

# Appendix D

## 2012 infrastructure priority list

	<b>Early stage</b> Initiatives in this category address a nationally significant issue or problem, but the identification or development of the right solution is at an early stage.	<b>Real potential</b> Initiatives in this category clearly address a nationally significant issue or problem and there has been a considerable amount of analysis of potential solutions.	<b>Threshold</b> 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.	<b>Ready to proceed</b> Initiatives in this category meet all of Infrastructure Australia's criteria.
Transforming our cities	Capacity Improvements and Expansion of the Metropolitan Commuter Rail Network (NSW; \$795m)	Integrating Sydney's Motorway Network Melbourne Metro Stage 2 (Vic; \$1bc)	Eastern Busway – Stages 2b and 3 (Old; \$825m (\$2008 real)	Brisbane Cross River Rail – core project (Old; BCR 1.34; \$5.311m)
	Melton Rail Line Duplication and Electrification (Vic; \$1,300m)	Dandenong Rail Capacity (Vic; \$1bc)		Victorian National Managed Motorways – Monash Freeway, High Street to Warrigal Road (Vic; BCR 11.5; \$14.3m)
	Gold Coast Rail (Old.; SE Old Mayors; \$2.875m)	Queensland National Managed Motorways – Bruce Highway, Beams Road to Caboolture Road (Old; \$202m)		Victorian National Managed Motorways – Monash Freeway, Warrigal Road to Clyde Road (Vic; BCR 6.9; \$100.7m)
	Hobart: A World-Class, Liveable Waterfront City (Tas; \$120m)	Queensland National Managed Motorways – Pacific Motorway, Gateway to Logan (Old; \$4.6m)		Melbourne Metro Stage 1 (Vic; BCR 1.3; \$1bc)
	North West Sydney Public Transport Strategy – North West Rail Link (NSW; \$7,500m – \$8,500m)			
	South Road (SA; \$1bc)			
	South Australia National Managed Motorways Project – South Eastern Freeway, Stirling to Crafrers (SA; \$4.57m)			
	Tram Route 86 Demonstration Project, Stages B and C (Vic; \$1bc)			
	Port Hedland Inner Harbour – Capacity Enhancements (WA; North West Iron Ore Alliance; Hancock; \$500m – \$1,000m)	Abbot Point Multi Purpose Harbour (Old; \$3,300m (\$2010 real)	Smart Port ICT (Vic; \$16m)	National Ports Strategy – 30 year plans for ports and landside connections
	Transforming the Pilbara: Pilbara Cities (WA; \$2,900m)	South West (Bunbury) Infrastructure (WA; \$605m)	South West (Bunbury) Infrastructure (WA; \$605m)	Oakajee Port (potential equity injection) (WA; c.\$5,400m (\$2010 real))
Port of Hastings (incl. Peninsula Link rail freight corridor) (Vic; \$1bc)	Freight Access to Port of Brisbane and Brisbane Airport – Gateway Motorway North (Old; \$1,159m – \$2,710m)	Freight Access to Port of Brisbane and Brisbane Airport – Gateway Motorway North (Old; \$1,159m – \$2,710m)	Darwin East Arm Port Expansion (potential equity injection) (NT; \$336m)	
Eyre Peninsula Port Proposals (SA, Centrex; \$1bc)	Freight Access to Port of Adelaide – Northern Connector (SA; \$1,191m)	Freight Access to Port of Adelaide – Northern Connector (SA; \$1,191m)		
Port Botany and Sydney Airport Transport Improvement Plan (NSW; \$1bc)	Melbourne International Freight Terminal (Vic; \$1bc)	Melbourne International Freight Terminal (Vic; \$1bc)		
	Bell Bay Intermodal Expansion Project (Tas; \$150m)	Bell Bay Intermodal Expansion Project (Tas; \$150m)		
Competitive international gateways				

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National freight network	Northern Sydney Road Freight Access – F3-M2 (NSW; \$4,750m (\$2008)) Australian Digital Train Control System (Australasian Railways Association; \$20m) Mount Isa to Townsville Rail Corridor Upgrade (QLD; \$333m) Transcontinental Rail Link – Mildura to Menindee (Mildura Development Corporation; \$400m) Bruce Highway Upgrade Strategy (Qld; \$22,500m including Cooroy to Curra) Bruce Highway – Cooroy to Curra Section A (Qld; \$852m) Warrego Highway Upgrade Strategy – Heildon to Morven (Qld; \$670m) Tasmanian Rail Revitalisation Programme (Tas; \$240m) Hobart to Launceston Transport Strategy (Tas; \$1,662m)	Western Interstate Freight Terminal (Vic; \$1bc) North South Rail Freight Corridors including Northern Sydney Freight (Australian Rail Track Corporation and NSW; \$n/a) Advanced Train Management System (Australian Rail Track Corporation; \$500m) East West Rail Freight Corridor (Australian Rail Track Corporation; \$n/a) Green Triangle Freight Transport Program (SA/Vic; \$112m) East West Link (Vic; \$1bc)	National Land Freight Strategy	Pacific Highway Corridor Upgrades (NSW, BCR 1.5; \$6,400m (\$2010 real))
Essential Indigenous infrastructure	An infrastructure policy framework is being developed for essential Indigenous infrastructure. As this is progressed, Infrastructure Australia's Indigenous Infrastructure Sub-Committee will work with stakeholders to identify potential projects.			
Adaptable and secure water supplies	An Innovation Strategy for Tasmania: Focus on Food Bowl Concept (Tas; \$1bc)	Tasmanian Water and Sewerage Reform (Tas; \$1,000m)	Infrastructure Australia proposes reforms around planning for water security, independent pricing, competition in bulk supply and consumer choice over levels of reliability	
A true national energy market		Mid-West Energy – Stage 2 (WA; \$280m)	Infrastructure Australia supports proposed reforms to regulatory provisions regarding connection of remote renewable energy generation and electricity transmission connections between states	
Digital infrastructure				National Broadband Network
<b>Total capex (est)</b>	<b>\$48,070m</b>	<b>\$10,071m</b>	<b>\$6,561m</b>	<b>\$11,826m</b>
<b>Total estimated infrastructure priority list capital costs: \$76,528m</b>				

(1) Each project in the list includes the name of the project component(s), and estimated benefit cost ratio (BCR) for ready to proceed projects. For some projects, the estimated capital cost has been withheld at the request of the proponent. Some capital 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. Total capex (est) does not include these projects whose capital estimate has been withheld. Where a range has been provided, the highest figure has been included in the total. Unless stated otherwise, the capital cost and the benefit cost ratio (BCR) are those estimated by the proponent.

(2) See the project summaries at Appendix E for an explanation of proponent acronyms. Orange text indicates a new or re-submitted submission in 2017/18.

(3) 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 E

## Description of projects in the 2012 infrastructure priority list

### Priorities under the transforming our cities theme

#### Brisbane Cross River Rail (Queensland Government)

In 2009, the Australian Government committed \$20 million and the Queensland Government \$5 million towards detailed feasibility studies, an environmental impact assessment process and a detailed business case. The Queensland Government committed further funds for these studies. These investigations have been completed.

Cross River Rail is aimed at increasing rail capacity across the whole urban rail network to meet projected transport demand as south east Queensland's population grows from around 3 million in 2009 towards 4.4 million in 2031. The project aims to provide the inner city rail infrastructure necessary to transform the rail network, as well as providing capacity in key locations to enable more freight to be moved by rail on the existing surface rail network.

The project is also aimed at providing a catalyst for sustainable urban development in south east Queensland.

The core project is estimated to cost \$5.31 billion and consists of:

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

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

The full Cross River Rail solution includes:

- new surface stations at Yeerongpilly and RNA/Exhibition;
- minor station upgrades at Moorooka and Rocklea; and
- five kilometres of additional corridor surface tracks from Yeerongpilly to south of Salisbury (includes four kilometres of additional freight track, three kilometres of two additional passenger tracks and various track realignments).

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

- consider alternative options for revenue generation, including a parking levy and congestion charging. The analysis undertaken on the land value capture opportunity would benefit from an independent review;
- undertake further market sounding to ensure that procurement options are based on up to date feedback. Market sounding for the project was undertaken in July 2010. Given the changes in debt and equity markets and in risk appetite over the past 18 months and the potential changes in Europe, this analysis should be updated;
- develop a comprehensive governance model for procurement and delivery;
- agree to planning approval conditions that balance amenity and more efficient delivery;
- agree to undertake a post-completion evaluation of the project:
  - upon completion, for example to test whether the project was completed within scope, on time and on budget; and
  - at agreed future intervals, to assess whether demand projections underpinning the project's development were robust, and whether other project benefits have been realised.

### National Managed Motorways Program (Queensland, New South Wales, South Australian, Victorian, and Western Australian Governments)

The national managed motorways initiative was included in the 2011 infrastructure priority list. The \$6.4 billion program seeks to incorporate intelligent transport solutions – comprising information, communication and control systems – into urban motorway networks. These ‘smart’ systems are designed to improve the operational performance of existing transport assets.

The program seeks to apply a range of these measures to motorways in south east Queensland, greater Sydney, Melbourne, Adelaide and Perth.

In 2011, the National Managed Motorways Working Group submitted five individual projects for implementation. The projects have been included on the infrastructure priority list as follows:

- two projects on Victoria’s Monash Freeway – on two adjacent sections of the Monash Freeway between High Street and Clyde Road. A total of 33 kilometres in length is proposed to be upgraded from level 1 Intelligent Transport System to level 3. The two sections are between:
  - High Street to Warrigal Road – BCR of 11.5, estimated cost of \$14.3 million;
  - Warrigal Road to Clyde Road – BCR of 6.9, estimated cost of \$100.7 million;
- two projects in Queensland have been included on the priority list at real potential. The first submission proposes to install base level Intelligent Transport Systems along a 33 kilometre section of the Bruce Highway from Beams Road to Caboolture. The cost of this section is estimated to be \$202 million. The second proposal is a 16 kilometre section of the Pacific Motorway between Gateway and Logan, estimated to cost \$4.6 million; and
- the South Eastern Freeway project in South Australia is included on the priority list at early stage. The proposal is for a three kilometre section of the South East Freeway between Stirling and Crafers to trial hard shoulder running.

For the two Victorian projects that are at ready to proceed, it is suggested that the Victorian Government together with the National Managed Motorway Working Group agree to undertake a post-completion evaluation of the project:

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

### Melbourne Metro Stages 1 and 2 (Victorian Government)

Melbourne Metro Stage 1 aims to benefit the entire Melbourne 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.

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.

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

In developing the projects, the Victorian Government is proposing to combine Melbourne Metro 1 and 2 to deliver a better project outcome at a lower cost, with similar or greater benefits. A review of the revised proposal is expected in the next round of submissions. Until this review is complete, Melbourne Metro 1 and 2 will remain at ready to proceed and real potential, respectively.

### 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, and Stage 2a from Buranda to Main Avenue, Coorparoo are now complete. 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 – which incorporates:
  - combination of driven and cut and cover tunnel beneath Old Cleveland Road;
  - sub-surface busway station at the Coorparoo Junction;
  - at-grade busway station at Bennetts Road, Coorparoo; and
- Stage 3: transit lanes between Scrub Road, Carindale to Tilley Road, Chandler.

The proponent has estimated the projects to cost \$685 million (Stage 2b) and \$140 million (Stage 3), both in \$2008 (real).

### 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.

Various proposals for upgrading and coordinating Sydney's motorway network have been canvassed over recent years.

Placing the current tolling arrangements on a common basis, possibly through the creation of a single Sydney motorway network company, could greatly improve the efficiency of the network. Such a step could potentially generate a revenue source to fund public transport infrastructure or future motorway expansions.

### Dandenong Rail Capacity Program (Victorian Government)

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

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

Increasing capacity on the corridor is part of a seven stage metropolitan rail upgrade program.

The submission is seeking a \$30 million contribution to planning operational improvements and capital works to increase the capacity of the Dandenong rail corridor by up to 100 per cent.

Potential initiatives could include:

- timetable changes;
- signalling upgrades;
- running longer trains and associated lengthening of stations;
- power upgrades; and
- changes to level crossings.

### Tram Route 86 Demonstration Project (Victorian Government)

The Victorian Government has developed a 20 year *Integrated Transit Corridor Development Program* which seeks to encourage sustainable growth along inner Melbourne tram corridors. The Tram Route 86 Demonstration Project forms part of this program, covering 6.8 kilometres of the route.

Section A was included on the infrastructure priority list in 2010 at ready to proceed and was subsequently funded by the Victorian Government at a cost of \$25 million. It was completed in February 2012. The 2011-12 submission included a progress report on the project and is seeking funding for sections B and C.

The learnings from section A will inform the remaining stages of the program, which includes:

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

### Melton Rail Line Duplication and Electrification (Victorian Government)

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.

The 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;
  - 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.

In 2009, the proponent estimated the project to cost \$1.3 billion.

## North West Sydney Public Transport Strategy – North West Rail Link

The New South Wales Government has identified the need to improve public transport access from north west Sydney to employment areas on Sydney's lower north shore and in the Sydney central business district.

In response to that need, the New South Wales Government has proposed a 23 kilometre extension – including 16.9 kilometres in tunnel – to the existing City Rail network from Epping to Rouse Hill, with the following features:

- stations at Cherrybrook, Castle Hill, Hills Centre, Norwest, Kellyville and Rouse Hill, with provision for stations in the future at Samantha Riley Drive and Cudgegong Road;
- a train stabling facility at Tallawong Road beyond Rouse Hill; and
- bus, pedestrian, taxi and cycle access facilities at all stations, with a target of 4,000 park and ride spaces across the project.

The estimated capital cost of the project is \$7.5 to \$8.5 billion, excluding rolling stock.

Having reviewed the proposal for the rail link, Infrastructure Australia believes further analysis of options is required. Development of a broader north west Sydney public transport strategy would assist governments and the community in understanding the range of transport needs in north west Sydney and would enable a broad range of options for meeting those needs to be tested.

## 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 a 'Rail 2040 Plan' for heavy rail and metro systems in the Sydney metropolitan area. These initiatives include:

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

In the 2010 submission, the project was estimated to cost \$795 million.

### Gold Coast Rail (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. Opportunities for medium density development along the corridor are also proposed.

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

In 2010, the proponents estimated the project to cost around \$575 million for the capacity upgrades and \$2.3 billion for the extension to Coolangatta.

### South Road (South Australian Government)

The proponent has provided a discussion paper on the South Road corridor, which is part of Adelaide's north-south corridor. The South Australian Government is requesting feedback and engagement from the Office of the Infrastructure Coordinator to develop an agreed understanding of the problem and appropriate solutions.

The submission's objective is to implement a plan that addresses the 'north-south transport task' and protects this key economic corridor. The specific planning objectives along the corridor are to: protect and provide freight priority consistent with a National Network Transport Link; improve travel time, reliability and vehicle operating costs; improve accessibility to employment, leisure and service opportunities; help achieve public transport mode share targets; and provide safety and environmental benefits.

Given the early stage of the investigations, no capital cost estimate has been provided at this time.

### 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 focussed on improving 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. A further two stages, involving remediation of Macquarie Wharves Nos. 5 and 6, have also been proposed.



## Priorities under the international gateways theme

### 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:

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

The project was estimated to cost \$336 million.

### 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:

- two 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.

In 2008-09, the Common Use Infrastructure project was 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 understood to be of the order of \$5.4 billion (\$2010).

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

The road, rail and port upgrades at Bunbury together form a 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 south west Western Australia and facilitating a better layout of the port and transport links, a whole of supply chain improvement can be realised.

The submission is for the construction or upgrade of a range of individual infrastructure, including:

- the Bunbury Outer Ring Road;
- the Coalfields Highway;
- duplication of the rail line between Brunswick Junction and Bunbury Port; and
- diversion of the Preston River to allow for port expansion.

In early 2011, the proponent estimated the capital cost of the proposal at \$605 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, bulk minerals export and related industrial activity and goods importation.

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

The scope of Stage 1 includes:

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

Future stages could include a complete 12 berth development for import/export products and potential coal export. 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 (\$2010 real).

### 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 aims to greatly improve road freight connectivity between key northern industrial and logistics centres and the port precinct.

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

- widening 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 proponent has estimated the project to cost between \$1.159 and \$2.710 billion, depending on the project option.

### 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, freight rail track 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;
- a 15.6 kilometre six lane (three lanes in each direction) Northern Connector road 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 \$1.191 billion.

### Melbourne International Freight Terminal (Victorian Government)

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

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

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

### 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
- re-location of a rail line.

The proponent has estimated the project cost at \$150 million.

The submission will remain on the infrastructure priority list on the basis that the objectives are aligned with Infrastructure Australia's goals, and assuming that a real problem exists. To date, there is no evidence of current capacity constraints, making progression of the project in the short-term unlikely.

### Smart Port ICT (Victorian Government)

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

The Smart Port ICT (information and communications technology) project aims to coordinate a national approach – using international standards – to the development of information and communications systems. This includes addressing 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.

In the 2009 submission, the project was estimated to cost \$16 million.

### Port Hedland Inner Harbour Capacity Enhancements (Western Australian Government, North West Iron Ore Alliance, 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.

In 2009-10 Infrastructure Australia received a number of submissions relating to the Port Hedland Inner Harbour Capacity Enhancements. The proposal by the Western Australian Government, aims to facilitate and expand trade through the port to satisfy demands for bulk export capacity and support the expansion of mining in the Pilbara region.

The project proposes:

- deepening of the main 40 kilometre channel; and
- the construction of inner harbour berths.

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

A number of submissions from miners relate to 'common user' infrastructure relating to the inner harbour at Port Hedland. These projects are at various stages of development.

### 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 communications 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.

### Port of Hastings Development (Victorian Government)

As Port of Melbourne throughput grows, the port will gradually become more constrained, affecting the efficiency of some port operations. The Victorian Government has identified the Port of Hastings as the preferred site for future handling of international containers.

The Port of Hastings is located approximately 30 kilometres south east of Dandenong. It currently comprises piers and wharves, including the BlueScope Steel Wharf, the Long Island Point Jetty, the Crib Point Jetty and the Stony Point Jetty.

The proposal to Infrastructure Australia is for the project's planning and business case investigations for Stage 1. The investigations are estimated to cost \$120 million. Planning work to date has focussed on corridor options which connect Hastings to the state and interstate rail freight networks.

### 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, using 'cape-sized' vessels. Other critical elements to be investigated as part of the Eyre Peninsula Port proposals include rail, regional power and water infrastructure.

The proposals submitted to Infrastructure Australia include two potential developments:

- Port Bonython (near Whyalla): identified by the South Australian Government as a suitable site for a deep water export facility; and
- Sheep Hill Port: separate to the Port Bonython proposal, Centrex Metals has secured a 90 hectare site at Sheep Hill, located 60 kilometres north of Port Lincoln along the eastern edge of Eyre Peninsula. The proposal is for a deep water export facility to cater for 'cape-class' vessels.

### Port Botany and Sydney Airport Transport Improvement Plan (New South Wales Government)

The New South Wales Government is seeking \$28 million to assist in the development of a Port Botany and Sydney Airport Transport Improvement Plan.

The proposal seeks to address landside access constraints that exist in servicing the current and future transport needs of the international gateways, Port Botany and Sydney Airport. It incorporates three submissions previously included on the priority list:

- Freight Access to Port Botany and Kingsford Smith Airport
  - M4 East extension – \$12 billion (\$2008), two stage option;
  - M5 East upgrade – \$4.5 billion (\$2010);
  - Container Freight Improvement Strategy – \$3.9 billion.

The Plan is expected to cover a range of issues including:

- congestion resulting from the heavy reliance on road-based transport to service the needs of the precinct; and
- inefficiencies between the port and land side (the port can move containers at a higher rate than the land transport system can move cargo to and from the terminals and adjacent container depots).

Development of the plan is intended to test a series of transport improvement options covering the next 25-30 years. The New South Wales Government will:

- identify and sequence key infrastructure and policy initiatives to implement the preferred direction for land side transport serving the precinct; and
- consider possible funding sources.

The plan will recommend: a set of short, medium and long-term multimodal solutions; a proposed delivery strategy; and possible funding sources. The work will consolidate and build upon previous studies that have focussed on addressing land transport issues in and around this precinct. It will examine the relationships between the two key gateways; the freight task; the passenger task; rail, road and intermodal planning.

### 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 proponent has estimated the capital cost of the remaining works at \$6.4 billion (\$2010) or \$7.7 billion (in outturn costs and assuming completion in 2016). These figures exclude existing committed funding for the project.

#### Western Interstate Freight Terminal (Victorian Government)

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 terminals in Sydney (at Moorebank) and Brisbane.

The Western Interstate Freight Terminal involves:

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

This project is at development stage. The proponent is seeking a contribution to \$10 million for planning and development.

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

The north-south freight corridor runs between Brisbane and Melbourne. It comprises the densest general freight route in Australia with a number of segments critically important to national prosperity. The corridors cover the existing lines including the Southern Sydney Freight Line (currently under construction).

Upgrades to the line between North Strathfield and Gosford are the subject of a current study by the Australian and New South Wales Governments. The Australian Government has announced a package of capacity and efficiency enhancement for the Australian Rail Track Corporation's New South Wales North Coast line. The corridor also includes the proposed Inland Rail Route between Melbourne and Brisbane which would bypass the Sydney area.

#### Advanced Train Management System (Australian Rail Track Corporation)

The Advanced Train Management System (ATMS) is a communications based safe working system designed to replace traditional line side signalling infrastructure. ATMS is a satellite based train control system currently under trial by the Australian Rail Track Corporation (ARTC) and would enable a virtual, communications based 'safe working' 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.

#### Green Triangle Freight Transport Project (South Australian and Victorian Governments)

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

A number of the initiatives are underway; this submission includes a program of road projects, including the Penola Bypass Stage 2 as well as overtaking lanes, widening, intersection upgrades, shoulder sealing and upgrades to local roads.

The project has an estimated cost of \$112 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 a package of works needed to boost performance of the rail sector.

Some works in Victoria, South Australia and Western Australia were funded in the December 2008 Nation Building package. The Goodwood and Torrens Junction projects in Adelaide, announced in the 2012-13 budgets of the Australian and South Australian Governments, were also part of the program. Other initiatives include an Advanced Train Management System and additional rail infrastructure works. Infrastructure Australia will work with the Corporation in assessing these proposals.

### East West Link (Victorian Government)

Projected growth in traffic through the Port of Melbourne is predicted to place pressure on the efficiency of freight movements to and from the port.

The 2011 infrastructure priority list included the Westlink project at real potential.

The Victorian Government submitted a new project, East West Link, during 2011. This addresses the objectives of the Westlink project, in addition to furthering the scope of the project. The new East West Link project is at development stage.

East West Link is a proposed 18 kilometre inner urban freeway connecting the Eastern Freeway and the Western Ring Road, with intermediate connections to the Tullamarine Freeway, Port of Melbourne and Geelong Road.

The submission identifies the problem as the lack of east-west connectivity in Melbourne's transport system. This contributes to congestion as there is:

- a significant amount of east-west traffic that is currently moved through a disconnected arterial road network north of the central business district; and
- over-reliance on the M1 corridor – Melbourne's only east-west motorway route – particularly with growing freight movements.

The Victorian Government is seeking \$30 million of Australian Government funding for project development.

### Northern Sydney Road Freight Access – F3-M2 (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.



### Mount Isa to Townsville Rail Corridor Upgrade (Queensland Government)

A feasibility study is currently underway for the Mount Isa to Townsville rail corridor upgrade.

The project scope includes upgrades to rail and related road infrastructure:

- Townsville East Access Corridor includes the construction of approximately 6.5 kilometres of new rail through the urban area. It will provide an alternative route for rail access to the port to provide increased capacity and access efficiency;
- enhancements including holding roads, loop extensions and additional passing loops on the western sections of the rail corridor to enable higher freight rail volumes; and
- Associated upgrades to road infrastructure.

The project has an estimated cost of \$333 million.

### 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 Yeita (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:

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

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

### Bruce Highway Upgrade Strategy (Queensland Government)

The Queensland Government has prepared a Bruce Highway Upgrade Strategy that aims to identify priority sections of the highway for upgrade works. It is a 20 year master plan of 110 short, medium and long-term priorities, spanning the length of the Bruce Highway from Brisbane to Cairns. The Queensland Government has estimated the cost of the full scheme at \$22.5 billion, including the \$852 million upgrade between Cooroy to Curra – Section A.

The Bruce Highway is Queensland's major east coast transport and economic corridor. The corridor supports around 60 per cent of Queensland's population. The strategy aims to deliver projects along the full length of the Bruce Highway which spans almost 1700 kilometres from Pine Rivers in Brisbane's north to the southern approach into Cairns.

Projects include up to 340 kilometres of highway duplications, bypasses and deviations, bridge replacements, intersection upgrades, overtaking lanes and other safety improvements. The investments aim to deliver increased capacity and transport efficiency and improved safety, flood immunity and reliability.

The Queensland Government has indicated it will submit priority projects from the strategy to Infrastructure Australia. Individual projects will be reviewed on their own merits.

### Bruce Highway – Cooroy to Curra Section A

Cooroy to Curra is identified by the Queensland Government as a priority infrastructure project under the Bruce Highway Upgrade Strategy. It is a major north-south link for the rapidly growing areas of south east Queensland. Residential and industrial expansion is pushing north along the Bruce Highway corridor, making this section of the highway the northern gateway to this growth hub. The submission states that growth has led to exhaustion of capacity and safety and asset performance reductions.

Cooroy to Curra is approximately 65 kilometres in length and has been divided into four designated sections. This submission is seeking funding for the delivery of the upgrade of Section A – Cooroy Southern Interchange to Sankeys Road (13.3 kilometres), which is estimated to cost \$852 million. Section B (Sankeys Road to Traveston Road) is currently under construction.

The objectives of the project are to:

- reduce travel times and improve travel time reliability;
- improve road safety;
- reduce maintenance dependency; and
- build in capacity and efficiency to support passenger and freight transport growth on this section of the Bruce Highway.

### Warrego Highway – Helidon to Morven (Queensland Government)

The Warrego Highway Upgrade Program aims to deliver improved road safety, capacity increases and infrastructure renewal works on the Warrego Highway between Helidon and Morven, in southern Queensland.

This proposal aims to upgrade the Warrego Highway between Helidon and Morven, in southern Queensland, to deliver improved road safety, capacity increases and infrastructure renewal works. The submission states that upgrades are critical to provide the transport infrastructure necessary to support the Surat Basin energy province.

A number of problems exist on the existing highway: poor road condition; congestion from strong regional economic growth and a lack of viable alternative transport modes. A number of trends are identified that will exacerbate these problems, particularly the growing demand for Surat Basin's resources.

The submission proposes a six year program of works to address this problem while the Queensland Government is developing a strategy for a 12 year program to address the longer term needs of the highway.

The project has an estimated cost of \$670 million.

### Tasmanian Rail Revitalisation Programme (Tasmanian Government)

The proposal is seeking funding to upgrade the freight rail network in Tasmania, which is in poor condition as a result of historic under-investment in rail infrastructure in Tasmania.

A number of problems exist, including high operating costs and poor reliability of the network due, in part, to assets nearing the end of their useful life. This has resulted in reduced freight patronage of the network. The submission proposes a program of targeted upgrade works to improve the safety and reliability of the network and to create a more competitive market for freight users.

Investment under the Nation Building Program has started to address these issues and led to a marked improvement in performance and reliability, and some growth in rail's market share. The Tasmanian Rail Revitalisation Program is designed to build on these improvements to ensure the long-term sustainability of the Tasmanian rail network and service the growing freight needs (2.2 per cent growth per annum expected up to and beyond 2030).

The project has an estimated cost of \$240 million.

### Hobart to Launceston Transport Strategy

Three submissions were received from the Tasmanian Government seeking funding to undertake safety upgrades, meet capacity demands and improve service levels for the Brooker and Midlands Highways. These roads make up the main road transport corridor between Launceston and Hobart.

The problems described include road safety concerns and travel inefficiencies for freight, tourism and commuters. A package of works including up to 23 individual projects, estimated at \$1.662 billion, was proposed to improve the transport network's efficiency and reliability.

Infrastructure Australia believes further testing of options could yield more cost-effective solutions to the transport needs in this corridor. Development of a Hobart to Launceston transport strategy is therefore proposed. The strategy should:

- incorporate the Brooker and Midland Highways;
- focus on freight efficiencies at major junctions and through the towns along the corridor that have not yet received a road bypass;
- integrate with the proposals for upgrade of the rail corridor from Launceston to Brighton; and
- support development of cost-effective public transport proposals for Hobart and Launceston.