trains cannot pass due to constrained track geometry. Also, delays occur at points of intersection with the passenger rail and road network.

The Goodwood and Torrens junctions are in North Adelaide where the standard gauge interstate railway linking Melbourne and Adelaide twice crosses the TransAdelaide urban passenger network. This project proposes to deliver:

- grade separation of the passenger and freight rail line;
- elimination of five level crossings; and
- new station developments.

The project is estimated to cost \$418 million.

### Federal Highway Link to Monaro Highway – Majura Parkway Stage 2 – (Australian Capital Territory Government)

Efficient movement of freight between the Monaro Highway and Federal Highway and access improvements to freight hubs around Canberra Airport is important to the regional economy. With projected increases in freight levels and the development of industries around the airport, the current Majura Road is not an efficient freight route.

To provide for improved efficiency, the proposed Majura Parkway is to replace the existing Majura Road as the proposed freight bypass around the centre of Canberra. The project proposes to deliver:

- 11.5 kilometre limited access four lane road; and
- grade separated interchanges with the Federal Highway, Fairbairn Avenue and Monaro Highway.

The project is estimated to cost \$288 million.

### Western Interstate Freight Terminal – (Victoria)

The western interstate freight terminal, to be constructed in western Melbourne, aims to service a growing number of freight customers in the vicinity. It 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 proposed terminals in Sydney (at Moorebank) and Brisbane.

The Western Interstate Freight Terminal involves:

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

The project is estimated to cost \$2.314 billion.

### North-South Rail Freight Corridors – including Northern Sydney Freight – (Australian Rail Track Corporation / New South Wales Government)

The North-South freight corridors run between Brisbane and Melbourne. They comprise 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 (currently under construction).

Upgrades to the line between North Strathfield and Gosford are the subject of a current study by the Australian and NSW Governments. The Australian Government has announced a package of capacity and efficiency enhancement for the Australian Rail Track Corporation's NSW 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 Systems – (Australian Rail Track Corporation)

The Advanced Train Management System (ATMS) is a communications based safeworking system designed to replace traditional lineside signalling infrastructure. ATMS is a satellite based train control system currently under trial by the Australian Rail Track Corporation (ARTC) and would enable a virtual, communications based 'safeworking' system with lower costs and possibly greater infrastructure capacity.

The Australian Rail Track Corporation anticipates the proof-of-concept trial will be completed by the end of 2011 and would aim to move to roll-out the system commencing in 2011.

The project is estimated to cost over \$500 million.

### East West Rail Freight Corridor – (Australian Rail Track Corporation)

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 such as 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 the package of works needed to boost rails performance.

Already the Australian Commonwealth has announced some works in its December 2008 Nation Building package, including in Victoria, South Australia and Western Australia. These would be complemented by initiatives such as the Advanced Train Management System, Adelaide's rail freight junctions and the Melbourne freight terminals.

The Australian Rail Track Corporation has identified further rail infrastructure works, and Infrastructure Australia will work with the Corporation in assessing these proposals.

### Transcontinental Rail Link – Mildura to Menindee (Mildura Development Corporation)

The Transcontinental Rail Link is a proposal to develop a 240 kilometre standard gauge rail link from Yelta (near Mildura) to Menindee on the East-West Transcontinental Rail Line. The link will create an alternative route for container interstate traffic from Melbourne (via Geelong) to Perth and Darwin while creating rail access for mineral resource developments in the Mildura-Broken Hill region. Under the proposal, the Mildura to Melbourne line would need to be converted to standard/dual gauge.

The proposal consists of:

- new standard gauge rail line;
- grade separation of rail over road at the Merbein to Wentworth road; and
- enhancements works on the Menindee-Crystal Brook rail corridor.

The project has an estimated cost of \$400 million.

### Green Triangle Freight Transport Project – (South Australian Government and Victoria)

The Green Triangle has been identified as a major timber plantation and mineral sands province in south-west Victoria and south-east South Australia with capacity to generate large volumes of export timber plantation products via 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.

The road and rail program includes:

- new rail terminal at the Port of Portland;
- re-opening and upgrading of existing rail lines between Portland and Wolseley;
- upgrades on 82 kilometre of the Riddoch Highway, including road widening, overtaking lanes and shoulder sealing;
- upgrades on the 70 kilometre section of the Princes Highway between Heywood and Mt Gambier, including road widening, overtaking lanes, shoulder sealing, and intersection improvements;
- pavement rehabilitation of the Portland Ring Road; and
- a 4.7kilometre bypass of Penola (Stage 2).

The program is estimated to cost \$340 million.

### Northern Sydney Freight Access – F3-M2 Link – (New South Wales Government)

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 new link would be two lanes in each direction if it is tolled and three lanes in each direction if untolled.

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)

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 (ERTMS European Rail Traffic Management System – ERTMS). The project has the potential to build on the Australian Train Management System (ATMS) and European Train Control System (ETCS). The project is estimated to cost in the order of \$20 million.

### Mt Isa –Townsville Rail Corridor Upgrade – (Queensland Government)

The Mt Isa – Townsville rail corridor upgrade is scoped to including measures and enhancements to improve:

- rolling stock;
- increase maximum speeds, axle loads and train lengths; and
- operating systems and infrastructure to increase the capacity of the corridor to 12.5 million tonnes per annum from its current theoretical capacity of 7.5 million tonnes per annum.

The project is estimated to cost up to \$1.9 billion.

### Bruce Highway Corridor Upgrades – (Queensland Government)

The Bruce Highway Corridor upgrade aims to raise the Bruce Highway to minimum national standards. The program proposes:

- widening and strengthening the road to at least eight metres in key areas;
- providing additional overtaking lanes on two lane sections of highway;
- urgent upgrading of highest risk intersections;
- the Burdekin Bypass, including a grade separation at the Capricorn Highway intersection;
- additional rest areas and heavy vehicle stopping places and other minor safety works;
- improving flood immunity; and
- addressing key road safety issues.

# Appendix E

## ‘Ready to Proceed’ Projects and Project Development Funding

### ‘Ready to Proceed’ Projects

Summary Comment on Strategic Fit	Suggested Funding Conditions
<b>Bands 1 Projects</b>	
<b>National Managed Motorways Program/ (BCRs c. 3.0 – 10.0)</b>	
<ul style="list-style-type: none"> <li>Strong alignment with Infrastructure Australia’s strategic priority of improving productivity through better use of existing infrastructure assets, and potentially deferring the need for costly motorway investments and upgrades.</li> <li>This is a nationally significant initiative, strengthened by consistency with state planning objectives and the Infrastructure Australia strategic priority of improving productivity.</li> </ul>	<ul style="list-style-type: none"> <li>The state jurisdictions and the Commonwealth are to:               <ul style="list-style-type: none"> <li>agree a charter for the national managed motorways working group;</li> <li>develop a proposal for the application of feasibility/project development funding to project within the program; and</li> <li>complete project development work to a stage where a high level of confidence can be assumed that each priority project will deliver the proposed benefits within the budget and schedule, e.g. individual business cases progressed to investment decision-making stage.</li> </ul> </li> <li>The relevant jurisdiction agreeing to undertake an agreed post-completion evaluation of the project:               <ul style="list-style-type: none"> <li>Upon completion (e.g. to test whether the project was completed within scope, on time and on budget); and</li> <li>at agreed future intervals, to assess whether traffic projections underpinning the project’s development were robust, and whether other project benefits have been realised.</li> </ul> </li> </ul>
<b>Integrated Transit Corridor Development – Route 86 – Melbourne (BCR = 4.0)</b>	
<ul style="list-style-type: none"> <li>Proposal forms part of Victoria’s Integrated Transit Corridor development program seeking to encourage more intense urban development along existing transport corridors.</li> <li>Proposal is consistent with transport and land use planning strategies (albeit these are under review).</li> <li>Proposal is consistent with improving productivity, reducing greenhouse gas emissions, and developing our cities and regions.</li> </ul>	<p>The Victorian Government is to:</p> <ul style="list-style-type: none"> <li>implement an evaluation plan for the demonstration project including the realisation of the proposed project benefits;</li> <li>Develop a plan for the broader application of the Integrated Transit Corridor model;</li> <li>The Victorian Government agreeing to undertake an agreed post-completion evaluation of the project:               <ul style="list-style-type: none"> <li>Upon completion (e.g. to test whether the project was completed within scope, on time and on budget); and</li> <li>At agreed future intervals, to assess whether demand projections underpinning the project’s development were robust, and whether other project benefits have been realised.</li> </ul> </li> </ul>

## Band 2 Projects

### Melbourne Metro One (BCR = 1.3)

- Project is well linked to current transport and land use planning strategies (albeit these are under review). Melbourne Metro One aims to facilitate transport from areas in NW Melbourne that will experience substantial population growth.
- Evidence presented to articulate problems – congestion, access to CBD, population growth and ability to foster transit-oriented development – that the project aims to address, (e.g. high train loadings on rail lines that are likely to experience even higher loadings as growth occurs in NW Melbourne).

The Victorian Government is to:

- complete project development work to a stage where a high level of confidence can be assumed that the project will deliver the proposed benefits within the budget and schedule, e.g. business case progressed to investment decision-making stage. develop a proposal for obtaining a material financial contribution to the project from commercial revenues such as transit orientated development;
- Complete a procurement options analysis and provide a detailed procurement strategy;
- Agree to planning approval conditions that deliver a better balance between amenity and more efficient delivery, for example, by extending work hours on the corridor and applying more realistic construction noise limits;
- The Victorian Government agreeing to undertake an agreed post-completion evaluation of the project:
  - Upon completion (e.g. 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.

## Band 3 Projects

### Adelaide Rail Freight – Goodwood and Torrens Junctions – Adelaide (BCR = 1.3)

- The problem and the project are nationally significant. The east-west rail route dominates the national east west freight market, and the initiative addresses productivity improvements on the route by enabling freight train lengths to increase to 1,800m.
- The initiative strongly aligns with the following priorities: 'Increase Australia's productivity' (by facilitating use of longer trains) and 'Develop our cities and regions' (by facilitating transit-oriented development).
- Recent study found that, compared to options to by-pass Adelaide, the upgrades of the two junctions remains the most economic means of improving rail freight through Adelaide.

The South Australian Government is to:

- complete project development work to a stage where a high level of confidence can be assumed that the project will deliver the proposed benefits within the budget and schedule, e.g. business case progressed to investment decision-making stage;
- finalise a proposal for the transit orientated development aspects of the project; and
- develop a proposal for obtaining a material financial contribution to the project from the freight industry and from commercial revenues from the transit orientated development.
- The South Australian Government agreeing to undertake an agreed post-completion evaluation of the project:
  - Upon completion (e.g. to test whether the project was completed within scope, on time and on budget); and
  - At agreed future intervals, to assess whether traffic projections underpinning the project's development were robust, and whether other project benefits have been realised.

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**Federal Highway Link to Monaro Highway – Majura Parkway – Canberra (BCR = 3.3)**

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- The project is the main freight route linking the regions north and south of the Australian Capital Territory. It would also form part of the Territory's arterial road network, improving north-south transit, particularly to the Airport and eastwards towards Queanbeyan.
- The initiative would make a contribution to the 'Increasing Australia's Productivity' and 'Developing Our Cities/Regions' priorities.
- A nationally significant project that aligns with a number of Infrastructure Australia's strategic priorities. The project is a priority in ACT planning documents and a funding priority for the ACT Government.
- The road be configured to high performance vehicle standards and the ACT Government be required to enter an intergovernmental agreement with the Commonwealth for High Productivity Vehicle Access (HPVA);
- The road be tolled, with a view to ensuring that a reasonable proportion of capital costs, and all of the road's operational and maintenance costs, are recovered through tolls; and
- The ACT government continue to undertake is to complete project development work to provide further confidence that the project will be completed within scope, and on time and budget. a stage where a high level of confidence can be assumed that the project will deliver the proposed benefits within the budget and schedule, e.g. business case progressed to investment decision-making stage.
- The ACT Government agreeing to undertake an agreed post-completion evaluation of the project:
  - Upon completion (e.g. to test whether the project was completed within scope, on time and on budget); and
  - At agreed future intervals, to assess whether traffic projections underpinning the project's development were robust, and whether other project benefits have been realised.

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**Pacific Highway Upgrade (BCR = 1.5 (for the corridor as a whole. BCR for remaining sections will be lower.))**

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- Pacific Highway is an important part of a national freight network.
- Good alignment with Infrastructure Australia strategic priorities, including expanding productive capacity, improving productivity, and developing our regions.
- Need to consider whether a new Pacific Highway alignment can also facilitate realignment of (at least part) the North Coast Rail line.
- NSW Government be required to enter an intergovernmental agreement with the Commonwealth for High Productivity Vehicle Access (HPVA);
- The NSW Government agreeing with the Australian Government on arrangements for a corridor wide toll to be applied to through traffic using the highway to be used to fund the cost of the upgrades, and all of the highway's operational and maintenance costs;
- For the remaining sections of the highway upgrade, the NSW Government is to:
  - develop a proposal for the highway to share corridors (at least in part) with potential re-alignments of the North Coast Rail line; and
  - Agree to planning approval conditions that deliver a better balance between amenity and more efficient delivery, for example, by extending work hours on the corridor and applying more realistic construction noise limits.
- The NSW Government agreeing to undertake an agreed post-completion evaluation of the project:
  - Upon completion (e.g. to test whether the project was completed within scope, on time and on budget); and
  - At agreed future intervals, to assess whether traffic projections underpinning the project's development were robust, and whether other project benefits have been realised.



## Projects Recommended for Project Development Funding

Project/ Rationale for Recommendation	Suggested Conditions on Project Development Funding
<b>Cross River Rail</b>	
<ul style="list-style-type: none"> <li>On an important, but expensive project, there is a need to: <ul style="list-style-type: none"> <li>Minimise costs through additional 'value engineering'; and</li> <li>Prepare the project for delivery, particularly through preparation for the procurement phase of the project.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Co-funding from the Queensland Government;</li> <li>Engagement of additional independent parties to review costs, design and construction methodologies.</li> </ul>
<b>Integrating Sydney's motorway network – network charging</b>	
<ul style="list-style-type: none"> <li>Need to work through a range of transport and contractual matters to a point where the NSW and Australian Governments can take a final business case decision.</li> </ul>	<ul style="list-style-type: none"> <li>Co-funding from the NSW Government.</li> </ul>
<b>National Managed Motorways Program</b>	
<ul style="list-style-type: none"> <li>Need to assist jurisdictions in developing well-conceived projects within the programme that promise to yield highly effective means of reducing congestion.</li> </ul>	<ul style="list-style-type: none"> <li>Co-funding from the relevant Government.</li> </ul>
<b>Freight access to Port Botany and Kingsford Smith Airport</b>	
<ul style="list-style-type: none"> <li>The current conception of the road improvements in the M5 corridor do not provide an effective or efficient means of improving freight access to/from the Port and Kingsford Smith Airport.</li> </ul>	<ul style="list-style-type: none"> <li>Co-funding from the NSW Government;</li> <li>Project that is to be subject of project development needs to be focussed on freight, and able to service effectively container traffic from Port Botany;</li> <li>NSW Government agreeing to prepare a NSW Ports Strategy in line with the National Ports Strategy, and an associated Freight Strategy in line with the National Land Transport Strategy.</li> </ul>
<b>Western Interstate Freight Terminal</b>	
<ul style="list-style-type: none"> <li>Development of an effective inter-state rail freight network requires the presence of a modern intermodal terminal in Melbourne. The Victorian Government has undertaken some project development work. Further project development would assist the Government in finalising a well-developed business case.</li> </ul>	<ul style="list-style-type: none"> <li>Co-funding from the Victorian Government</li> <li>Project that is to be subject of project development needs to be focussed on freight, and able to service effectively container traffic from Port of Melbourne;</li> <li>Victorian Government agreeing to prepare a Victorian Ports Strategy in line with the National Ports Strategy, and an associated Victorian Freight Strategy in line with the National Land Transport Strategy.</li> </ul>
<b>Freight access to Port of Melbourne</b>	
<ul style="list-style-type: none"> <li>The current conception of the road improvements in the WestLink corridor do not provide an effective or efficient means of improving freight access to/ from the Port of Melbourne.</li> </ul>	<ul style="list-style-type: none"> <li>Co-funding from the Victorian Government</li> <li>Project that is to be subject of project development needs to be focussed on freight, and able to service effectively container traffic from the Port of Melbourne;</li> <li>Victorian Government agreeing to prepare a Victorian Ports Strategy in line with that recommended in the National Ports Strategy, and an associated Victorian Freight Strategy in line with that envisaged as part of the National Land Transport Strategy.</li> </ul>
<b>Transforming the Pilbara: Pilbara Cities</b>	
	<ul style="list-style-type: none"> <li>Co-funding from the Western Australian Government</li> </ul>

# Acknowledgements

## Photos

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Jemena

Port of Melbourne Corporation

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Department of Families, Housing, Community Services and Indigenous Affairs

Tasmanian Department of Economic Development, Tourism and the Arts



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