

Appendix C

Description of Infrastructure Priorities

The following provides a brief description of infrastructure priorities listed in Table 1. Proponents are shown in brackets. Unless stated otherwise, project costs are 'outturn' estimates provided by the proponent.

Priorities under the Transforming our Cities Theme

South West Rail Link (New South Wales Government)

The NSW Government has established plans for a South West Growth Centre to accommodate over 300,000 people on Sydney's south-western fringe. The South West Rail link is a proposed 11km line from Glenfield (on the existing rail network) to Leppington in the heart of the growth centre area. The NSW Government has estimated the project's capital cost at approximately \$2.4 billion, inclusive of connecting works at Glenfield, two new stations, rolling stock and a new train stabling facility at Leppington.

Some issues, for example, how train services from the new link would interact with the rest of the rail network, need to be further explored. In addition, opportunities to maximise the benefits of the project, for example, the possibility of an additional station to service residential areas to the north of the line, also warrant further attention.

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

Buses are the major form of public transport in Brisbane's eastern corridor. Current road traffic congestion is resulting in increased bus travel times as buses share the road with motor vehicles. The Eastern Busway aims to provide a dedicated bus-only roadway between the University of Queensland and Capalaba, with connections to the inner city busway network. Stage 1, from the University to Buranda, is now complete, and Stage 2a is under construction. The proposal to Infrastructure Australia is for Stage 2b (\$685 million) and Stage 3 (\$140 million), and includes a number of high density residential/commercial developments at key interchanges along the route.

NorthernLink (Brisbane City Council)

NorthernLink is the fourth of five 'Transapex' projects designed to relieve congestion on Brisbane's arterial roads. NorthernLink runs from the west of the city to the north, and consists of a 5 km tunnel connecting the Western Freeway and the Inner City Bypass, thus completing a motorway standard link across the north west of the city. The \$1.78 billion project is currently in procurement, and Brisbane City Council plans to charge a toll to recover some of the project costs.

Work to plan the integration of the road into the wider transport network (for instance through bus priority measures and new bus services) is ongoing. The project's successful integration will be essential to deliver benefits to users across Brisbane's wider transport network, and to ensure the project makes a sustainable contribution to Brisbane's future growth.

Brisbane Inner City Rail Capacity Upgrade – Cross River Rail (Queensland Government)

The Cross River Rail project is a proposed dual track rail line under Brisbane's inner suburbs and CBD, aimed at increasing rail capacity to meet projected demand. Passenger demand in morning peak periods to the inner city is forecast to increase three-fold by 2026. The project is estimated to cost around \$8 billion for the south to north corridor, and around \$6 billion for a second stage west to north corridor. The project has the potential to support implementation of the Queensland Government's and Brisbane City Council's land use plans.

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.

Darra to Springfield Rail and Road Project (Queensland Government)

The project involves proposed rail and road upgrades in the corridor between Darra and Springfield in western Brisbane to support substantial population growth planned for Brisbane's western corridor. Stage 1, Darra to Richlands, is estimated at \$800 million. Stage 2 Richlands to Springfield is a \$1.6 billion package of works including 11km of dual track railway, a new station and 9km of four lane motorway.

Melbourne Metro Stage 1 (Victorian Government)

Melbourne Metro Stage 1 is a proposed rail line 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. The Victorian Government proposes that the Melbourne Metro 1 tunnel would be extended at a future date from St Kilda Road to Caulfield, where it would connect with the Dandenong Rail Corridor. The estimated cost of the project is \$4.9 billion.

The project was identified as a 'priority' project in Infrastructure Australia's May 2009 report. Detailed feasibility studies (funded with a \$40million Australian Government grant) are under way. The project has an estimated benefit cost ratio by the proponent of 1.3 without wider economic benefits and 1.5 including a proportion of modelled wider economic benefits.

Melbourne Metro Stage 2 (Victorian Government)

Melbourne Metro Stage 2 represents the final two stages in the Victorian Government's seven stage Melbourne Rail Network Upgrade Program: Section 1 upgrades on the Dandenong line south of Caulfield; Section 2 is proposed to be a new tunnelled link from Caulfield to St Kilda Road (where Melbourne Metro 1 is proposed to terminate).

Melton Rail Line Duplication and Electrification (Victorian Government)

This project involves a combination of track duplication and electrification between Sunshine and Melton (approximately 15km), and additional passing loops between Melton and Ballarat. The project is aimed at enabling an improved suburban rail service to operate from Melton and improvements in the capacity, regularity and reliability of regional rail services to and from Ballarat/Wendouree. The project is estimated to cost \$1.3 billion.

North-West Sydney to CBD Rail Link (Australian Infrastructure Solutions)

The proposal is to build a dual track heavy rail line from Rouse Hill (in Sydney's North West) via Epping and Chatswood to the south side of the Sydney CBD. The private sector proponent estimates the cost of the project would be \$7 billion.

Sydney's Future Public Transport Network (New South Wales Government)

The NSW Government submitted the Central to Westmead Metro project to Infrastructure Australia. Since providing the submission, the NSW Government has reprioritised the project, although it has indicated that it would like to undertake the project in the future.

There is a strong need to further develop Sydney's public transport network to ensure that Sydney continues to develop on a sustainable basis. Infrastructure Australia will continue to work with the NSW Government to this end.

Managed Motorways (Queensland, NSW, South Australian, Victorian, and Western Australia Governments)

The operation of the motorway networks in major cities can be improved via the construction and retrofitting of intelligent transport systems. These measures include loop detectors, motorway ramp signals, and lane use management systems including variable speed limits and variable message signs. The \$4 billion suite of proposals includes applying a range of measures to motorways in South East Queensland, greater Sydney, Melbourne, Adelaide and Perth.

The Queensland managed motorways proposal was rated as a pipeline project in Infrastructure Australia's May 2009 report. Provided that (i) current studies to examine the impact of the proposals on the rest of the road network do not highlight significant negative impacts, (ii) the specific systems are designed to accommodate changes in road management practices, and (iii) confirmation of rigorous capital cost estimates then this project is ready to proceed.

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.

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. Elements of the project include: upgrades to the docks; urban regeneration; tertiary education housing redevelopment; expansion and refurbishment of the Hobart International Airport runway; and consolidation/development of polar research and logistical support. The project is estimated to cost in excess of \$90 million.

Gold Coast Rail (South East Queensland Council of Mayors)

This proposal is for upgrades and an extension of the existing passenger rail line from Varsity Lakes in the Gold Coast hinterland. The proposal is in two parts: capacity and reliability upgrades including duplication of the existing line between Coomera and Helensvale and a third track from Kuraby to Kingston (\$575 million), and an extension from Varsity Lakes to Elanora and Coolangatta Airport (\$2.3 billion).

Moreton Bay Rail Link
(Moreton Bay Regional Council/
Queensland Government)

The Moreton Bay region between Petrie and Redcliffe has experienced considerable population growth and development over recent years.

The proposed Moreton Bay Rail Link project is a dual track passenger rail spur line (approximately 15km in length) between Petrie Station, on the main North Coast Rail Line, and Kippa-Ring (Redcliffe) to the east. Six new rail stations, pedestrian and cycle facilities, park'n'ride facilities, and improved integration of the existing bus network are also proposed as part of the project. Stage 1 is estimated to cost \$1.1 billion.

Integrated Transit Corridor Development –
Route 86 Demonstration Project
(Victorian Government)

The \$28 million Route 86 Demonstration project in High Street, Darebin involves initiatives to intensify residential development along the tram route as well as measures to improve the speed and reliability of the tram service. This is Stage 2 of a three stage Integrated Transit Corridor Development Program. 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 proponent has estimated the project's benefit cost ratio at 4.0.

Priorities under the Adaptable and Secure Water Supplies Theme

Water Security Program
(Australian Capital Territory Government)

This program aims increase water security for the ACT by constructing a second wall at Cotter Dam (to increase storage from 4 to 78 GL), a pipeline to enable transfer of water from Murrumbidgee River to Googong Dam and the purchase of water entitlements. The estimated cost for the total program is \$551 million.

Tasmanian Water and Sewerage Reform
(Tasmanian Government)

This project aims to assist in the upgrade of water and sewerage infrastructure in regional Tasmania. The project would supplement existing plans for capital investment in water storage, treatment, distribution networks and waste water treatment by regional water authorities. This is estimated to cost in the order of \$1 billion over ten years.

Non-Urban Water Metering
(South Australian Government)

This project aims to establish a telemetric meter reading capability (and infrastructure) together with development of relevant metering standards. The project also aims to promote development of associated software so that stakeholders can use the data collected. It is estimated to cost \$105 million.

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

This project aims to expand high value agriculture using higher levels of irrigation, particularly in the North-West and North-East of the state.

Installation of Low Flow Bypass in Mount Lofty
Ranges (South Australian Government)

This project involves the installation of bypasses that would restrict access by water users during periods of low river flow. The project would enable flows to be reserved for environmental purposes at critical times, and is estimated to cost \$47 million.

Priorities under the National Energy Grid Theme

Smart Grid Demonstration Pilot Project (Australian Capital Territory Government)

This project aims to expand the existing smart grid pilot program in the ACT by increasing the number of smart meters installed from 4,000 homes and businesses to 10,000. The cost of the initiative is estimated to be \$150 million.

Heywood Interconnector Upgrade (South Australian Government)

This project seeks to augment the existing electricity transmission connection between South Australia and Victoria at Heywood. The project would potentially allow more renewable energy to be exported from South Australia and increase the overall capacity for energy flow. The project has an estimated cost of \$80 million.

Mid-West Energy – Stage 2 (Western Australia 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 estimated cost of the project is \$795 million.

Priorities under the International Gateways Theme

Road 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 a \$4 billion expansion to the M5 East Motorway, involving the duplication of the existing M5 East Freeway from Beverly Hills to Arncliffe to provide four lanes in each direction, and the provision of a new surface road (South Sydney connection) along the F6 Corridor.

Road Freight Access to Port of Brisbane – Port of Brisbane Motorway Upgrade (Queensland Government)

The Port of Brisbane is expected to experience continuing growth, placing pressure on the efficiency of freight and passenger movements. The proposed \$934 million dual carriage motorway linking the Gateway Motorway to the port precinct, together with other associated road upgrades in the port area, would accommodate the projected increases in road freight traffic to and from the port and gateway area.

Road Freight Access to Port of Melbourne – Westlink (Victorian Government)

Projected growth in traffic through the Port of Melbourne will place pressure on the efficiency of freight movements to and from the port. The Victorian Government is proposing a new 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 ports (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, which includes a 2km tunnel, has an estimated cost of \$5 billion.

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 a \$1.12 billion road link between the port and intermodal terminals at Penfield in the north of Adelaide. The proposed link includes space to accommodate a re-alignment of part of the interstate rail line through Adelaide.

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

The proposal involves the development of an intermodal terminal precinct on land presently used for Defence purposes at Moorebank in Sydney's south-west, comprising: 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.

Darwin Port Expansion
(Northern Territory Government)

Darwin's port activity is projected to increase significantly over the next 10 years to meet expected increases in iron ore, phosphate and minerals exports. A \$336 million expansion of the East-arm port in Darwin is proposed, and will include land reclamation, construction of new berth and loading facilities and a rail dump station.

In the May 2009 Budget, the Australian Government made provision for a possible \$50 million equity contribution to the project, pending recommendation of the projects by Infrastructure Australia, negotiations with the project proponents, and the establishment of an appropriate equity vehicle. Infrastructure Australia has been working with the Northern Territory Government to advance its plans and develop a robust and comprehensive business case.

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

Plans have been announced for major terminal expansion and consolidation on the Perth Airport International Terminal site. Efficient access for traffic and public transport is important for operation of the precinct, and this \$600 million initiative proposes road upgrades to the arterial network. There may also be scope for the provision of a rail link.

Oakajee Port Common-User Services
(Western Australia Government)

A multi-user and multi-functional port is proposed to support iron ore exports with capacity to accommodate large scale industrial development.

The Oakajee Port Common Use Infrastructure provides for the 2km breakwater, dredged port channel and navigation aids, to enable the development of iron ore export facilities. This infrastructure is an important component of the \$4 billion Oakajee Port and Rail project. It supports 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.

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, negotiations with 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.

Pilbara Cities
(Western Australia Government)

The Pilbara has been experiencing rapid economic growth in recent times and this is expected to continue. This has placed strains on the existing infrastructure. In order to help ensure that the Pilbara can support and deliver a skilled workforce to support future growth, the Western Australia Government has proposed \$2.9 billion of projects for Karratha and Port Hedland, including airport upgrades, water and communications infrastructure, land servicing and accommodation, and marina developments.

Bell Bay Intermodal Expansion Project
(Tasmanian Government)

The project involves a range of activities, including relocation of a rail line, dredging, reclamation, and creation of 'hardstand' area. Consolidation of future container freight growth at Bell Bay would free up space at Burnie Port for bulk exports, including mining product from the West Coast. The estimated project cost is \$150 million.

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

A number of submissions have been received relating to 'common user' infrastructure at Port Hedland. The WA Government has provided a submission relating to main channel deepening at the Port estimated to cost between \$500 million and \$1 billion. 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.

Abbot Point Multi Purpose Harbour
(Queensland Government)

The Queensland Government has identified Bowen/Abbot Point as the next major industrial hub and export facility in Queensland. It wishes to create capacity to accommodate industries of national and global significance and create sustainable employment opportunities for future generations. Decisions made in the next 12 months will determine the long-term scope of development at Abbot Point.

Stage 1 (a multi-cargo facility only) is estimated to cost \$690 million. with stage 2 (a multi-cargo facility, state development area and Bruce Highway bypass) estimated to cost \$2.2 billion.

Road and Rail Access and Port Upgrades at Bunbury (Western Australia Government, BPA/BWA/SWDC)

Infrastructure Australia received two submissions relating to the Port of Bunbury. Firstly, a WA Government proposal regarding the duplication of the rail line between Brunswick Junction and Bunbury Port estimated at \$63 million; and, secondly, a joint submission from the Bunbury Wellington Alliance, Bunbury Port Authority and the South West Development Commission, regarding a number of infrastructure projects to increase capacity and efficiency of Bunbury Port and associated supply chains costing an estimated \$756 million.

Melbourne International Freight Terminal
(Victorian Government)

This initiative involves the planning and development of a new freight terminal on the site to be vacated by the Melbourne Wholesale Market, estimated to cost \$260 million. This site is adjacent to Swanson Dock at the Port of Melbourne. The project is focused on handling of international shipping containers. It is associated with other terminal projects proposals in Melbourne, e.g. those that deal with interstate containers.

Port of Hastings Development including Peninsula Link Rail Freight Corridor
(Victorian Government)

This initiative comprises the environmental planning and business case studies for Stage 1 of the development of the Port of Hastings. The Port of Hastings is located approximately 30km south-east of the centre of Dandenong. It is currently made up of piers and wharves including the BlueScope Steel Wharf, the Long Island Point Jetty, the Crib Point Jetty and the Stony Point Jetty. The Port is the Victorian Government's preferred site for future container development, once capacity at the Port of Melbourne is reached. Port of Melbourne Corporation is being merged with Hastings Port Corporation. The project's planning and business case investigations are estimated to cost \$80 million.

Smart Port ICT
(Victorian Government)

This project will support the National Ports Strategy process being run by Infrastructure Australia. It aims to address information, communication and technology (ICT) systems requirements in the container supply chain.

The project seeks to develop a platform for national 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. It is supported by Ports Australia. The National Ports Strategy will recommend that ICT projects aim to increase the efficiency and reliability of the physical flow of freight across the ports and through land transport systems. The project is estimated to cost \$16 million.

Eyre Peninsula Port Proposals
(South Australian Government, Centrex Metals/Worley Parsons)

The proposals include Port Bonython from the South Australian Government, which involves the development of a bulk commodities export facility primarily to cater for the export of iron ores from South Australia. The request is to support a bankable feasibility study. Infrastructure Australia has more recently been advised by Centrex Metals and Worley Parsons of another potential port project on the Eyre Peninsula – Sheep Hill Port – for which a 'prefeasibility' study currently is underway.

Priorities under the National Freight
Network Theme

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

The Transcontinental Rail Link is a proposal to develop a 240km rail link from Yelta (near Mildura) to Menindee on the East-West Transcontinental Rail Line. The existing Mildura to Melbourne (via Geelong) line has recently been upgraded with 'gauge convertible' sleepers, new ballast and improved drainage. Under the proposal, the Mildura to Melbourne line would be converted to standard/dual gauge. The project has an estimated cost of \$400 million. The proponent is seeking financial support for a full feasibility study.

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 route for freight. To provide for improved efficiency, the proposed \$220 million Majura Parkway is to replace the existing Majura Road as the proposed freight bypass around the centre of Canberra. The project was rated as a priority project in Infrastructure Australia's May 2009 report. The project has an estimated benefit cost ratio by the proponent of 4.0.

Advanced Train Management Systems
(Australian Rail Track Corporation)

This is a satellite based train control system currently under trial by the Australian Rail Track Corporation. Such a system would enable a virtual, communications based 'safeworking' system with lower costs and possibly greater infrastructure capacity. It is estimated to cost \$500 million.

Western Interstate Freight Terminal
(Victorian Government)

Victoria Government originally proposed development of a terminal at Donnybrook on Melbourne's northern fringe. It is now assessing an alternative proposition for an Intermodal Terminal in Melbourne's western suburbs. This involves a new terminal and repositioning of the railway line, with a total cost estimate of \$2.314 billion.

The concept is that the development of the Donnybrook/Beveridge Interstate Rail Terminal should be 're-sequenced' to proceed when there is sufficient demand in Melbourne's north for additional interstate rail capacity. In the medium-term, an interstate rail freight terminal should be constructed in western Melbourne where the majority of rail customers are currently located. Terminal expansion in Melbourne would need to be matched with terminals in Sydney (Moorebank being the most likely option) and Brisbane.

Eastern Goldfields Railway Freight Gateway
Upgrade Project (WestNet Rail)

The Eastern Goldfields Railway is the standard gauge line between Kalgoorlie and Perth, forming part of the Defined Interstate Rail Network. The project is for remediation and improvement of track to engineering standards applicable to the Melbourne-Kalgoorlie segment of the Interstate Network and is estimated to cost \$75 million.

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

This proposal is for the elimination of two at grade rail crossings, five level crossings and associated works. The works are at Goodwood, three kilometres to the south west of the city; and in North Adelaide, 2.5 km to the north west of the city, where the standard gauge interstate railway linking Melbourne and Adelaide twice crosses the TransAdelaide urban passenger network; and station development. The project is estimated to cost \$418 million. This project was rated as having "Priority" Status in Infrastructure Australia's May 2009 report. The project has a benefit cost ratio by proponent of 1.5.

North-South Rail Freight Corridors –
including Northern Sydney Freight
(ARTC/ NSW 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 ARTC's NSW North Coast line.

The corridor also includes the proposed Inland Rail Route between Melbourne and Brisbane which would bypass the Sydney area.

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 ARTC 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 ARTC has identified further rail infrastructure works, and Infrastructure Australia will be working with the Corporation in assessing these proposals.

Mt Isa –Townsville Rail Corridor Upgrade
(Queensland Government)

The Northern Economic Triangle has been identified as a major mine and minerals province in north-west Queensland. It is primarily connected to ports on the north-east coast via an existing rail corridor.

The Mt Isa -Townsville Rail Infrastructure Master Plan 2009 identified a range of options for upgrading the system. The Plan estimated that adopting measures to improve rolling stock, 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 could cost \$74 million to \$788 million, depending on the solution adopted.

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

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 \$340 million road and rail program includes a new rail terminal at the Port of Portland, re-activation and upgrading of existing rail lines between Portland and Wolsely, roads upgrades on the Riddoch and Princes Highways, and a bypass of Penola.

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.

Bruce Highway Corridor Upgrades
(Queensland Government)

Many regional cities and towns on the Queensland coast between Brisbane and Cairns are growing population centres, servicing major industries and export gateways. The Bruce Highway is the primary road link between these growing centres, inland export industries and coastal ports and southern interstate freight routes.

Pacific Highway Corridor Upgrades
(NSW Government)

The Pacific Highway is a major freight route and interstate link between Sydney and Brisbane and supports major growing population, industrial and export centres and gateways. This highway continues to experience delays and congestion, as well as increasing demand for improved access for commercial and social activity. The cost estimate for the project is \$6.67 billion (\$2008). The project has an estimated benefit cost ratio by the proponent of 1.5.

The Australian Government has committed \$618 million in outturn costs for the Kempsey Bypass.