

Infrastructure Priority List

Project and Initiative Summaries



A prioritised
list of nationally
significant
infrastructure
needs

Infrastructure Australia is an independent statutory body that is the key source of research and advice for governments, industry and the community on nationally significant infrastructure needs.

It leads reform on key issues including means of financing, delivering and operating infrastructure and how to better plan and utilise infrastructure networks.

Infrastructure Australia has responsibility to strategically audit Australia's nationally significant infrastructure, and develop 15-year rolling infrastructure plans that specify national and state level priorities.

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Burrungkuy (Nourlangie), Kakadu National Park

Acknowledgement of Country

Infrastructure Australia acknowledges the Traditional Custodians of Australia, and pays respect to their Elders past, present and emerging. We pay respect to their continuing connection to land, and the continuation of their cultural, spiritual and educational practices.

In preparing for the future of our infrastructure, we acknowledge the importance of looking beyond the immediate past to learn from Aboriginal and Torres Strait Islander's unique history of land management and settlement, art, culture and society that began over 65,000 years ago.

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Chair's Foreword

I am pleased to launch the latest edition of the *Infrastructure Priority List*, the authoritative guide to the priority infrastructure investments Australia needs to secure a sustainable and prosperous future.

Australian communities rightly expect that infrastructure investment will be directed to the projects and initiatives that provide the greatest returns for them. Infrastructure Australia aims to deliver on this expectation through the Priority List, which provides independent, evidence-based advice to Australia's governments on the priority investments that will improve the quality of life of all Australians.

This year's Priority List features 37 new proposals and covers a wider range of sectors: across water, energy, health, waste, transport, telecommunications, arts and recreation. In total, the 2020 Priority List identifies 6 High Priority Projects, 17 Priority Projects, 36 High Priority Initiatives and 88 Priority Initiatives.

The Priority List is a collaborative document, supported by a robust evidence base. It is developed using data from the 2019 *Australian Infrastructure Audit* (the Audit) and submissions from all levels of government, industry and the community. This includes more than 200 submissions received in the last year alone.

This collaborative process, supported by Infrastructure Australia's independent and transparent assessment process, allows governments, industry and the community to have confidence in the Priority List as a credible list, addressing the issues most critical to Australian communities.

Consensus on where to invest is a critical issue in a period of unprecedented infrastructure demand and investment. This is not a short-term boom. A key finding of the Audit was that the historic level of activity we are seeing in the sector must continue for the next 15 years and potentially beyond. Now, in the wake of the national bushfire crisis, the floods in early 2019 and the ongoing drought, a new wave of infrastructure investment will be critical to rebuilding for affected communities.

What is clear from recent events is that our infrastructure networks face unprecedented risks. Climate change brings with it higher temperatures, unpredictable seasonal rainfall and water availability, more extreme winds, more extreme weather events and bushfire seasons the likes of which Australia has never seen. As we enter a new decade of infrastructure investment, we must plan for resilience in our infrastructure networks based on a stronger understanding of these risks.

Our planning and investment decisions need to be proactive in addressing future risk. Australia's emissions are among the highest in the world in per capita terms and our infrastructure accounts for more than half of the national total. Making our infrastructure more sustainable will be critical to protecting the quality of life of Australians. The Priority List supports proactive planning for emerging risks, such as the risk of coastal inundation, which was this year identified as a High Priority Initiative in response to the issue of rising sea levels over the next 15 years.

The Priority List has a strong record of driving national investment and has become a key reference point for governments at all levels. There are seven infrastructure proposals graduating off the list this year alone as they enter the delivery phase, providing solutions to urban congestion and national connectivity in New South Wales, Victoria, Western Australia and South Australia (see **Appendix A**). Additionally, a number of proposals have been updated this year as they have been taken up by new proponents, progressed to new stages or adapted to new challenges.

The progress of the National Freight and Supply Chain Strategy, which was recommended in the 2016 Priority List and the *Australian Infrastructure Plan*, is one example of how the Priority List drives action. In response to our listing of the initiative, the Australian Government announced the development of the Strategy, which was completed in 2019. Continuing this progress, we are pleased to list an updated initiative this year that focuses on the implementation phase of the Strategy.

This edition of the Priority List provides a comprehensive view of the critical infrastructure challenges and opportunities required over the next 15 years. The breadth of sectors covered by the Audit has enabled a more diverse *Infrastructure Priority List*. Compared with the 2015 Audit, the 2019 Audit took a greater focus on user outcomes, in terms of access, quality and cost for Australian communities, and an expanded scope that considered social infrastructure. This has supported the inclusion of new national initiatives in the Priority List, such as a Priority Initiative to ease capacity constraints for the John Hunter Health and Innovation Precinct in New South Wales (page 109).

While the Priority List relies in large part on the submissions of proponents, the extensive data collected for the Audit also allows Infrastructure Australia to identify critical issues for which we have not received a submission but have identified as a national priority. This ensures we address the issues shaping the liveability of our nation, including water security and transforming our energy sector.

In this year's Priority List, we have added 9 new initiatives independently identified by Infrastructure Australia, across the water, waste, road maintenance, telecommunications and arts sectors. We identify these initiatives to focus on these national issues and encourage investment. We look forward to supporting government and industry to tackle these initiatives and, as ever, to collaborating with them to build strong business cases that lead to good projects.

This year's Priority List includes three new initiatives focused on water security, including a High Priority Initiative calling out the need for a national water strategy. The Australian Government has recognised the significance of securing future water security by establishing the National Water Grid Authority, and we look forward to collaborating with this new body on the investments and policy reforms best placed to respond to this challenge.

Additionally, the Audit identified significant challenges facing our energy markets, which are highly complex and sensitive to change. This sector is undergoing transformation, adapting to new generation sources and consumer preferences, against a backdrop of climate change and ongoing policy uncertainty. The result has been reduced affordability for users and concerns about reliability.

The Priority List outlines the investments needed to optimise the National Electricity Market in the near term and improve connectivity and reliability in the medium to longer term. It also includes a new initiative to transform the South West Interconnected System (the electricity network that services the majority of Western Australia's population) in order to successfully integrate significant levels of utility-scale renewables and distributed energy resources.

The *Infrastructure Priority List* now includes 16 initiatives for national infrastructure programs. These proposals recognise challenges and opportunities for our infrastructure networks that are having impacts across the country and require a coordinated response: for example, the national initiative for waste and recycling management. By raising the profile of these issues we wish to provoke action in every jurisdiction, as well as exploration into tailored, local solutions. All of the initiatives identified on the Priority List are focused on defining the problems or opportunities, with the next step being for proponents to develop a range of solutions to respond to them.

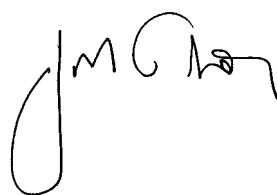
Another example is this year's addition of a national program for Indigenous art and cultural facilities (see page 102). A national program developing such facilities would support Aboriginal and Torres Strait Islander artists by creating more employment opportunities, and has potential to improve wellbeing, educate people on Aboriginal and Torres Strait Islander cultures, and improve national identity. This initiative recognises the high demand for Aboriginal and Torres Strait Islander culture and art in Australia from both domestic and international visitors and the contribution such a program could make to the national economy.

The value of highlighting such nation-wide issues can be seen in the national initiative for regional road network safety improvements. Between 2008 and 2016, relative to population size, the number of fatalities in regional areas was over four times greater than for major cities over the same period. In 2019, having received a NSW Government submission on safety on regional roads throughout New South Wales, we recognised

the national significance of this issue and developed a national initiative for regional road safety. This year we have been pleased to collaborate with the Western Australian Government to add a new High Priority Initiative for regional and rural road network safety improvements in that state, providing a basis for tailored local solutions to this national problem.

The Priority List has successfully sparked investment and action on key challenges and opportunities for our infrastructure markets. We will continue to use this valuable tool for investment reform and to work with governments and industry to drive action and improve the quality of infrastructure business cases across the country.

I thank all the diverse contributors to the Priority List. We rely on input from all levels of government, the business sector and the community to maintain this evidence-based list and to develop the projects and initiatives that will shape Australia's future. We look forward to continuing this collaborative effort to improve the standard of infrastructure planning and delivery across the country and improve the quality of life of all Australians.



Julieanne Alroe
Chair, Infrastructure Australia

Introduction

The *Infrastructure Priority List* provides a credible pipeline of nationally significant proposals for governments at all levels to choose from. It provides evidence-based advice to support an informed national conversation about Australia's spending priorities.

The Priority List is maintained and developed by Infrastructure Australia, the nation's independent infrastructure advisor. It aims to direct Australia's governments to the projects and initiatives that will deliver world-class infrastructure services to all Australians across the energy, telecommunications, water, social and transport sectors.

The Priority List is informed by the independent research of Infrastructure Australia, alongside extensive collaboration with government, industry and the community. It has become a key reference point for Australia's governments at all levels to guide infrastructure decision-making and supports industry confidence and forward planning.





Albany Wind Farm, Western Australia

Developing the 2020 Infrastructure Priority List

The *Infrastructure Priority List* is a collaborative document. It is developed using data from the 2019 *Australian Infrastructure Audit* and submissions from state and territory governments, industry and the community. This included more than 200 submissions in the last 12 months alone.

Infrastructure Australia regularly conducts strategic audits of Australia's infrastructure networks, most recently in the 2019 *Australian Infrastructure Audit*. The Audit covers transport, energy, water, telecommunications and – for the first time – social infrastructure. It looks at the major challenges and opportunities facing Australia's infrastructure over the next 15 years and beyond. The data and findings of the Audit provide an up-to-date evidence base for assessing the nation's infrastructure priorities.

Proposals are assessed for inclusion on the Priority List using Infrastructure Australia's detailed Assessment Framework. The Framework acts as a guide for understanding the problem or opportunity that a given project is trying to solve, whether it has strategic value, and whether it represents good value for taxpayers.

Through this process, Infrastructure Australia promotes long-term, integrated land use planning and helps guide governments towards public infrastructure investments that will deliver the necessary outcomes for the community at the best value.

A live document

Infrastructure Australia accepts submissions to the *Infrastructure Priority List* at any time.

New projects are added to the Priority List as the Infrastructure Australia Board receives and assesses project business cases. The Priority List is also reviewed and updated as evidence-based proposals for nationally significant initiatives move through stages of development and delivery.

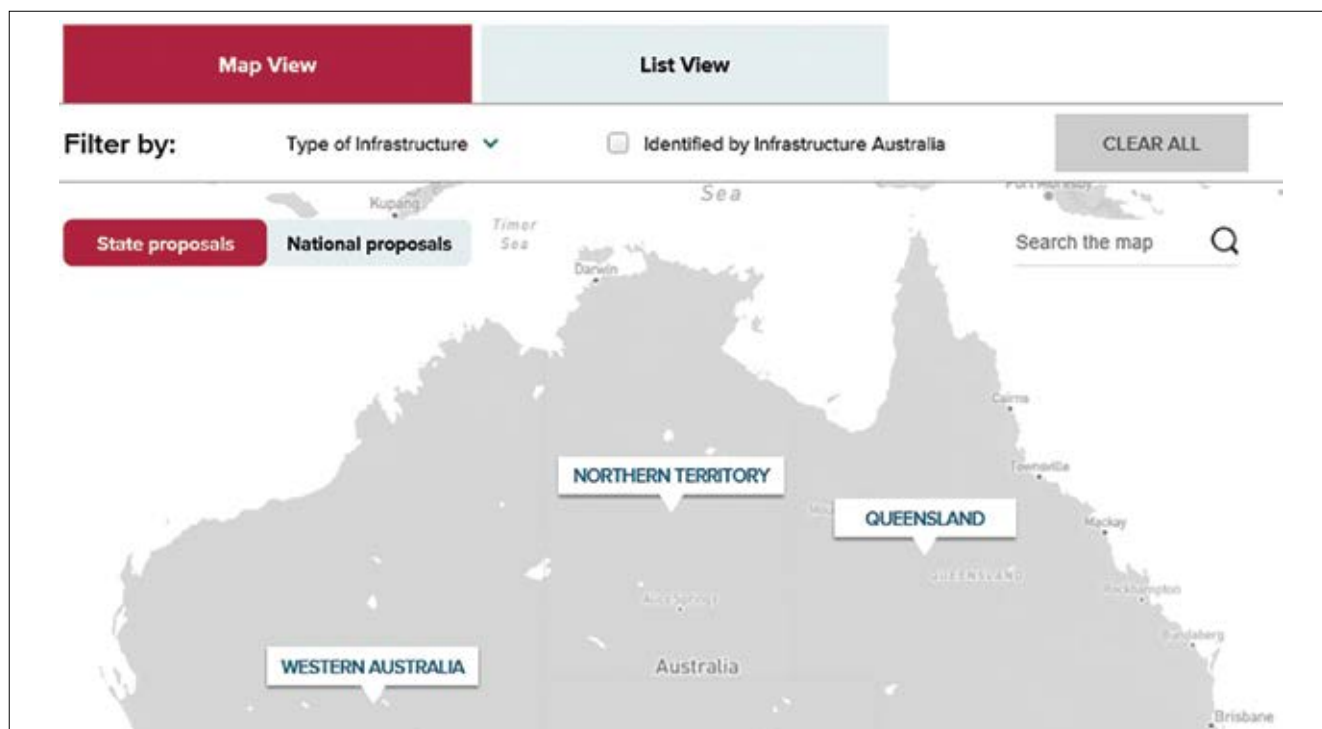
This makes the Priority List a live document that evolves over time to meet emerging challenges and opportunities.

The Priority List is also available as an interactive map on the Infrastructure Australia website. The online map sets out a detailed view of infrastructure problems and opportunities identified around the country:

www.infrastructureaustralia.gov.au

The map provides the most up-to-date view of the nationally significant investments Australia needs to meet its infrastructure challenges, and is continually updated alongside the Priority List.

The interactive map allows you to search the Priority List based on your interests and to find proposals based on the state, territory or region where they would be delivered, the type of infrastructure they represent and whether they were identified independently by Infrastructure Australia.



Interactive *Infrastructure Priority List* on the Infrastructure Australia website

How we assess infrastructure proposals

Infrastructure Australia receives infrastructure proposals throughout the year from proponents across the country and evaluates them against a rigorous evaluation framework, which is outlined in our publicly available Assessment Framework.

Routinely updated to ensure it remains current and user-friendly, the Assessment Framework aims to stimulate and support high-quality proposal development.

The Assessment Framework requires project proponents to show that they have:

1. clearly identified the problem they are seeking to solve or the opportunity they are seeking to realise
2. undertaken detailed options analysis to consider a full range of innovative, deliverable solutions and developed shortlisted options through a structured process
3. prepared a robust business case that adequately justifies the strategic merit of the proposal, calculates all appropriate costs and benefits for each shortlisted option, and demonstrates how each option will be delivered.

This transparent process ensures confidence in the investments listed, which have clearly demonstrated their significance to the nation.

Infrastructure Australia updates the Assessment Framework regularly to ensure it is practical to use and proponents have the clearest guidance possible to develop high-quality proposals.

The next update to the Assessment Framework is due for release in 2020. It will be informed by a customer experience review of Infrastructure Australia's assessment process and by a program of engagement with stakeholders across the country.

What makes a proposal nationally significant?

The *Infrastructure Australia Act 2008* defines nationally significant infrastructure as infrastructure 'in which investment or further investment will materially improve national productivity'.

An infrastructure investment is nationally significant if, based on the evidence presented, the Infrastructure Australia Board expects the investment to have a material impact on national output by:

1. addressing a problem that would otherwise impose economic, social and/or environmental costs; or
2. providing an opportunity for realising economic, social and/or environmental benefits; or
3. both addressing a problem and providing an opportunity.

As a guide, for the purposes of assessing submissions to the *Infrastructure Priority List*, Infrastructure Australia has applied a threshold value of \$30 million per annum (nominal, undiscounted) in measuring material net benefit, taking potential unquantified quality-of-life considerations into account.

Infrastructure Australia expects potential impacts cited in submissions to be quantified and supported by evidence, but recognises that some types of social and environmental impacts may not be readily quantifiable.

Proposals are considered against three key criteria:

1. Strategic fit (as in, alignment with policy priorities, such as meeting Closing the Gap targets).
2. Social, economic and environmental value.
3. Deliverability.

How to read the Priority List

Proposals on the *Infrastructure Priority List* are divided into two broad groups:

- **Projects** are advanced proposals that have a full business case, which Infrastructure Australia has assessed as capable of addressing a nationally significant problem or opportunity and delivering robust economic, social or environmental outcomes. Projects remain on the Priority List until delivery or construction begins.
- **Initiatives** are proposals that Infrastructure Australia has determined have the potential to address a nationally significant problem or opportunity. Infrastructure Australia includes them on the Priority List to indicate that further development and rigorous assessment of these proposals is a national priority.

These proposals are again divided into two categories, **High Priority** and **Priority**, to indicate the comparative significance of the problems or opportunities they address. We use these categories in order to direct decision maker's attention to the most critical issues, while also offering a comprehensive view of all problems and opportunities of national significance.

By including initiatives alongside more advanced projects, and highlighting the most critical issues, we encourage decision makers to take proactive steps to develop solutions to future problems and opportunities, and to think strategically about coordinated solutions and preserving infrastructure corridors.

For each proposal, we have also identified which geographic region will be impacted. The different categories of geography are detailed in **Table 1** below.

The Priority List also includes information about the timeframes for each proposal. For projects, the timeframe indicates the proponent's estimation of when the project is likely to be delivered and operational. For initiatives, the timeframe refers to when the impacts of the problem or opportunity are likely to become nationally significant.

These timeframes are defined as:

- near term (0–5 years)
- medium term (5–10 years)
- longer term (10–15 years).

This publication includes a one-page summary for each project and initiative. The summaries for projects include details of when the business case was evaluated by Infrastructure Australia, as well as funding commitments, if they have been published. Initiative summaries include the date the initiative was first added to the list, enabling readers to track how initiatives have evolved over time.

We have added a **What's new** section (page 12) to this edition to make it easier for readers to identify which projects and initiatives have been added to the Priority List since the February 2019 release and which projects and initiatives have been updated.

Table 1: Geography categories used in the *Infrastructure Priority List*

	Fast-growing cities: Sydney, Melbourne, Brisbane and Perth.
	Smaller cities and regional centres: Smaller capital cities, satellite cities and regional centres home to more than 10,000 people.
	Small towns, rural communities and remote areas: Small towns with populations of fewer than 10,000 people and more than 200 people, regional communities with fewer than 200 people, and all remote areas outside of recognised settlements, including connecting infrastructure.
	Developing regions and northern Australia: Developing regions with strong growth prospects and where industry composition is changing, and northern Australia, including a mix of regions across the Northern Territory, and the northern parts of Queensland and Western Australia.

Projects that were previously included on the Priority List, but now have major work contracts signed and are being delivered, are listed in **Appendix A**.

A full **Glossary** of terms used in this publication is available at page 196.

Information about funding

The funding commitments quoted in project summaries are based on information provided to Infrastructure Australia by project proponents. For some projects, committed funding exceeds the estimated capital cost. This is usually because the cost estimate was revised after the funding commitment was made. Not all projects with funding commitments are fully funded.

Funding commitments are a matter for project proponents and governments, and Infrastructure Australia does not take account of funding commitments when evaluating business cases.

How we drive better infrastructure decision-making

The *Infrastructure Priority List* is just one tool used by Infrastructure Australia to strengthen the quality of infrastructure business cases across the country.

As part of maintaining the Priority List, and in our broader role supporting best practice in the sector, Infrastructure Australia collaborates with proponents, government officials and their advisors to improve the quality of business case development and infrastructure service delivery across the country.

Since 2017, we have run a national series of Business Case Improvement workshops, which have been attended by more than 600 stakeholders. These workshops create a forum to discuss decision-making methods in infrastructure business cases, improving the quality of infrastructure proposals submitted to the *Infrastructure Priority List* and raising the standard of future infrastructure investments.

In these workshops, and in our broader engagement with proponents, we support them to identify the best options to meet the challenges and opportunities of the future, grounded in rigorous cost-benefit analysis and outcomes for local communities.

Additionally, Infrastructure Australia developed the *Infrastructure Decision-making Principles* to provide a clear set of guidelines intended to drive greater transparency and accountability in infrastructure decision-making. These principles establish a benchmark for high-quality infrastructure decision-making and are embedded in the Assessment Framework, which guides Infrastructure Australia's assessment of proposals for the Priority List.

The Principles recommend that project proponents identify potential infrastructure needs in response to quantified infrastructure problems, and invest in development studies to scope potential courses of action and associated risks. Proponents should consider a full range of options, particularly those that make better use of existing infrastructure, or pursue reform of regulatory and pricing settings.

Another key principle is that project proponents should assess the viability of a range of funding options and look to minimise the call on public funds. Proponents should determine a fair funding split between taxpayers, users and other beneficiaries.

The Principles also highlight the importance of post-completion reviews in assessing a project's delivery against the expectations in the business case. Proponents should report on whether the strategic and economic case for a project has been realised over time, assess whether the project was delivered on time and on budget, and whether unforeseen risks emerged and were successfully managed. These reviews, often overlooked, provide important lessons for governments, industry and the community regarding what worked and what did not.

Infrastructure Australia will continue to work collaboratively with proponents to improve the quality of infrastructure business cases across the country and to develop best practice in the industry.

For more information on Infrastructure Australia's *Infrastructure Decision-making Principles*, visit www.infrastructureaustralia.gov.au

What's new

This edition of the *Infrastructure Priority List* features 37 new infrastructure proposals, added since the last publication of the Priority List in February 2019.

This section lists all new projects and initiatives featured in this edition, along with eight initiatives that have been updated with new information since February 2019. Some initiatives, for example, have been taken up by a new proponent or progressed to a new stage.

These additions and updates ensure that the *Infrastructure Priority List* remains an invaluable source of up-to-date guidance for Australia's governments and

a comprehensive roadmap of the priority investments Australia needs over the next 15 years.

Projects that have been removed from the Priority List because they have commenced construction are listed in **Appendix A** (see page 190). Additionally, *Cross River Rail* and *Canberra CBD to north corridor* were listed as initiatives and have also graduated off the Priority List this year as construction commenced or has been completed.

New proposals added to the Priority List since February 2019

New Priority Projects (12)

Project name	Problem/opportunity description	Page
New South Wales		
Nowra Bridge	Shoalhaven River crossing capacity	45
Queensland		
Gold Coast Light Rail Stage 3A	Public transport connectivity between Broadbeach and Burleigh Heads	46
M1 Pacific Motorway Eight Mile Plains to Daisy Hill	Motorway capacity between Brisbane and the Gold Coast	48
M1 Pacific Motorway Varsity Lakes to Tugun	Motorway capacity between Brisbane and the Gold Coast	49
Bruce Highway Deception Bay Road Interchange	Road capacity at Deception Bay	50
Bruce Highway Caboolture-Bribie Island Road to Steve Irwin Way	Highway capacity between Brisbane and the Sunshine Coast	51
Bruce Highway Maroochydore Road Interchange	Road capacity at Maroochydore on the Sunshine Coast	52
Bruce Highway Cooroy to Curra Section D: Woondum to Curra	Highway capacity between Cooroy and Curra	53

Project name	Problem/opportunity description	Page
Bruce Highway Cairns Southern Access Corridor Stage 3: Edmonton to Gordonvale	Road network capacity south of Cairns	54
Peak Downs Highway Realignment Walkerston Bypass	Freight connectivity in north-east Queensland	55
Western Australia		
Bindoon Bypass	Freight connectivity between Perth and north-west Western Australia	56
Tasmania		
University of Tasmania Northern Transformation Program	Opportunity to stimulate economic growth and productivity in Tasmania	60

New High Priority Initiatives (8)

Initiative name	Problem/opportunity description	Page
National		
Town and city water security	Water supply and resilience for town and city populations	65
National water strategy	Strategic planning for water capture, use and management	66
Coastal inundation protection strategy	Sea-level rise and flooding impacts	67
National waste and recycling management	Waste management and recycling challenges	68
National road maintenance strategy	Maintenance backlog and preventative maintenance	69
Queensland		
Queensland National Land Transport Network maintenance	National Land Transport Network upgrade	92
Western Australia		
Regional and rural WA road network safety improvements	Safety on regional and rural roads in Western Australia	96
Perth water security	Water supply and resilience for Perth	97

New Priority Initiatives (17)

Initiative name	Problem/opportunity description	Page
National		
Indigenous art and cultural facilities program	Opportunity for a national program of Indigenous art and cultural centres	102
Mobile telecommunications coverage in regional and remote areas	Mobile telecommunications connectivity in regional and remote areas	103
Sydney–Canberra rail connectivity and capacity	Rail connectivity between Sydney and Canberra	105
East coast deep water container port capacity	Capacity for container ships on the east coast of Australia	108
New South Wales		
John Hunter Health and Innovation Precinct capacity	Capacity constraints and opportunity for new services	109
Great Western Highway improvements Katoomba to Lithgow	Road connectivity between Katoomba and Lithgow	124
Princes Highway safety and capacity Nowra, NSW to Victorian border	Road connectivity between Nowra and Victorian border	125
South Creek integrated land use and water cycle management	Opportunity for integrated water cycle management benefits	133
Victoria		
Cycling access to Melbourne CBD	Cycling access to Melbourne CBD	135
Frankston public transport connectivity	Public transport connectivity to Frankston	137
Queensland		
Queensland inland road network upgrade	Improvements for national, state and local roads located in inland Queensland	155
Western Australia		
Great Northern Highway improvements Broome to Kununurra	Road connectivity between Broome and Kununurra	163
Wheatbelt Secondary Freight Network improvements	Western Australia freight network capacity	164
South Coast Highway improvements Albany to Esperance	Road connectivity between Albany and Esperance	167
South West Interconnected System transformation	Provision of affordable and reliable electricity services	171
Liquefied Natural Gas research facility	LNG capability and innovation	172
Port Hedland port capacity	Opportunity for increased cargo imports and exports	173

Initiatives that have been updated

The following initiatives have been updated since February 2019:

Priority Projects (2)

Project name	Reason/s for change	Page
New South Wales		
Shoalhaven River crossing capacity (now Nowra Bridge)	Graduated from a Priority Initiative to a Priority Project in August 2019.	45
Queensland		
Broadbeach – Burleigh Heads public transport connectivity (now Gold Coast Light Rail Stage 3A)	Graduated from Priority Initiative to a Priority Project in August 2019.	46

High Priority Initiatives (2)

Initiative name	Reason/s for change	Page
National		
National Freight and Supply Chain Strategy Implementation	The Strategy is now completed and the initiative now refers to implementation.	72
New South Wales		
Public transport capacity Parramatta Road and Victoria Road corridors	Proponent now NSW Government (was originally an initiative independently identified by Infrastructure Australia).	79

Priority Initiatives (4)

Initiative name	Reason/s for change	Page
New South Wales		
Western Harbour Tunnel and Beaches Link	Changed problem timeframe from longer term to medium term	117
Southern Sydney Freight Line upgrade	Proponent now Australian Rail Track Corporation (was previously NSW Government).	126
Sydney cruise terminal capacity	Progressed from initiative identification and options development to business case development.	132
Western Australia		
Tonkin Highway corridor capacity	Expanded to incorporate congestion around Byford. Initiative renamed to Perth south-east corridor capacity improvements .	169

The Priority List

Below is the full list of projects and initiatives included on the 2020 *Infrastructure Priority List*.







Each proposal has been categorised according to its priority, location, timeframe, the type of issue it concerns and, for initiatives, the stage the proposal has reached.

For further details on **how to read the Priority List** see page 10.


Category key and description

	Asset Renewal	Replacing or refurbishing an existing asset to return it to its original level of service and extend its life.
	Corridor Preservation	Protection and early acquisition of land needed for future infrastructure delivery, to save on land purchase and construction costs.
	Efficient Markets	Lowering barriers-to-entry and fostering competition to make better use of resources and minimise costs for businesses and consumers.
	National Connectivity	Improving the ease of movement from one part of Australia to another, for people, goods and services.
	Opportunity for Growth	An option that, if implemented, will unlock latent demand and enhance the total production of goods and services in the Australian economy.
	Remote Infrastructure	Delivery of quality services and infrastructure in remote areas of Australia to improve quality of life for residents and enhance opportunities for social and economic development.
	Resilience	Enhancing the capacity and reliability of Australia's infrastructure networks and the Australian economy to regenerate after a particular shock and recover rapidly to the previous level of service or better.
	Road Safety	Reducing the risk and number of crashes, injuries and deaths on Australia's roads.
	Social Infrastructure	The provision of facilities, spaces, services and networks that support the quality of life and wellbeing of our communities. This includes a variety of sectors: health and aged care; education; green and blue infrastructure (assets that incorporate natural vegetation and waterways), and recreation; arts and culture; social housing; justice and emergency services.
	Urban Congestion	Addressing excess traffic movements on transport networks in Australia's cities and regions.

High Priority Projects

Project name	Problem/opportunity description	Delivery timeframe (years)	Category	Page
New South Wales				
M4 Motorway upgrade Parramatta to Lapstone	Connectivity in outer western Sydney	0-5		36
Sydney Metro: City and Southwest	Sydney rail network capacity	0-5		37
Western Sydney Airport	Sydney aviation capacity	5-10		38
Victoria				
M80 Ring Road upgrade	Melbourne M80 Western Ring Road congestion	0-5		39
North East Link	Connectivity between M80 and M3 in outer north-east Melbourne	5-10		40
Queensland				
Brisbane Metro	Brisbane inner-city public transport network capacity	0-5		41

Priority Projects

Project name	Problem/opportunity description	Delivery timeframe (years)	Category	Page
National				
Inland Rail Melbourne to Brisbane via inland NSW	Freight connectivity between Melbourne and Brisbane	5-10		44

Category



Asset Renewal



Corridor Preservation



Efficient Markets



National Connectivity



Opportunity for Growth



Remote Infrastructure



Resilience



Road Safety












Social Infrastructure



Urban Congestion

Priority Projects

Project name	Problem/opportunity description	Delivery timeframe (years)	Category	Page
New South Wales				
Nowra Bridge	Shoalhaven River crossing capacity	0-5		45
Queensland				
Gold Coast Light Rail Stage 3A	Public transport connectivity between Broadbeach and Burleigh Heads	0-5		46
Beerburrum to Nambour rail upgrade	Queensland north coast rail congestion	0-5		47
M1 Pacific Motorway Eight Mile Plains to Daisy Hill	Motorway capacity between Brisbane and the Gold Coast	0-5		48
M1 Pacific Motorway Varsity Lakes to Tugun	Motorway capacity between Brisbane and the Gold Coast	0-5		49
Bruce Highway Deception Bay Road Interchange	Road capacity at Deception Bay	0-5		50
Bruce Highway Caboolture-Bribie Island Road to Steve Irwin Way	Highway capacity between Brisbane and the Sunshine Coast	0-5		51
Bruce Highway Maroochydore Road Interchange	Road capacity at Maroochydore on the Sunshine Coast	0-5		52
Bruce Highway Cooroy to Curra Section D: Woondum to Curra	Highway capacity between Cooroy and Curra	0-5		53

Category



Asset Renewal



Corridor Preservation



Efficient Markets



National Connectivity



Opportunity for Growth



Remote Infrastructure



Resilience



Road Safety



Social Infrastructure



Urban Congestion

Priority Projects

Project name	Problem/opportunity description	Delivery timeframe (years)	Category	Page
Bruce Highway Cairns Southern Access Corridor Stage 3: Edmonton to Gordonvale	Road network capacity south of Cairns	0-5		54
Peak Downs Highway Realignment Walkerston Bypass	Freight connectivity in north-east Queensland	0-5		55
Western Australia				
Bindoon Bypass	Freight connectivity between Perth and north-west Western Australia	0-5		56
Myalup–Wellington water project	Opportunity to develop industry and agriculture in south-west Western Australia	0-5		57
South Australia				
Eyre Infrastructure Project Iron Road	Eyre Peninsula freight capacity	0-5		58
Tasmania				
University of Tasmania Hobart Science and Technology Precinct	Opportunity to stimulate economic growth and productivity in Tasmania	0-5		59
University of Tasmania Northern Transformation Program	Opportunity to stimulate economic growth and productivity in Tasmania	0-5		60

Category



Asset Renewal



Corridor Preservation



Efficient Markets



National Connectivity



Opportunity for Growth



Remote Infrastructure



Resilience



Road Safety



Social Infrastructure



Urban Congestion

High Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
National					
Regional road network safety improvements	Safety on regional roads	0-5		Proponent(s) to be identified	64
Town and city water security	Water supply and resilience for town and city populations	0-15		Proponent(s) to be identified	65
National water strategy	Strategic planning for water capture, use and management	0-5		Proponent(s) to be identified	66
Coastal inundation protection strategy	Sea-level rise and flooding impacts	10-15		Proponent(s) to be identified	67
National waste and recycling management	Waste management and recycling challenges	0-5		Proponent(s) to be identified	68
National road maintenance strategy	Maintenance backlog and preventative maintenance	0-5		Proponent(s) to be identified	69
Network Optimisation Program Rail	National urban rail network congestion	0-5		Proponent(s) to be identified	70
Network Optimisation Program Roads	National urban road network congestion	0-5		Proponent(s) to be identified	71
National Freight and Supply Chain Strategy Implementation	National strategic planning for future freight initiatives	0-5		Initiative identification and options development	72
Corridor preservation for East Coast High Speed Rail	Future rail connectivity between east coast capital cities	0-5		Proponent(s) to be identified	73

Category



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High Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Remote housing overcrowding	National remote housing conditions	0-5		Proponent(s) to be identified	74
National Electricity Market Future connectivity and reliability	Connectivity of the National Electricity Market regions	5-15		Proponent(s) to be identified	75
National electric vehicle fast-charging network	Enabling infrastructure	0-5		Proponent(s) to be identified	76
New South Wales					
Regional NSW road network safety improvements	Safety on regional roads in New South Wales	0-10		Initiative identification and options development	77
Sydney Gateway Connection between WestConnex at St Peters and Sydney Airport/Port Botany	Sydney road network capacity	0-5		Business case development	78
Public transport capacity Parramatta Road and Victoria Road corridors	Congestion on Sydney's Parramatta Road and Victoria Road corridors	0-5		Initiative identification and options development	79
Sydney rail network capacity	Sydney rail network capacity	0-5		Business case assessment	80
Southern Sydney to CBD public transport enhancement	Connectivity between inner south urban growth area and Sydney CBD	5-10		Initiative identification and options development	81
Sydney Metro West Mass transit between Parramatta and Sydney CBD	Connectivity between Parramatta and Sydney CBD	5-10		Business case development	82

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High Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Port Botany freight rail duplication	Sydney freight rail network capacity	0-5		Business case assessment	83
Chullora Junction upgrade	Sydney freight rail network capacity	0-5		Initiative identification and options development	84
Corridor preservation for Western Sydney Airport fuel pipeline	Future fuel connection to Western Sydney Airport	0-5		Initiative identification and options development	85
Corridor preservation for Western Sydney Freight Line and Intermodal Terminal access	Future freight rail capacity to Eastern Creek intermodal and Sydney Main West Line	0-5		Business case development	86
Corridor preservation for Outer Sydney Orbital road and rail / M9, and Castlereagh connection	Future connectivity between Western Sydney and Central Coast/Illawarra	0-5		Initiative identification and options development	87
Corridor preservation for Western Sydney Airport rail connections	Future rail connections to Western Sydney Airport	0-5		Initiative identification and options development	88
Victoria					
Eastern Freeway and CityLink connection	Connectivity between Melbourne's Eastern Freeway and CityLink	0-5		Proponent to be identified	89
Melbourne rail network capacity	Melbourne rail network capacity	5-10		Initiative identification and options development	90
Corridor preservation for Melbourne Outer Metropolitan Ring Road/E6	Future connectivity between Melbourne outer south-west and outer north	0-5		Proponent to be identified	91

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High Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Queensland					
Queensland National Land Transport Network maintenance	National Land Transport Network upgrade	0-5		Initiative identification and options development	92
Ipswich Motorway Upgrade Rocklea to Darra (remaining sections)	Southern Brisbane–Ipswich road network capacity	0-5		Business case development	93
M1 Pacific Motorway capacity Eight Mile Plains to Tugun	Motorway capacity between Brisbane and the Gold Coast	0-5		Various stages	94
Port of Brisbane dedicated freight rail connection	Freight rail access to Port of Brisbane	5-10		Proponent to be identified	95
Western Australia					
Regional and rural WA road network safety improvements	Safety on regional and rural roads in Western Australia	0-5		Initiative identification and options development	96
Perth water security	Water supply and resilience for Perth	0-5		Initiative identification and options development	97
Perth CBD to north corridor capacity	Perth northern corridor capacity	0-5		Various stages	98
Mitchell and Kwinana freeways upgrade	Perth road network capacity	0-10		Initiative identification and options development	99

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
National					
Indigenous art and cultural facilities program	Opportunity for a national program of Indigenous art and cultural centres	0-5		Proponent(s) to be identified	102
Mobile telecommunications coverage in regional and remote areas	Mobile telecommunications connectivity in regional and remote areas	0-5		Proponent(s) to be identified	103
Advanced Train Management System implementation on the interstate rail network	Rail freight capacity constraint on the interstate rail network	0-5		Business case development	104
Sydney–Canberra rail connectivity and capacity	Rail connectivity between Sydney and Canberra	0-5		Initiative identification and options development	105
Connection between eastern gas markets and gas suppliers	Constrained east coast gas supply	0-5		Proponent(s) to be identified	106
National Electricity Market Near-term optimisation	Optimisation of the National Electricity Market	0-5		Proponent(s) to be identified	107
East coast deep water container port capacity	Capacity for large container ships on the east coast of Australia	10-15		Proponent(s) to be identified	108
New South Wales					
John Hunter Health and Innovation Precinct capacity	Capacity constraints and opportunity for new services	10-15		Initiative identification and options development	109
Active transport (walking and cycling) access to Sydney CBD	Inner city access to Sydney CBD	0-5		Business case development	110

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Sydney CBD motorways optimisation	Inner Sydney road network capacity	0-5		Initiative identification and options development	111
Prospect Highway capacity	Western Sydney road network capacity	0-5		Business case development	112
A3 and A6 corridor capacity	Southern Sydney to Ryde road network capacity	0-5		Business case development	113
Public transport access to Parramatta CBD	Public transport access to Parramatta CBD	0-10		Initiative identification and options development	114
Central Station redevelopment Rail and station infrastructure	Redevelopment of rail and station infrastructure at Central Station	5-10		Initiative identification and options development	115
M6 Motorway Connection between the M1 Princes Motorway at Waterfall and the Sydney motorway network	Connectivity between Wollongong and Sydney	5-10		Business case development	116
Western Harbour Tunnel and Beaches Link	Sydney road network cross-harbour and Northern Beaches connectivity	5-10		Business case development	117
Newell Highway upgrade	Connectivity between Melbourne and Brisbane	0-5		Business case development	118
Pacific Highway (A1) Coffs Harbour bypass	Connectivity between Sydney and Brisbane	0-5		Business case development	119
Pacific Motorway (M1) Extension to Raymond Terrace	Connectivity between Sydney and Brisbane	0-5		Business case development	120

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Western Sydney Infrastructure Plan	Access to Western Sydney and Western Sydney Airport	0-5		Various stages	121
Freight rail access to Port Kembla	Freight rail access to Port Kembla	0-5		Initiative identification and options development	122
Moorebank Intermodal Terminal road connections upgrade	Road network connectivity to Moorebank Intermodal Terminal	0-5		Initiative identification and options development	123
Great Western Highway improvements Katoomba to Lithgow	Road connectivity between Katoomba and Lithgow	0-5		Initiative identification and options development	124
Princes Highway safety and capacity Nowra, NSW to Victorian border	Road connectivity between Nowra and Victorian border	0-5		Initiative identification and options development	125
Southern Sydney Freight Line upgrade	Southern Sydney to Moorebank rail freight capacity	10-15		Business case development	126
New England Highway upgrade	Road connectivity between Sydney and Brisbane	5-10		Business case development	127
Picton Road safety and capacity	Road connectivity between Wollongong and south-west Sydney	5-10		Initiative identification and options development	128
Western Sydney Airport public transport connections	Access to Western Sydney Airport	5-10		Initiative identification and options development	129
Northern Sydney Freight Corridor Stage 2 Additional track West Ryde to Rhodes and Thornleigh to Hornsby	Sydney freight rail network capacity	5-10		Business case development	130

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Newcastle–Sydney and Wollongong–Sydney rail line upgrades	Connectivity between Newcastle, Wollongong and Sydney CBD	10-15		Initiative identification and options development	131
Sydney cruise terminal capacity	Berthing capacity for cruise ships in Sydney	0-5		Business case development	132
South Creek integrated land use and water cycle management	Opportunity for integrated water cycle management benefits	0-5		Business case development	133
Hawkesbury-Nepean Valley flood management	Flood mitigation in Hawkesbury-Nepean Valley	0-5		Business case development	134
Victoria					
Cycling access to Melbourne CBD	Cycling access to Melbourne CBD	0-5		Initiative identification and options development	135
Melbourne level crossings removal	Melbourne road network congestion	0-5		Various stages	136
Frankston public transport connectivity	Public transport connectivity to Frankston	0-5		Initiative identification and options development	137
Melbourne Airport to the CBD public transport capacity	Public transport access to Melbourne Airport	5-10		Initiative identification and options development	138
Melton Rail Line upgrade	Melbourne rail network capacity	5-10		Initiative identification and options development	139
Public transport access to Fishermans Bend	Connectivity between Fishermans Bend growth area and Melbourne CBD	5-10		Initiative identification and options development	140

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Cranbourne Line capacity	Melbourne rail network capacity	5-10		Initiative identification and options development	141
Hurstbridge Line capacity	Melbourne rail network capacity	5-10		Business case development	142
Melbourne outer northern suburbs to CBD capacity upgrade	Melbourne outer northern suburbs access to CBD	10-15		Proponent(s) to be identified	143
Melbourne Airport third runway	Melbourne aviation capacity	0-5		Business case development	144
Melbourne container terminal capacity and land transport access	Melbourne container terminal capacity	0-15		Initiative identification and options development	145
Melbourne–Geelong rail capacity enhancement	Rail connectivity between Melbourne and Geelong	10-15		Initiative identification and options development	146
Queensland					
Brisbane to Gold Coast transport corridor upgrades	Brisbane to Gold Coast transport capacity	0-5		Various stages	147
Gold Coast Rail Line capacity Kuraby to Beenleigh	Brisbane to Gold Coast rail network capacity	0-5		Initiative identification and options development	148
Centenary Motorway capacity	Southern Brisbane to CBD road network capacity	0-5		Initiative identification and options development	149
Cunningham Highway Yamanto Interchange to Ebenezer Creek	Cunningham Highway–Yamanto to Ebenezer/Amberley congestion	0-5		Business case development	150

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Warrego Highway east corridor improvements	Road connectivity between Brisbane and Toowoomba	0-5		Initiative identification and options development	151
Bruce Highway upgrade	Queensland coastal cities connectivity	0-10		Various stages	152
Mount Isa–Townsville rail corridor upgrade	Mount Isa to Townsville rail capacity	5-10		Business case development	153
Port of Gladstone land and sea access upgrade	Land and sea access to Port of Gladstone	5-10		Initiative identification and options development	154
Queensland inland road network upgrade	Improvements for national, state and local roads in inland Queensland	5-10		Proponent to be identified	155
Lower Fitzroy River water infrastructure development	Opportunity to develop industry and agriculture in Fitzroy region	0-5		Business case assessment completed in July 2018	156
Corridor preservation for Salisbury to Beaudesert rail connection	Future urban rail connection between Salisbury and Beaudesert	0-5		Business case development	157
Western Australia					
Armadale Road bridge	Perth road network capacity	0-5		Initiative identification and options development	158
Swan River crossing capacity	Perth road network capacity	0-5		Initiative identification and options development	159
Perth rail network capacity	Perth rail network capacity	0-5		Various stages	160

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Transport connectivity between Morley and Ellenbrook	Perth transport network capacity	10-15		Business case assessment	161
Canning Bridge crossing capacity and interchange	Perth transport network capacity	10-15		Proponent(s) to be identified	162
Great Northern Highway improvements Broome to Kununurra	Road connectivity between Broome and Kununurra	0-5		Initiative identification and options development	163
Wheatbelt Secondary Freight Network improvements	Western Australia freight network capacity	0-5		Initiative identification and options development	164
Bunbury Outer Ring Road	Western Australia regional freight network capacity	5-10		Business case development	165
Perth Airport new runway	Perth Airport capacity	5-10		Initiative identification and options development	166
South Coast Highway improvements Albany to Esperance	Road connectivity between Albany and Esperance	5-10		Initiative identification and options development	167
Perth container terminal capacity and land transport access	Perth container terminal capacity	10-15		Initiative identification and options development	168
Perth south-east corridor capacity improvements	Perth road network capacity	0-15		Initiative identification and options development	169
Land transport access between Karratha and Tom Price	Road connectivity between Karratha and Tom Price	0-5		Initiative identification and options development	170

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
South West Interconnected System transformation	Provision of affordable and reliable electricity services	0-5		Initiative identification and options development	171
Liquefied natural gas research facility	LNG capability and innovation	0-5		Initiative identification and options development	172
Port Hedland port capacity	Opportunity for increased cargo imports and exports	5-10		Initiative identification and options development	173
Road access improvements for remote WA communities	Constrained road access to remote Western Australia communities	0-5		Initiative identification and options development	174
South Australia					
Adelaide North–South Corridor upgrade (remaining sections)	Adelaide north–south urban road network capacity	0-5		Business case development	175
AdeLINK tram network Adelaide tram network expansion	Adelaide public transport capacity	5-10		Business case development	176
Spencer Gulf crossing capacity	Road connectivity in Port Augusta	0-5		Initiative identification and options development	177
Strzelecki Track upgrade and mobile coverage	Access to Cooper Basin (South Australia)	0-5		Business case development	178
South Australian regional bulk port development	South Australia bulk port capacity	5-10		Business case development	179
Sturt Highway High Productivity Vehicle capacity enhancement, including Truro bypass	South Australia road freight network capacity	5-10		Initiative identification and options development	180

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Gawler Craton rail access	Freight rail connection to Gawler Craton mineral province	10-15		Initiative identification and options development	181
Tasmania					
Derwent River crossing capacity	Tasmania Derwent River crossing capacity	5-10		Business case development	182
Burnie to Hobart freight corridor improvement	Freight network planning	5-10		Business case development	183
Tasmanian sewerage infrastructure upgrades	Tasmanian waste water treatment environmental compliance	0-5		Initiative identification and options development	184
Tasmanian irrigation schemes Tranche 3	Opportunity to develop industry and agriculture in Tasmania	5-10		Business case development	185
Australian Capital Territory					
Canberra public transport improvements	Canberra public transport capacity	5-10		Initiative identification and options development	186

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Priority Initiatives

Initiative name	Problem/opportunity description	Timeframe (years)	Category	Next steps	Page
Northern Territory					
Enabling infrastructure and essential services for remote NT communities Wadeye, Tiwi Islands, Jabiru	Infrastructure services for remote Northern Territory communities	0-5		Business case development	187
Tanami Road upgrade	Constrained access to the Tanami region	0-5		Business case development	188
Darwin region water supply infrastructure upgrades	Darwin water supply security	5-10		Initiative identification and options development	189

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Urban Congestion

High Priority Projects

Summaries





Road freight truck, Australia

High Priority Projects

M4 Motorway upgrade

Parramatta to Lapstone

Location

Western Sydney, NSW

Geography

Fast-growing cities

Category

Urban Congestion

Indicative delivery timeframe

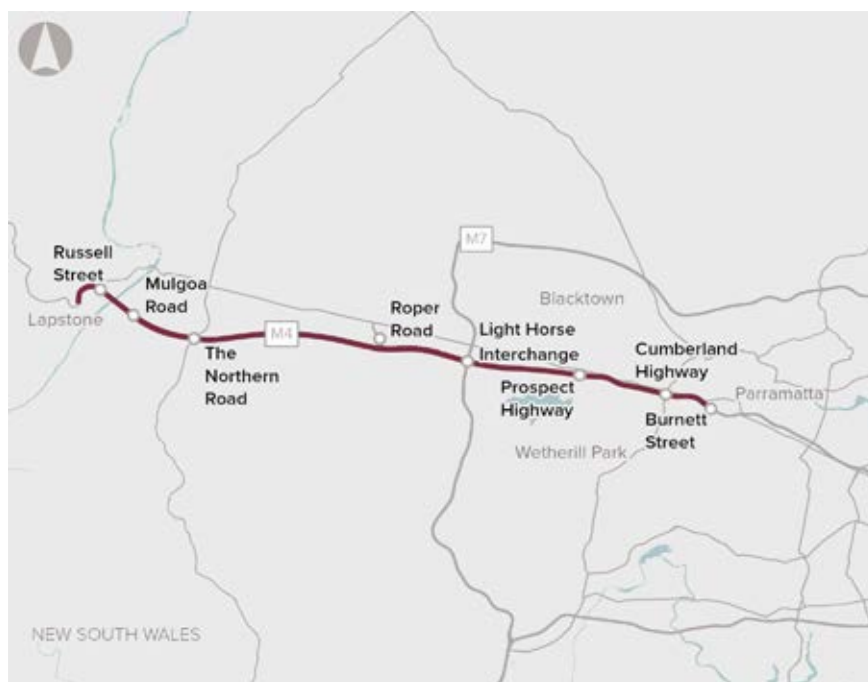
Near term (0–5 years)

Proponent

NSW Government

Evaluation date

14 April 2016



Problem to be addressed

Demand on the M4 Motorway in Sydney routinely exceeds capacity during peak periods, resulting in congestion and travel delays. Transport modelling undertaken for the 2015 *Australian Infrastructure Audit* noted that the corridor had a volume to capacity ratio of 1.1 in 2011 for both morning and afternoon peaks.

Greater Western Sydney currently accounts for almost 10% of Australia's population, and the M4 provides the area with an important east–west connection. The population of the main M4 catchment area is expected to grow by 44.5% (around 490,000 people) between 2011 and 2031. Nearby developments, such as the Western Sydney Airport at Badgerys Creek and the Western Sydney Employment Area, will also add to the demand on the corridor. Without action, the impact of the current capacity constraint will increase over time.

Project description

The project covers a range of measures aimed at making better use of the existing M4 infrastructure and increasing capacity along a 35 km section of the M4 between Mays Hill (near Parramatta) and Lapstone at the base of the Blue Mountains.

The 'better use' components include:

- the introduction of Intelligent Transport System measures, including ramp signals, vehicle detection devices and electronic signage
- upgrades to entry and exit ramps
- new freight bypass lanes at three entry ramps – westbound at the M7 and the Prospect Highway, and eastbound at Roper Road, Colyton – which would give priority to trucks and improve merging onto the motorway
- a new communications and power 'backbone' along the motorway.

The project also includes the construction of an additional lane in each direction in the median along a 4.3 km section of the motorway, between the Roper Road and M7 interchanges. This widening was completed in 2019.

Economic, social and environmental value

Economic benefits of the project include shorter travel times, improved travel-time reliability and road safety, and increased journey opportunities, all of which will boost productivity. Other benefits include reduced vehicle emissions, and real-time information on road conditions to allow better journey decision-making for drivers.

The proponent's stated benefit-cost ratio is 5.3, with a net present value of \$2,640 million (7% real discount rate).

High Priority Projects

Sydney Metro: City and Southwest

High-frequency rail connection between Chatswood and Bankstown via Sydney CBD

Location

Northern, central and south-western Sydney, NSW



Geography

Fast-growing cities

Category

Urban Congestion

Indicative delivery timeframe

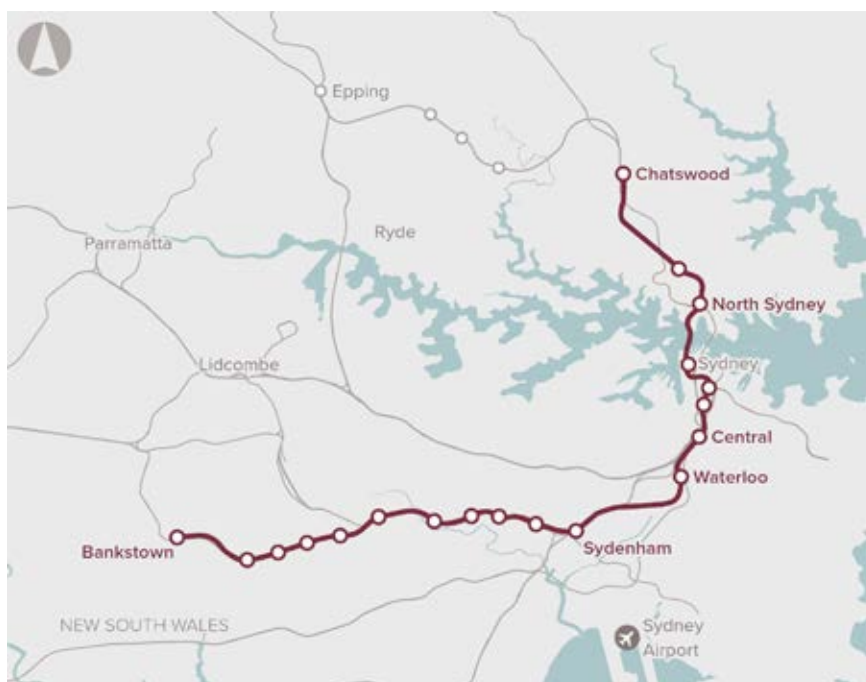
Near term (0–5 years)

Proponent

NSW Government

Evaluation date

14 June 2017



Problem to be addressed

The rail network servicing Sydney's CBD is currently near capacity at peak periods, and some key routes are expected to reach capacity in the early 2020s. By 2036, demand is expected to exceed network capacity, causing material impacts on service accessibility, dwell times, and crowding in stations and trains. This will affect the overall reliability of the rail network, particularly where it provides access to the CBD.

The cost of these transport network constraints has been estimated at \$2 billion in lost economic benefits per year over the next 30 years. A significant increase in transport capacity in key parts of the network, especially servicing the CBD and the corridor extending from the Airport through the CBD and north to Macquarie Park, will assist in realising employment growth and increased productivity.

Project description

Sydney Metro City & Southwest is the second stage of the broader Sydney Metro project. It will deliver 30.5 km of metro rail between Chatswood and Bankstown. The project has two stages: a 17.1 km section between Chatswood and Sydenham that is primarily tunnelled; and a 13.4 km section between Sydenham and Bankstown, involving conversion of the existing Bankstown rail line to metro operations.

The project includes new underground metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Central and Waterloo. The project will increase rail capacity through the Sydney CBD, improve capacity and reliability on the rest of the rail network, and enhance resilience of the wider transport network by delivering a second harbour rail crossing.

Economic, social and environmental value

The project's major benefits will be for public transport users through travel-time savings and reliability improvements. New metro stations will improve accessibility to existing suburbs and precincts. The project will contribute to reducing rail and road congestion and enable housing and employment growth.

The proponent's stated benefit-cost ratio for conventional benefits is 1.3, with a net present value of \$2,775 million (7% real discount rate).

High Priority Projects

Western Sydney Airport

Location

Western Sydney, NSW



Geography

Fast-growing cities

Category

National Connectivity

Indicative delivery timeframe

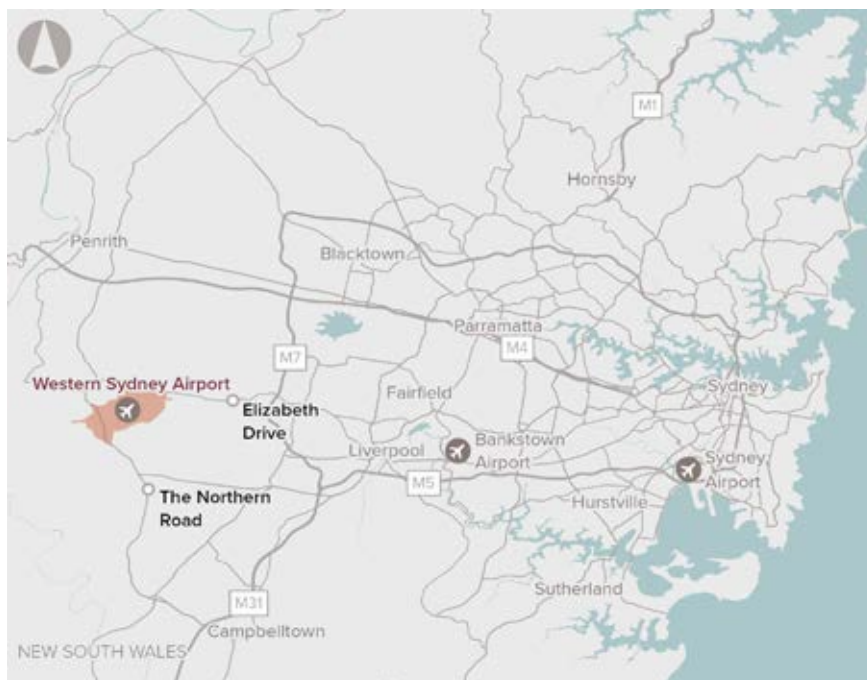
Medium term (5–10 years)

Proponent

Australian Government

Evaluation date

21 October 2016



Problem to be addressed

Sydney is Australia's primary aviation gateway, accounting for around 40% of international services, 43% of domestic services, and 45% of international air freight. The demand for flights in the Sydney region is forecast to double over the next 20 years, beyond the capacity of Sydney (Kingsford Smith) Airport.

Airports are critical economic assets. Constraints on Sydney's airport capacity would increase the cost of accessing Sydney, with a significant negative impact on Australia's economy and national productivity.

The 2015 *Australian Infrastructure Audit* identified the need for additional airport capacity in the Sydney Basin, and the February 2016 *Infrastructure Priority List* identified development of a Western Sydney Airport as a High Priority Initiative.

Project description

Western Sydney Airport will be a full service airport catering for domestic and international passengers, as well as freight services, initially with a single 3,700 m runway and facilities for 10 million passengers per annum. Construction commenced in 2018 and the airport is scheduled to open in 2026.

Western Sydney Airport will be developed in stages as demand grows. A second runway will be added when needed. In 2063, the airport is expected to accommodate approximately 82 million passengers annually.

The Australian Government has committed to developing Western Sydney Airport through a Commonwealth company, Western Sydney Airport Company Limited.

This Commonwealth company will build and operate Western Sydney Airport. The Australian Government will act as the airport regulator and ensure the project meets all necessary design and environmental requirements, such as flight-path design and biodiversity. The Australian Government and NSW Government are planning and delivering road and rail connections to the airport.

Economic, social and environmental value

Addressing Sydney's airport capacity constraint will improve productivity and facilitate broader economic impacts such as increased trade, tourism and foreign direct investment. It will also provide wider economic benefits such as agglomeration benefits derived from improved connectivity between businesses (including the clustering of airport businesses).

The proponent's stated benefit-cost ratio is 1.9, with a net present value of \$5,441 million (7% real discount rate), not including wider economic benefits.

High Priority Projects

M80 Ring Road upgrade

Location
Melbourne, Vic

Geography
Fast-growing cities

Category
Urban Congestion

Indicative delivery timeframe
Near term (0–5 years)

Proponent
Victorian Government

Evaluation date
7 September 2016



Problem to be addressed

The M80 Metropolitan Ring Road connects major population centres in Melbourne's north and west to the CBD and elsewhere, and facilitates access to Melbourne's port, airports and other major road corridors. Congestion on the M80 is increasing average travel times in the area, which imposes significant costs on business. Congestion also produces negative social and environmental impacts as a result of increased travel time and fuel consumption, and higher vehicle crash rates. Projected population and economic growth in centres to the west and north of Melbourne is likely to increase these problems.

The 2015 *Australian Infrastructure Audit* identified capacity constraints along the corridor as a significant problem, and found that without additional investment the annual cost of congestion along the corridor is projected to grow from \$86 million in 2011 to \$161 million in 2031.

Project description

The project proposes to complete three sections of the freeway that have yet to be upgraded. These are:

- Plenty Road to Greensborough Highway (2.4 km)
- Princes Freeway to Western Highway (7.9 km)
- Sydney Road to Edgars Road (4 km).

The project would widen the existing road to a minimum of three through-lanes in each direction, with auxiliary lanes between interchanges where required, and implement Intelligent Transport Systems infrastructure.

Construction of the sections from Plenty Road to Greensborough Highway, and Sydney Road to Edgars Road, is expected to start in 2019 and be completed in late 2021.

Economic, social and environmental value

The project will deliver significant economic benefits in the form of travel-time savings and associated social and environmental benefits, including reduced fuel consumption costs and lower vehicle crash rates.

The proponent's stated benefit-cost ratio is 2.0, with a net present value of \$553 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2015 business case) \$686.9 million (P50, nominal, undiscounted)
Australian Government contribution \$500 million for four stages | **State government contribution** \$178.4 million.

High Priority Projects

North East Link

Location

North-east Melbourne,
Vic



Geography

Fast-growing cities

Category

Urban Congestion

Indicative delivery timeframe

Medium term (5–10 years)

Proponent

Victorian Government

Evaluation date

18 October 2018



Problem to be addressed

There is currently a 'missing link' between the M80 Metropolitan Ring Road in Melbourne's north and the M3 Eastern Freeway–EastLink in Melbourne's east and south-east. The current route – using Greensborough Highway, Rosanna Road, Banksia Road and Bulleen Road, spanning approximately 9.5 km – is congested and operating close to capacity during peak periods, limiting commercial and freight transport activities.

Each day, these roads carry around 250,000 trips between the north-east and inner Melbourne, and around 340,000 orbital trips.

Further population growth in these areas, along with the future expansion of major industrial precincts in the north and south-east, will generate even higher traffic volumes, making local road congestion worse. Orbital trips are forecast to reach 440,000 per day by 2036, an increase of nearly 30%.

Project description

The North East Link project would create a new 11 km connection (including 5 km of three-lane twin tunnels) between the M80 Metropolitan Ring Road at Greensborough and the M3 Eastern Freeway at Doncaster. The project also includes:

- approximately 2.3 km of upgrades to the M80, and approximately 9.7 km of upgrades to the Eastern Freeway
- five new interchanges
- around 10.6 km of new bus lanes
- upgrades to Bulleen Road
- new walking and cycling paths.

Implementing managed motorway technology on the Eastern Freeway will ensure the freeway integrates effectively with the North East Link and keeps pace with increasing traffic volumes and changing travel demands.

Economic, social and environmental value

The project is expected to deliver large economic benefits, including travel time and reliability improvements, and environmental and safety benefits.

The proponent's stated benefit-cost ratio for the project is 1.3, with a net present value of \$2,187 million (7% real discount rate).

High Priority Projects

Brisbane Metro

Location
Brisbane, Qld

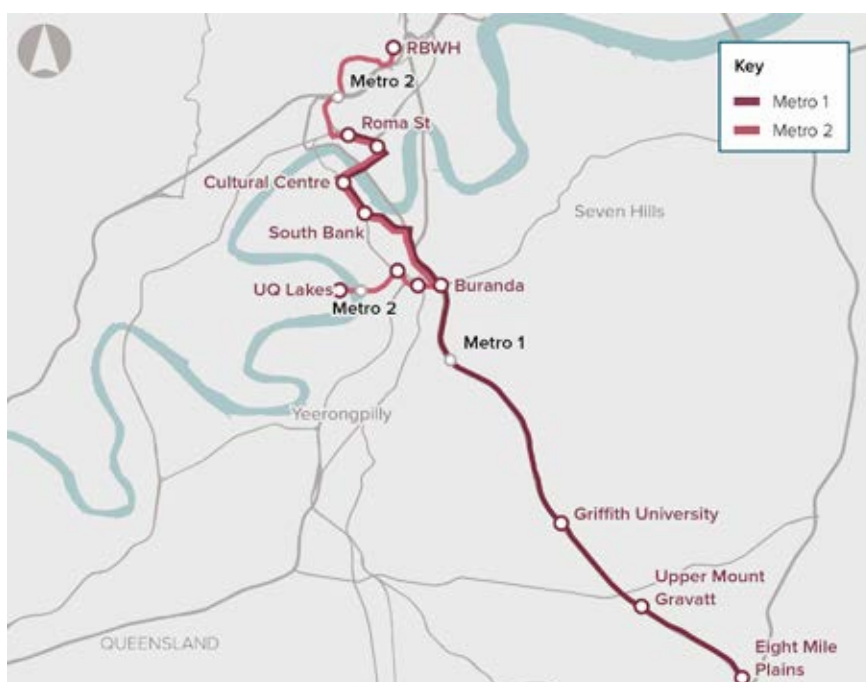
Geography
Fast-growing cities

Category
Urban Congestion

Indicative delivery timeframe
Near term (0–5 years)

Proponent
Brisbane City Council

Evaluation date
16 February 2018



Problem to be addressed

Capacity constraints on the inner-city Brisbane bus network are leading to slower and less reliable public transport journeys. Demand for public transport is increasing, driven by employment growth centred in the inner city, while most population growth is occurring in middle-ring and outer suburbs. In 2016, an average of 368,000 passengers boarded buses each day in Brisbane. This is projected to grow to 581,000 passengers each day by 2031, a 58% increase.

The existing Brisbane busway network includes 25 km of dedicated bus corridor, but buses are delayed at key intersections where they compete with other traffic. This is leading to long bus queues and services not arriving on time. Bus stations are also congested, with limited platform capacity and inefficient customer boarding practices.

In the absence of additional public transport capacity, further strong growth in commuter trips into Brisbane from the fast-growing areas of South East Queensland will exacerbate congestion issues, resulting in nationally significant productivity losses.

Project description

Brisbane Metro proposes a set of infrastructure and non-infrastructure changes to bus services in inner Brisbane. These comprise removing key infrastructure bottlenecks on the busway network, including constructing a new underground station and a tunnel, using longer, higher-capacity Metro vehicles with faster and easier boarding and alighting, and revised service patterns to increase frequency and truncate lower-use services.

The project would complement Cross River Rail by providing for interchange between the bus and rail networks at Boggo Road and at Roma Street.

Economic, social and environmental value

The project will deliver significant economic benefits in the form of travel time savings, decongestion benefits, and associated social and environmental benefits such as lower air pollution and greenhouse gas emissions through a mode shift from private to public transport.

The proponent's stated benefit-cost ratio is 2.4, with a net present value of \$1,235 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2017 business case) \$944 million (P90, nominal, undiscounted) | **Australian Government contribution** \$300 million | **State government contribution** To be determined | **Private sector contribution** To be determined.

Priority Projects

Summaries



Narrabri Australia Telecommunications Tower

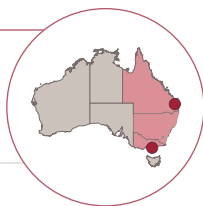
Priority Projects

Inland Rail

Melbourne to Brisbane via inland NSW

Location

Melbourne to Brisbane
via inland NSW



Geography

National

Category

National Connectivity

Indicative delivery timeframe

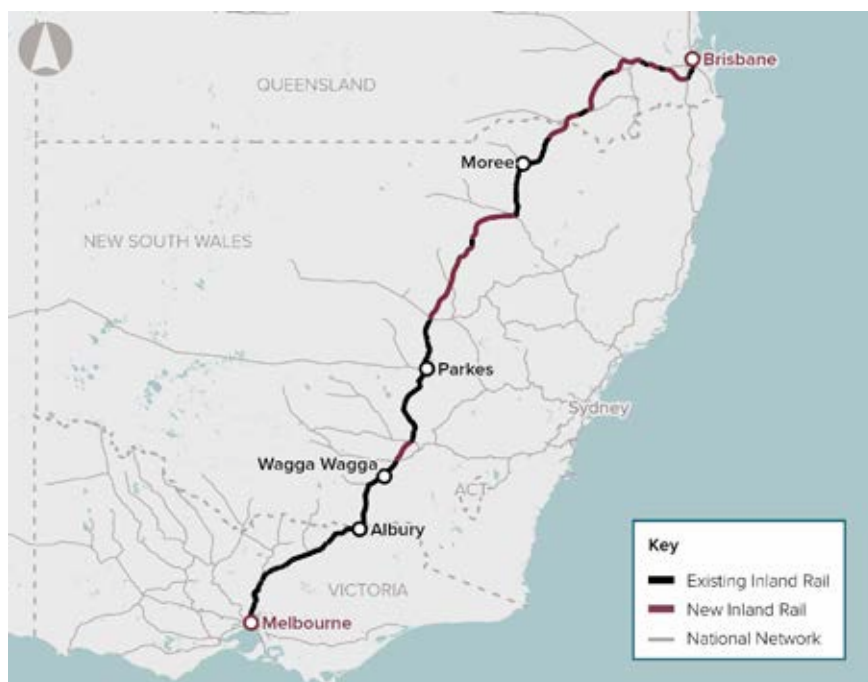
Medium term (5–10 years)

Proponent

Australian Government

Evaluation date

6 May 2016



Problem to be addressed

Demand for freight transport along the Melbourne to Brisbane corridor is expected to grow substantially over coming decades, from approximately 4.9 million tonnes in 2016 to around 13 million tonnes, or 1.1 million containers (twenty-foot equivalent units or TEUs), by 2050. This increased demand will require additional freight capacity in the corridor.

The current rail connection between Melbourne and Brisbane, via Sydney, cannot offer the transit times and reliability required by industry. This is largely a function of poor rail alignments and capacity constraints, particularly on the section between Sydney and Brisbane, and delays on freight transiting the Sydney metropolitan area. The current road connection between Melbourne and Brisbane via inland New South Wales offers faster transit times than rail via Sydney. However, much of the road is two-lane single carriageway, with limited passing lanes. Without additional capacity, transit times on this corridor will increase as freight volumes rise.

Project description

The project involves developing a freight rail line of approximately 1,700 km between Melbourne and Brisbane via inland Victoria, New South Wales and Queensland. Around 40% of the proposed route would be constructed as new railway, or converted from narrow gauge to dual gauge in Queensland. Existing narrow gauge connections between Brisbane and regional centres would be maintained. The remainder of the route would utilise and, where necessary, upgrade existing standard gauge track in Victoria and New South Wales.

The project will be delivered to achieve the service specification of a less than 24-hour transit time between Melbourne and Brisbane for the benchmark train, being a 21 tonne axle load, 115 km/h double-stacked and up to 1,800 m long train.

Trains operating the service would have capacity to carry up to 485 containers (TEUs) when capacity for longer 3,600 m, double-stacked trains is introduced over time.

Economic, social and environmental value

Key benefits of the proposed project include improved productivity, improved network efficiency and reliability, shorter transit times, safety improvements, sustainability benefits and reduced lifecycle costs.

The proponent's stated benefit-cost ratio is 1.1 (7% real discount rate).

Priority Projects

Nowra Bridge

Location

Nowra, NSW



Geography

Smaller cities and regional centres

Category

National Connectivity

Indicative delivery timeframe

Near term (0–5 years)

Proponent

NSW Government

Evaluation date

23 August 2019



Problem to be addressed

The Princes Highway is the main north–south link between Sydney and southern New South Wales via the Illawarra and Shoalhaven regions. It is the main connecting route for coastal communities and carries a mix of freight and passenger traffic for local, long-distance and tourism trips.

At Nowra, the Princes Highway crosses the Shoalhaven River via the Nowra Bridge, which comprises a steel bridge built in 1881 for southbound traffic, and a concrete bridge built in 1981 for northbound traffic. There are no other crossings of the river on the coastal plain.

Over 51,000 vehicles use the crossing every day and this is forecast to grow by 1.4% per year between 2026 and 2036. Heavy congestion is experienced on the Nowra Bridge and nearby Princes Highway intersections during the morning and afternoon peak periods.

Crash rates along this route are also worse than the New South Wales average for the same class of road.

Project description

The Nowra Bridge project involves the construction of a new four-lane bridge immediately to the west (upstream) of the existing bridges, which would become the new crossing for northbound traffic. The existing northbound bridge would be converted for southbound traffic, allowing the much older southbound bridge to be re-purposed for community uses.

The project has strategic merit as it supports local, regional and tourist traffic, and allows for more efficient movement of freight on this important highway.

Economic, social and environmental value

The major economic benefit of the project is travel-time savings for passenger and freight vehicles from improved capacity and traffic flows. The project would also improve safety on the road.

The proponent's stated benefit-cost ratio is 2.2, with a net present value of \$268 million (7% real discount rate).

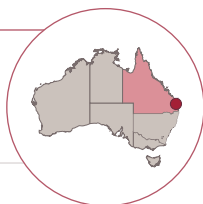
Priority Projects

Gold Coast Light Rail

Stage 3A

Location

Gold Coast,
Queensland



Geography

Smaller cities and regional centres

Category

Urban Congestion

Indicative delivery timeframe

Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

23 August 2019



Problem to be addressed

The Queensland Government expects the population of the Gold Coast to grow by approximately 60% to 928,000 people by 2041. This rapid population growth is creating increased demand for transport within the Gold Coast, between the Gold Coast and Brisbane, and more broadly in South East Queensland.

Poor public transport connectivity between Broadbeach and Burleigh Heads is resulting in significant road congestion and poor journey reliability. Without improvements to public transport connectivity, road traffic levels are expected to reach network capacity before 2031.

The Gold Coast population remains heavily car dependent, despite some increases in public transport trips in recent years.

Project description

To address these issues, the Queensland Government is proposing to extend the existing Gold Coast Light Rail line from Broadbeach South to Burleigh Heads. This project, known as Stage 3A, would replace existing bus services between Broadbeach South and Burleigh Heads with light rail services and implement a complementary urban renewal and economic development strategy in the corridor.

The strategic case for the project is largely dependent on the realisation of urban renewal and increased urban density. Furthermore, the strategic case depends on the project's ability to shift travel from cars to light rail. This typically requires the support of a proactive mode shift policy since travel times will be similar to existing bus services, even though light rail services should be more reliable and comfortable for passengers.

Economic, social and environmental value

The project's major benefits will be for road users through travel-time savings and operating costs. The project will also contribute benefits for public transport users through travel-time savings and amenity benefits.

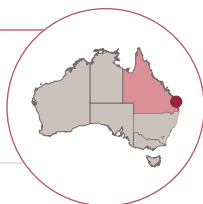
The proponent's stated benefit-cost ratio is 1.1, with a net present value of \$56 million (7% real discount rate).

Priority Projects

Beerburrum to Nambour Rail Upgrade

Location

Sunshine Coast to
Brisbane, Qld



Geography

Smaller cities and regional centres

Category

National Connectivity

Indicative delivery timeframe

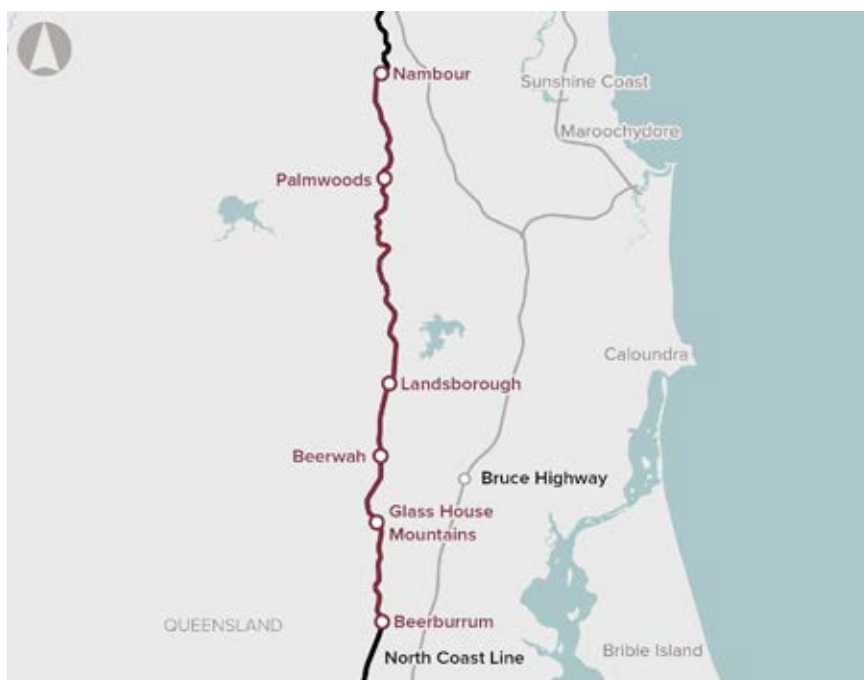
Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

16 February 2018



Problem to be addressed

Capacity issues on the North Coast Line between Beerburrum and Nambour were identified as a priority in the Queensland Government's Moving Freight strategy, and the 2015 *Northern Australia Audit*. As Queensland's major north–south rail corridor, the line facilitates freight and passenger movements between Queensland's coastal population centres from Brisbane to Cairns. It will also be a key enabler of future public transport developments within the Sunshine Coast.

The *Northern Australia Audit* forecasted northern Queensland's population would grow by 1.9% on average per year to 2031, driving an expansion of the freight task along the north–south corridor.

Further to the south, the Sunshine Coast's population is expected to grow by two thirds between 2016 and 2041, according to the South East Queensland Regional Plan 2017. The modelling undertaken for the business case suggests that passenger demand on this route could grow by over 3% per annum until 2036.

The existing rail line does not have enough capacity to meet future levels of passenger and freight demand. The route's configuration as a single track with limited passing loops constrains capacity on the line. Without rail network enhancements, increased commuter movements between the Sunshine Coast and Brisbane are likely to significantly increase traffic on the constrained Bruce Highway.

Project description

The proposed project is located on the North Coast Line between Beerburrum and Nambour stations. The project involves duplicating the 20 km section from Beerburrum to Landsborough, extending existing passing loops between Landsborough and Nambour, route realignments, level crossing removals, station improvements and supporting works. The proposed upgrade would improve the efficiency of both passenger and freight services, and take pressure off the Bruce Highway.

Economic, social and environmental value

The project would deliver significant economic benefits in the form of travel time savings, with associated social and environmental benefits including reduced air and noise pollution and lower vehicle crash rates.

The proponent's stated benefit-cost ratio is 1.5, with a net present value of \$262 million (7% real discount rate).

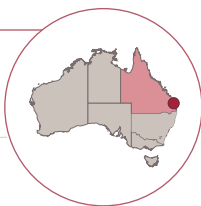
Priority Projects

M1 Pacific Motorway

Eight Mile Plains to Daisy Hill

Location

South East Queensland



Geography

Fast-growing cities

Category

National Connectivity

Indicative delivery timeframe

Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

13 June 2019



Problem to be addressed

The Eight Mile Plains to Daisy Hill section of the M1 Pacific Motorway currently carries more than 150,000 vehicles per day, with at least 12,000 of those being freight vehicles, making the road one of the busiest corridors in South East Queensland and one of the most freight intensive routes in Queensland. Without intervention, population growth in the region will cause average traffic speeds to decrease from 70 km/h to around 56 km/h by 2041.

Project description

The proposed project would provide additional road capacity by widening an 8.5 km northbound section of the motorway between the Gateway Motorway (at Eight Mile Plains) and Paradise Road (at Daisy Hill), and provide southbound capacity improvements between Rochedale Road and Fitzgerald Avenue (in Springwood).

The project would also extend the South East Busway from Eight Mile Plains Busway Station to Springwood Bus Station, providing a new Rochedale Busway Station and park 'n' ride facilities.

These capacity enhancements would accommodate an additional 25% traffic demand and are expected to relieve northbound travel congestion in this area for the next 15–20 years.

The project has strong strategic merit, providing improved access for people travelling between the Gold Coast and Brisbane on this section of the National Land Transport Network.

Economic, social and environmental value

The project would reduce travel times, improve reliability for users and improve the safety of the motorway. The project also supports public transport usage through busway improvements.

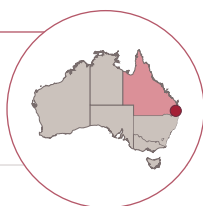
The proponent's stated benefit-cost ratio is 1.4, with a net present value of \$213 million (7% real discount rate).

Priority Projects

M1 Pacific Motorway

Varsity Lakes to Tugun

Location
Gold Coast,
Queensland



Geography
Smaller cities and
regional centres

Category
National Connectivity

Indicative delivery timeframe
Near term (0–5 years)

Proponent
Queensland Government

Evaluation date
13 June 2019



Problem to be addressed

The Varsity Lakes to Tugun section of the M1 Pacific Motorway currently carries 90,000 vehicles per day, exceeding the design capacity for the four-lane motorway.

Traffic demand is forecast to grow to more than 100,000 vehicles by 2026 following the completion of upgrades to the M1 Pacific Motorway in northern NSW. In 2036, this is expected to reach 120,000 vehicles per day by 2036.

The limited capacity of the motorway impacts on the travel times of a variety of road users who rely on the motorway each day, including local residents, long-distance travellers, commercial vehicles, buses, tour operators and international and domestic tourists.

Project description

The proposed project would provide additional capacity on the motorway by widening both directions of the road between Varsity Lakes Interchange (Exit 85) and Tugun Interchange (Exit 95) from four lanes to six lanes and upgrading the majority of interchanges.

The project also proposes to implement managed motorways technology between Nerang and Tugun, and realign the motorway between Bermuda Street and Tsipura Drive (Burleigh Heads).

The project has strategic merit given it will improve the reliability and capacity of the National Land Transport Network in South East Queensland, providing improved accessibility for regional traffic and freight.

Economic, social and environmental value

The additional capacity created by the project would lead to travel-time savings for users and reliability improvements.

The proponent's stated benefit-cost ratio is 1.67, with a net present value of \$419.4 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2018 business case) \$1,016.5 million (P90, nominal, undiscounted) | Australian Government contribution \$500 million
State government contribution \$515 million | Private sector contribution N/A.

Priority Projects

Bruce Highway

Deception Bay Road Interchange

Location

South East Queensland



Geography

Fast-growing cities

Category

National Connectivity

Indicative delivery timeframe

Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

23 August 2019



Problem to be addressed

The Bruce Highway is part of the National Land Transport Network and is the primary north–south route for regional and local traffic on the east coast of Queensland between Brisbane and Cairns.

The Deception Bay Road Interchange is approximately 35 km north of Brisbane CBD and 12 km south of Caboolture.

The interchange is an important connection for commuters travelling to and from Moreton Bay, and the surrounding regional areas. It also provides access for freight vehicles travelling between the industrial areas of Moreton Bay and Brisbane.

The interchange is heavily congested during morning and evening peak periods. Traffic queues can extend from the exit ramps, affecting traffic on the Bruce Highway. There is also a significant safety problem at the interchange.

These are issues that are likely to worsen as the populations of Moreton Bay and its surrounding regions grow and increase pressure on the road network.

Project description

The proposed project includes new parallel bridges over the Bruce Highway, upgraded signalised intersections on Deception Bay Road and increased length and capacity of entry and exit ramps.

The proponent expects the project to improve the average peak-hour travel speeds at the interchange, with the evening peak improving by over 100% by 2031 (from 23 km/h to 50 km/h).

The project is also expected to address safety issues by reducing projected crash rates by over 40%.

In addition to supporting a range of national, state and local plans and priorities, the project has strategic merit by relieving congestion and improving freight efficiency.

Economic, social and environmental value

The project will deliver economic benefits in the form of travel-time savings and associated social and environmental benefits, including reduced fuel consumption costs and lower vehicle crash rates.

The proponent's stated benefit-cost ratio is 3.03, with a net present value of \$234 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2018 business case) \$152.1 million (P90, nominal, undiscounted)

Australian Government contribution \$120 million | State government contribution \$30 million | Private sector contribution N/A.

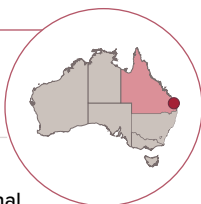
Priority Projects

Bruce Highway

Caboolture-Bribie Island Road to Steve Irwin Way

Location

South East Queensland



Geography

Smaller cities and regional centres

Category

National Connectivity

Indicative delivery timeframe

Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

17 October 2019



Problem to be addressed

The Bruce Highway is part of the National Land Transport Network and is the primary north–south route for regional and local traffic on the east coast of Queensland between Brisbane and Cairns.

The 11 km section of the Bruce Highway between the Caboolture Bribie Island Road interchange and the Steve Irwin Way interchange serves commuter and freight traffic on weekdays and significant tourist traffic on weekends.

This section of the highway is heavily congested at peak times, particularly on weekends, resulting in longer than usual and less reliable journeys for users. It is also severely affected by flooding events and is the highest crash rate section of the highway between Brisbane and the Sunshine Coast.

These issues are expected to worsen as the population living in the surrounding regions increases and traffic volumes grow.

Project description

The proposed project aims to improve the efficiency and safety of this section of the Bruce Highway by expanding from two lanes to three lanes in each direction and providing emergency stopping bays and safety barriers.

It also includes new bridge structures and creek crossing upgrades to improve flood immunity, as well as improvements to interchange entry and exit ramps to modern design standards.

The project will enable the implementation of Smart Motorways technology infrastructure, which is being delivered through a separate Smart Motorways project between Pine River (to the south) and Caloundra Road interchange (to the north).

The project has strong strategic merit, supporting a range of national, state and local plans and priorities. It would relieve congestion and improve safety and freight efficiency.

Economic, social and environmental value

The major benefits for the project will be travel-time savings for road users. A significant share of these benefits are for people travelling during weekends, reflecting the large volume of tourism and leisure travel on this section of the highway.

The proponent's stated benefit-cost ratio is 1.9, with a net present value of \$422 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2018 business case) \$614.9 million (P90, nominal, undiscounted)

Australian Government contribution \$530 million | State government contribution \$132.5 million | Private sector contribution N/A.

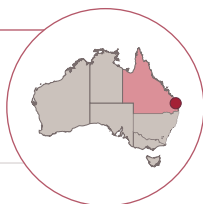
Priority Projects

Bruce Highway

Maroochydore Road Interchange

Location

Sunshine Coast,
Queensland



Geography

Smaller cities and regional centres

Category

National Connectivity

Indicative delivery timeframe

Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

23 August 2019



Problem to be addressed

The Bruce Highway is part of the National Land Transport Network and is the primary north–south route for regional and local traffic on the east coast of Queensland between Brisbane and Cairns.

On the Sunshine Coast, Maroochydore is connected to the highway via Maroochydore Road, which is a major east–west link for tourists and commuters. Just 420 m south of where the Maroochydore Road intersects the highway, Mons Road connects to the highway and provides access for the residential suburb of Mons.

The Maroochydore Road and Mons Road interchanges are congested during peak periods, a problem that is partly due to the short distance between the interchanges. The configuration of this section of the highway also leads to drivers rapidly accelerating and slowing down at entry and exit ramps, which causes unstable traffic flows.

This has led to a high number of accidents, with the crash rate in the project area reported to be more than twice the Bruce Highway average.

Project description

The proposed project aims to address the congestion and safety issues at both interchanges by upgrading the Maroochydore Road interchange, reconfiguring entry and exit ramps at Mons Road, constructing new service roads and widening the Mons Road underpass.

The project has strategic merit, providing safety and connectivity improvements for local and longer-distance traffic on the National Land Transport Network.

Economic, social and environmental value

The project's major benefits will be for road users through travel-time savings and vehicle operating cost savings.

The proponent's stated benefit-cost ratio is 3.21, with a net present value of \$529 million (7% real discount rate).

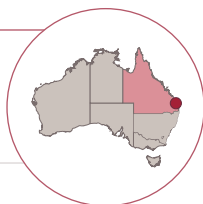
Priority Projects

Bruce Highway

Cooroy to Curra Section D: Woondum to Curra

Location

Gympie Region,
Queensland



Geography

Smaller cities and regional centres

Category

National Connectivity

Indicative delivery timeframe

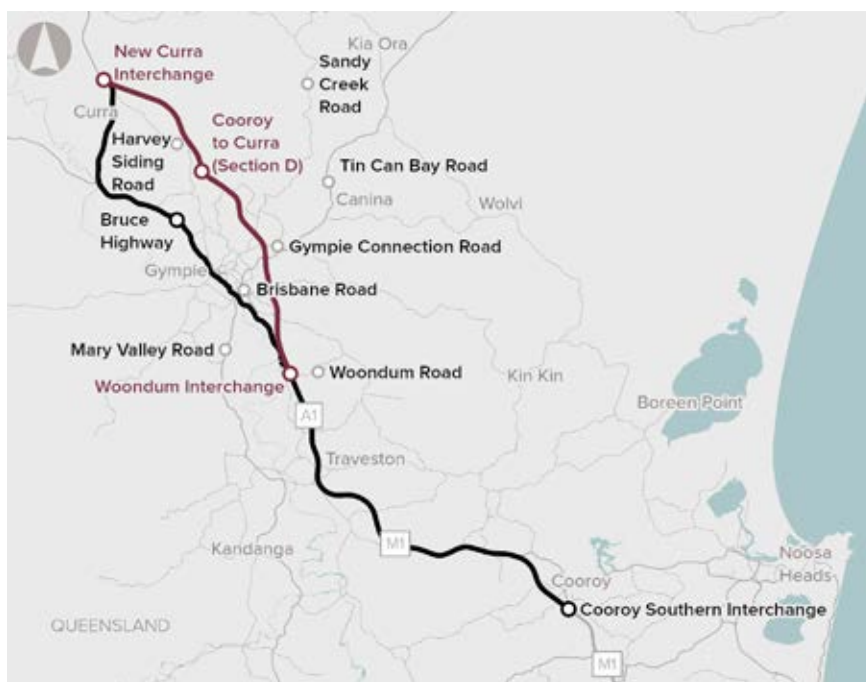
Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

23 August 2019



Problem to be addressed

The Bruce Highway is part of the National Land Transport Network and is the primary north–south route for regional and local traffic on the east coast of Queensland between Brisbane and Cairns.

The highway between Woondum and Curra is currently affected by safety, capacity and flood resilience issues.

The existing unseparated two-lane configuration, together with numerous direct property access points on the highway, limited overtaking opportunities and high speeds, are factors that combine to increase the risk of high-impact crashes (particularly head-on crashes).

Project description

The proposed project involves upgrading 26 km of the highway, including works to re-route the highway to bypass Gympie.

This is the final stage of a 62 km program of highway upgrades between Cooroy and Curra. Works on the first section commenced in September 2009 and the first three sections (A to C) are now complete and open to traffic.

The project demonstrates strong strategic merit as completing Section D will allow the whole-of-program benefits to be realised, including maintaining a consistent posted speed limit and safety standards between Cooroy and Curra.

Economic, social and environmental value

Section D is the last of a multi-section program of upgrades between Cooroy and Curra. Completing Section D will help to realise the benefits of the entire investment program, but it also means that a significant part of the project's benefits may have already been captured by Sections A to C.

Benefits of the project include travel-time savings, reduced accident costs and improved resilience from flooding.

The proponent's stated benefit-cost ratio is 1.36, with a net present value of \$274 million (7% real discount rate).

Priority Projects

Bruce Highway

Cairns Southern Access Corridor Stage 3: Edmonton to Gordonvale

Location

Cairns, Queensland



Geography

Smaller cities and regional centres

Category

National Connectivity

Indicative delivery timeframe

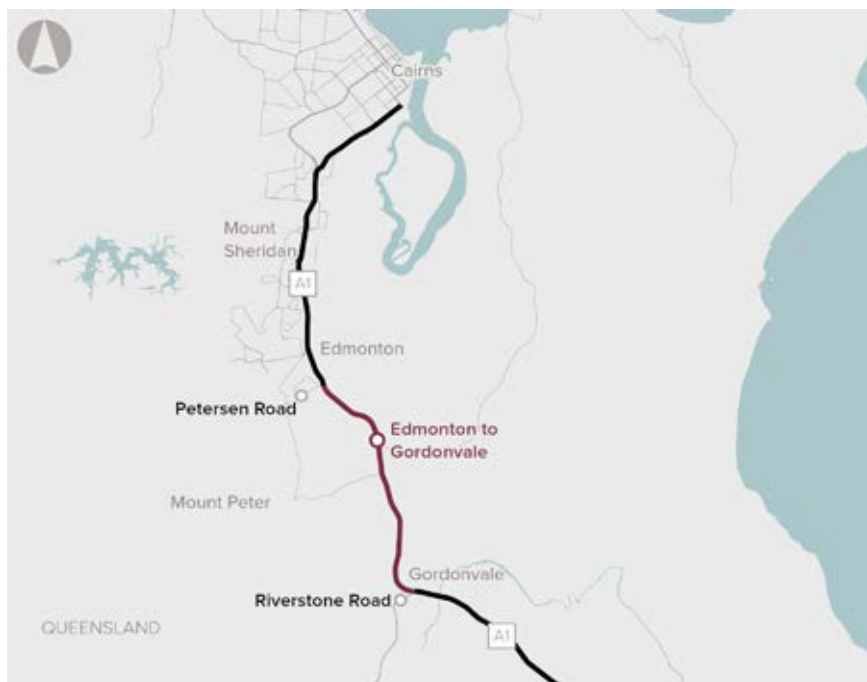
Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

13 June 2019



Problem to be addressed

The Bruce Highway is part of the National Land Transport Network and is the primary north–south route for regional and local traffic on the east coast of Queensland between Brisbane and Cairns.

The section of the Bruce Highway between Edmonton and Gordonvale is congested during morning and evening peaks, and has a high crash rate.

Increasing industry diversification, densification of the CBD, and urban expansion in southern Cairns is forecast to grow traffic beyond the reliable capacity of the highway.

Without intervention, this traffic growth would lead to severe congestion and poorer safety conditions on the road.

Project description

The proposed project aims to ease capacity constraints by creating a four-lane highway (two lanes in each direction) between Edmonton and Gordonvale and would significantly reduce interfaces with properties, the North Coast rail line and arterial roads.

New service roads would draw local traffic away from the highway, reducing travel times and improving amenity for the local residents of Mount Peter and Gordonvale.

There is strategic merit in upgrading this part of the Bruce Highway to improve accessibility for Cairns' local communities, regional traffic, tourism and freight.

Economic, social and environmental value

The largest benefit of the project is travel-time savings for road users. The project would also improve safety on the road, resulting in crash cost savings.

The proponent's stated benefit-cost ratio is 1.14, with a net present value of \$49.3 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2019 business case) \$516.9 million (P90, nominal, undiscounted)

Australian Government contribution \$384.8 million | State government contribution \$96.2 million | Private sector contribution N/A.

Priority Projects

Peak Downs Highway Realignment

Walkerston Bypass

Location

North-east Queensland



Geography

Small towns, rural communities and remote areas

Category

National Connectivity

Indicative delivery timeframe

Near term (0–5 years)

Proponent

Queensland Government

Evaluation date

3 December 2019



Problem to be addressed

The Peak Downs Highway extends from the Bruce Highway in the Port of Mackay to the Gregory Highway in central Queensland, near the town of Clermont.

As the principal access to the Bowen Basin and Galilee Basin coal and energy provinces, the Peak Downs Highway is an important regional route. The Peak Downs Highway is used to transport essential mining inputs such as fuel, plant and equipment, construction materials and explosives. It is also used to transport raw sugar and petroleum.

Within Walkerston, the Peak Downs Highway passes through the town centre, which includes schools, community facilities and shops, resulting in poor amenity for the local residents. This section of the highway is also becoming congested, leading to longer travel times for commercial vehicles.

Project description

The proposed Walkerston Bypass project includes a 10.4 km realignment of the Peak Downs Highway, from west of Walkerston to the Mackay Ring Road at Stockroute Road.

In diverting traffic (including heavy and dangerous goods transport) away from Walkerston's main street, the new bypass will provide increased freight capacity, more direct connectivity for large vehicles, increased flood resilience, improved freight efficiency, and safety and amenity benefits for the local residents of Walkerston.

The project also creates an opportunity for urban expansion in the regional townships of Walkerston, Mirani and Ooralea under the Mackay, Isaac and Whitsunday Regional Plan (2012).

The project has strong strategic merit as it will improve connectivity in the region and directly support the realisation of the benefits from Stage 1 of the Mackay Ring Road, which is currently under construction.

Economic, social and environmental value

The estimated benefits from the project are travel-time savings, along with vehicle operating cost savings, safety benefits, environmental benefits and residual value (that is, the estimated value of an asset at the end of its lease or the end of its life).

A significant proportion of the vehicle operating costs and travel-time savings are attributed to commercial and freight vehicles, which is consistent with the aim to improve freight efficiency.

The proponent's stated benefit-cost ratio is 1.5, with a net present value of \$67 million (7% real discount rate).

Priority Projects

Bindoon Bypass

Location

South-west WA



Geography

Small towns, rural communities and remote areas

Category

National Connectivity

Indicative delivery timeframe

Near term (0–5 years)

Proponent

Western Australian Government

Evaluation date

3 December 2019



Problem to be addressed

The Great Northern Highway forms part of the National Land Transport Network and provides a strategic freight link between the Perth metropolitan area and Western Australia's north-west.

The Great Northern Highway services Western Australia's growing mining, agricultural and northern tourist industries, carrying a mix of passenger and freight traffic.

However, triple road trains (53.5 m trucks) travelling on the Great Northern Highway are restricted from the section of the highway between Wubin (276 km north of Perth) and Muchea (50 km north of Perth). These restrictions are caused by road alignments and gradient conditions that are unsuitable for triple road trains.

As a result, drivers are required to stop at Wubin to decouple and reconfigure their vehicles into smaller truck and trailer configurations, such as double road trains (or smaller) for this section of the highway.

This operation decreases freight productivity and efficiency since more truck trips are then required to deliver the same freight task, leading to an overall net increase in transport costs per unit of freight transported.

Project description

The proposed Bindoon Bypass would reduce vehicle kilometres travelled by enabling triple road trains to travel along the entire length of the corridor, thereby avoiding the need to stop and decouple at Wubin.

The proposed project area is 66 km in total length, including construction of 61.6 km of new highway and 4.4 km of improvements to the existing highway.

There is strategic merit for the project given the importance of the Great Northern Highway as a freight link between Perth's metropolitan area and Australia's north-west.

Economic, social and environmental value

The majority of the project's benefits are vehicle operating cost savings. There will also be travel-time savings, reduced environmental emissions and safety benefits through the removal of trucks from Bindoon town centre.

The proponent's stated benefit-cost ratio is 3.4, with a net present value of \$462 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2018 business case) \$275 million (nominal, undiscounted) | Australian Government contribution \$220 million
State government contribution \$55 million | Private sector contribution N/A.

Priority Projects

Myalup–Wellington water project

Location
South-west WA



Geography
Small towns, rural communities and remote areas

Category
Opportunity for Growth

Indicative delivery timeframe
Near term (0–5 years)

Proponent
Western Australian Government

Evaluation date
6 November 2017



Problem to be addressed

The Myalup–Wellington Water Project is a response to increased salinity in the Wellington Dam catchment and in the dam itself, and inefficiency in the water distribution network below the dam. Increased salinity and reduced reliability of groundwater has resulted in reduced high-yield fruit and vegetable agricultural activity in the Myalup Irrigated Agricultural Precinct (MIAP), and a progressive abandonment of agricultural activity in the Collie River Irrigation District, as growers return water entitlements.

The MIAP is a key part of Western Australia's agriculture industry, responsible for over 60% of the south west's horticultural production. It is considered integral to domestic supply and potential growth in Australian exports. Growers have expressed concerns about high salinity levels on their properties, and difficulty in achieving crop germination. They are also experiencing a shortage of water supply, which limits capacity for increased productivity and expansion.

The impacts of salinity and/or reduction in water allocations restrict production in the region and constrain potential export growth opportunities.

Project description

The proposed project is located in the south-west of Western Australia, approximately 200 km south of Perth, east of Bunbury. The project is made up of a number of integrated above and below dam components, targeted at reducing salinity in Wellington Dam and the surrounding area, and increasing the efficiency of water distribution infrastructure.

Economic, social and environmental value

Economic benefits include those for irrigators and water producers. Irrigators would benefit through increased production value due to an increase in the number of hectares farmed and a shift to more valuable products. The producer, Collie Water, would benefit from the sale of potable water to Water Corporation.

The proponent's stated benefit-cost ratio is 1.6, with a net present value of \$389 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2017 business case) \$394.1 million (nominal, undiscounted) | **Australian Government contribution** To be determined | **State government contribution** To be determined | **Private sector contribution** To be determined.

Priority Projects

Eyre Infrastructure Project

Iron Road

Location

Eyre Peninsula, SA



Geography

Small towns, rural communities and remote areas

Category

Opportunity for Growth

Indicative delivery timeframe

Near term (0–5 years)

Proponent

Iron Road Limited

Evaluation date

27 July 2016



Opportunity

Iron Road Limited, a publicly listed company, is proposing to develop an iron ore mine in South Australia's Central Eyre Peninsula. When operating at full capacity, the mine is expected to produce 24 million tonnes per annum of 67% iron concentrate ore. The project would facilitate the transport of the ore from the mine to the coast, and its export through a deep water port facility at Cape Hardy.

Project description

The company is proposing to develop a deep water port at Cape Hardy, and a 148 km heavy-haul, standard gauge rail connection between the mine and the port. The proposed infrastructure would be available for other users ('open access'), including grain exporters and other miners in the region, and the new rail line could potentially be connected to the National Rail Network.

Development of the rail and port infrastructure is subject to the mine development proceeding. The project is supported by the South Australian Government.

Economic, social and environmental value

Without the port and rail infrastructure, the economic activity associated with the mine, and the royalties and tax receipts expected to be derived from it, would not be realised.

The proponent's stated benefit-cost ratio for the mine, rail and port infrastructure to Australia is 1.3, with a net present value of \$3,800 million (7% real discount rate), representing a public net benefit for this privately-funded project.

Priority Projects

University of Tasmania

Hobart Science and Technology Precinct

Location

Hobart, Tasmania

Geography

Smaller cities and regional centres

Category

Opportunity for Growth

Indicative delivery timeframe

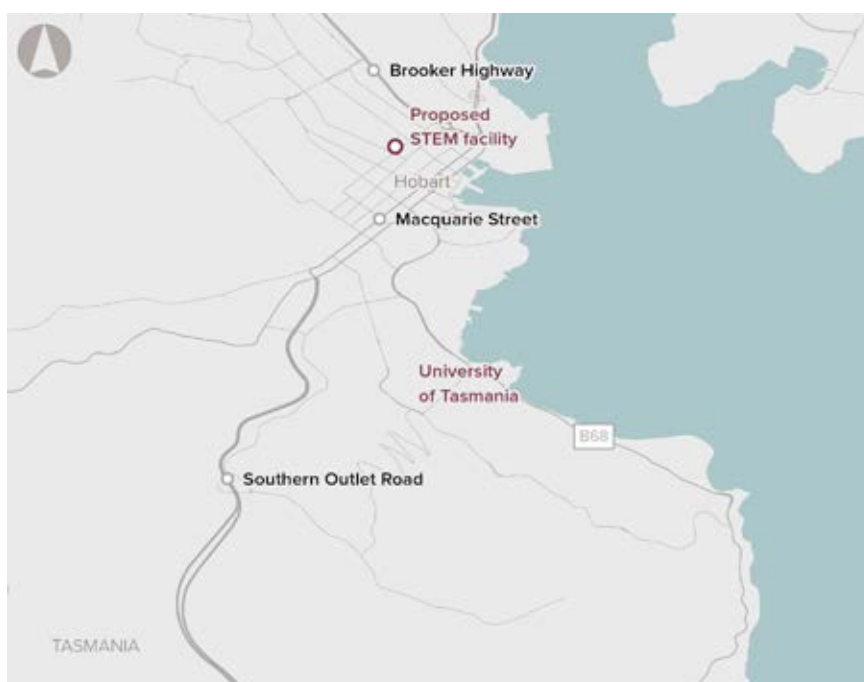
Near term (0–5 years)

Proponent

University of Tasmania

Evaluation date

9 February 2017



Problem to be addressed

Tasmania faces a number of economic challenges. The state's rate of economic growth is significantly below the Australian average. Unemployment is relatively high, productivity is relatively low, as are rates of higher education attainment and population growth.

Hobart's CBD lacks the scale and diversity necessary to support strong population and economic development in high-value industries. Increased densification and urban development in Hobart's CBD, coupled with development of science, technology, engineering and mathematics-related industries, may help attract new industries to locate in Hobart. This could, in turn, help increase economic and population growth.

The University of Tasmania's existing science, technology, engineering and mathematics facilities at the Sandy Bay campus are fragmented, and nearing the end of their usable life. The facilities struggle to attract Tasmanian students, and have very limited appeal to interstate and international students. The facilities lack the modern technical infrastructure that characterises a high-end research environment.

Project description

The project would relocate the University of Tasmania's Faculty of Science, Engineering and Technology from the existing campus at Sandy Bay to a purpose-built facility for education, research and training in the Hobart CBD.

The proposed 45,050 m² facility would initially accommodate 3,000 students and 700 staff. The university anticipates that the project would result in a 60% increase in undergraduate student demand, and enable improved research outcomes. The project would be supported by ongoing university and government programs and policies to increase higher education participation in Tasmania. The development would also contribute to the urban regeneration of Hobart's CBD.

The project is supported by the Tasmanian Government.

Economic, social and environmental value

The primary benefit of the project is derived from attracting new students to tertiary education. Other benefits include improved accessibility and amenity for existing students, research benefits and development of the Hobart CBD.

The proponent's stated benefit-cost ratio is 1.95, with a net present value of \$364 million (7% real discount rate).

Capital cost of initiative as stated by proponent (2016 business case) \$400 million (single point cost estimate, nominal, undiscounted)

Australian Government contribution To be determined | **State government contribution** To be determined | **Private sector contribution** To be determined.

Priority Projects

University of Tasmania

Northern Transformation Program

Location

Northern Tasmania

Geography

Smaller cities and regional centres

Category

Opportunity for Growth

Indicative delivery timeframe

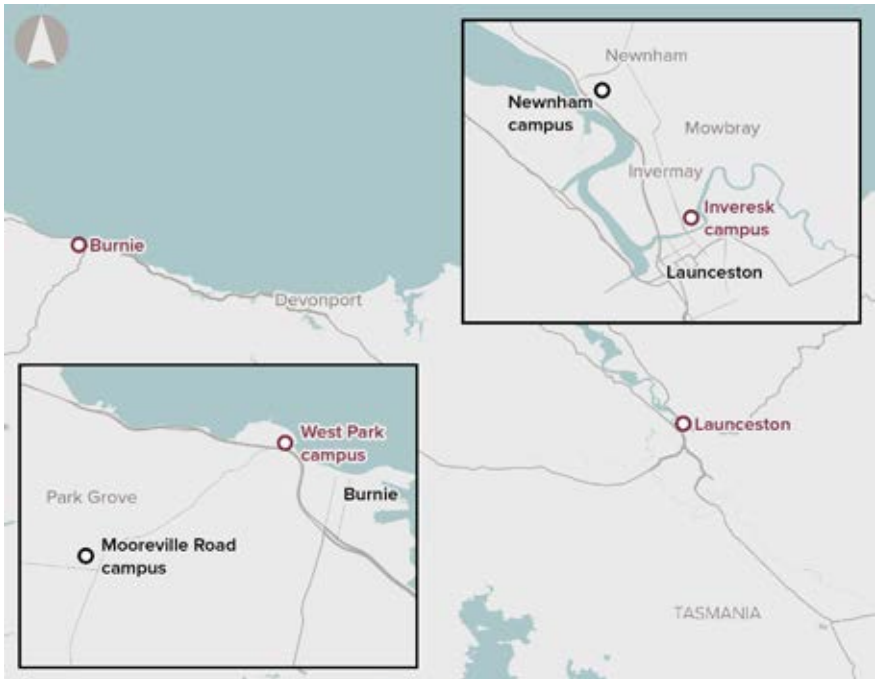
Near term (0–5 years)

Proponent

University of Tasmania

Evaluation date

13 June 2019



Problem to be addressed

The University of Tasmania operates campuses in Launceston and Burnie. These facilities are outdated, in inconvenient locations and limit the university’s capacity to offer modern courses.

Together, these deficiencies have contributed to student enrolments falling and have limited the opportunity to improve social outcomes for northern Tasmania. Many residents are faced with the challenges of high unemployment and below-average levels of education, leading to low workforce participation and low economic growth compared with national levels.

Project description

The proposed \$300 million program includes relocating existing campuses in Launceston and Burnie to new inner-city locations, with state-of-the-art teaching and research facilities.

It also includes the delivery of new types of degrees and courses that better meet the needs of students and industry, including associate degrees, bachelor degrees and short courses.

There is substantial strategic merit in improving educational participation, which is often linked with improved living standards and higher levels of productivity.

Economic, social and environmental value

The largest estimated benefit from the project is the increase in the lifetime earnings and employability for new students who would not have otherwise obtained higher education.

The proponent’s stated benefit-cost ratio is 2.41, with a net present value of \$483 million (7% real discount rate).



Myponga, Adelaide, South Australia

High Priority Initiatives

Summaries





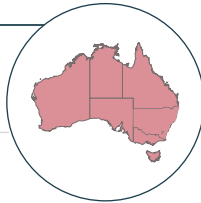
Queensland Children's Hospital, Brisbane

High Priority Initiatives

Regional road network safety improvements

Location

National



Geography

Small towns, rural communities and remote areas

Category

Road Safety

Problem timeframe

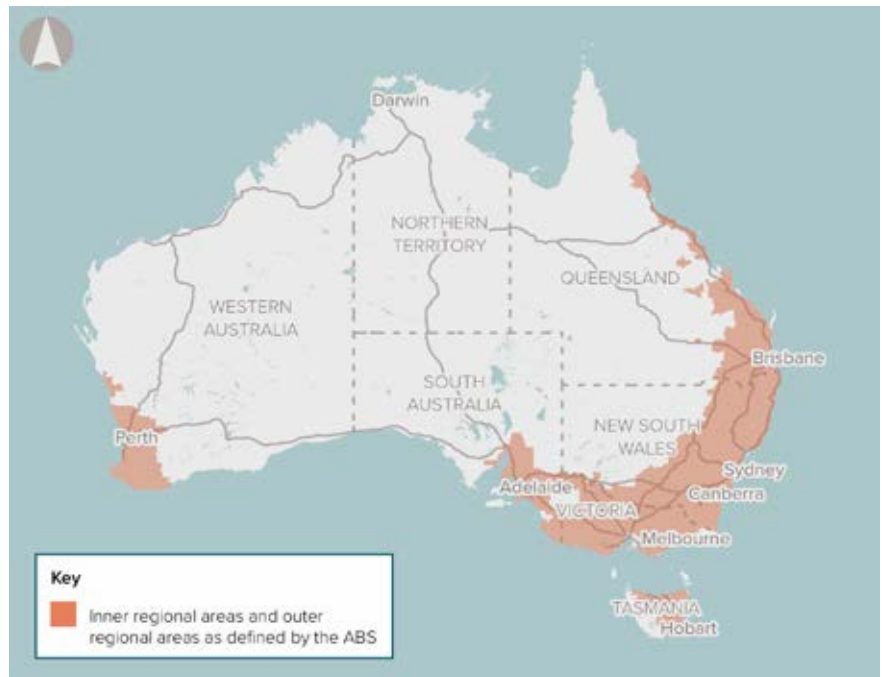
Near term (0–5 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2019



Problem

The varied quality of Australia's regional road network is resulting in a high number of crashes and fatalities. Between 2008 and 2016, 55% of road fatalities in Australia occurred in regional areas. Relative to population size, the number of fatalities in regional areas was over four times greater than for major cities over the same period.

While behavioural factors are a significant cause of road crashes, infrastructure deficiencies such as the curvature of roads are also a cause of accidents. Infrastructure can play an important role in mitigating the consequences of road accidents through features such as safety barriers and the appropriate placement of embankments, poles and other roadside objects.

There is a risk that the growing road freight task may exacerbate these road safety issues as more heavy vehicles travel on roads in regional areas.

Proposed initiative

This program initiative recognises the need to continue identifying, assessing and prioritising high-risk sections of regional roads across Australia. These sections could be addressed through targeted infrastructure improvements, such as alignment corrections and safety barriers, as well as modern road safety infrastructure technology to improve road safety outcomes.

The *Infrastructure Priority List* separately identifies the following High Priority initiatives that align with this program initiative:

- *Regional NSW road network safety improvements* (see page 77).
- *Regional and rural WA road network safety improvements* (see page 96).

Next steps

Proponent(s) to be identified.

High Priority Initiatives

Town and city water security

Location
National

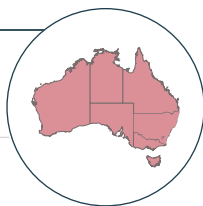
Geography
National

Category
Resilience

Problem timeframe
Various (0–15 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2020



Problem

Australia's urban water infrastructure is critical for the liveability and prosperity of more than 20 million people and 9 million connected properties in our towns and cities. It also serves industries, supporting growth in productivity and employment across the country.

The role of water in the public realm is also diverse. For instance, as well as drinking water, water plays an important role supporting urban cooling and amenity.

The 2019 *Australian Infrastructure Audit* found that the 'urban water sector faces challenges, including the impacts of climate change, population growth, ageing assets, and changing needs and expectations from users. Failure to adequately address these challenges could lead to rising water bills, as well as exposing users to risks of declining service quality and reliability'.

Without appropriately planning for these challenges, there could be severe urban water shortages or restrictions in many parts of the country.

For regional towns, water utilities often rely on a single supply source, with no physical link to an alternative bulk water supply. The lack of supply diversification creates further water security risks for these communities.

Proposed initiative

The initiative is for a mix of infrastructure and non-infrastructure responses, such as demand management, to efficiently meet agreed service standards for water security in Australia's towns and cities. Infrastructure interventions for towns and cities could involve new water sources, such as recycling and desalination.

Long-term urban water planning will need to be supported by stronger institutional arrangements, as recognised in the High Priority Initiative for a National water strategy, which is separately included on the *Infrastructure Priority List*.

Collaboration and knowledge sharing will also be important to achieve the best outcomes, taking into account the roles and responsibilities of state, territory and local governments.

Appendix C provides a list of submissions received by Infrastructure Australia in relation to this program initiative.

In 2019, the Australian Government established the National Water Grid Authority, which will collaborate with states and territories to identify where new infrastructure can increase water supply and security to support regional growth and meet the needs of a growing population.

A *Perth water security* initiative is separately included on the *Infrastructure Priority List*, as the Western Australian Government has provided detailed evidence of these issues in Perth.

Next steps

Proponent(s) to be identified.

High Priority Initiatives

National water strategy

Location
National

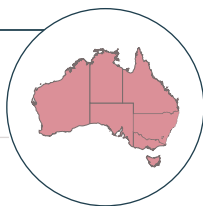
Geography
National

Category
Resilience

Problem timeframe
Near term (0–5 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2020



Problem

Australia's water systems are used for a variety of purposes, including drinking water, wastewater, farming, industrial, environmental, recreational and cultural activities. Balancing these uses, and ensuring the health of streams, groundwater and ecosystems, is crucial for maintaining reliable access to water.

The demand for water across many water systems is increasing as a result of population growth and relocation, increasing agricultural demand and requirements for environmental and cultural uses.

The water cycle is also being altered by changing climate, changes to run-off and evaporation due to land and forest management.

The 2019 *Australian Infrastructure Audit* identifies that a number of events, such as the Menindee fish kill, have undermined confidence in the governance and management of Australia's water resources. Balancing competing demands for water is challenging and can limit effective decision-making.

Without appropriate planning for these challenges, there could be severe water shortages or restrictions in many parts of the country. For example, New South Wales is currently experiencing the most severe drought on record. The Barwon-Darling River, Macquarie River and Lower Darling all have critical water shortages.

The *Infrastructure Priority List* separately includes a High Priority Initiative for *Town and city water security*.

Proposed initiative

The initiative is for a national water strategy that would guide governments, the private sector and Australia's population on how to efficiently and sustainably capture, use and manage water.

The strategy should consider at least:

- the current availability, quality, regulation and use of water within various catchments and aquifers
- changes in run-off levels linked to changing land-uses and climate volatility/change
- modelling of demand, based on population, environment and industry requirements
- the condition and performance of existing water infrastructure, including storage, sourcing, stormwater, distribution and treatment
- the role of various water sources and potential opportunities, including dams, catchment transfer, stormwater harvesting, water recycling, groundwater and desalination

- potential regulatory and planning changes to the water sector, and have regards to the National Water Initiative
- potential investments, ranging from smaller augmentations of existing systems to more major infrastructure for capturing, diverting and distributing water
- opportunities to improve the collection, consistency, reporting and use of information and data in the sector.

While the plan should be developed in the near term, it should consider the current and future demand for water over a period of at least 30 years.

The strategy will need to be considered in the context of the work of the Australian Government's National Water Grid Authority. The Authority is working with the states and territories to deliver strategic planning for water infrastructure across the nation to increase the capacity, connectivity and resilience of water storage and supply networks to provide water security for regional economic growth

Next steps

Proponent(s) to be identified.

High Priority Initiatives

Coastal inundation protection strategy

Location	
National	
Geography	
National	
Category	
Resilience	
Problem timeframe	
Longer term (10–15 years)	
Proponent	
Infrastructure Australia identified initiative	
Date added to the IPL	
February 2020	



Problem

Rising sea levels over the 21st Century will put many of Australia's coastal cities and economic centres at risk of inundation (temporary or permanent flooding).

The United Nations' Intergovernmental Panel on Climate Change has adopted different Representative Concentration Pathways (RCPs) to model climate change, based on future greenhouse gas emissions levels. The average sea level rise is projected to be between 0.4 m and 0.6 m in the lowest of the four scenarios (RCP 2.6), and by 0.6 m or more in the highest of the scenarios (RCP 8.5).

Sea inundation can damage residential, commercial and industrial property, and essential infrastructure. The average household costs of a flood up to 1 m are between \$60,000 and \$80,000. The costs of larger and sustained flooding leading to forced relocation would be greater.

Rising sea levels also have significant environmental consequences, such as coastal squeeze, where intertidal (seashore) habitats are disrupted and lost.

Proposed initiative

The initiative is for a proactive infrastructure strategy in advance of the inundation risks materialising. Involving engagement with all levels of government, the strategy will need to consider which areas should be protected for continued use, modified to accommodate floods, or withdrawn from altogether.

Depending on these decisions, infrastructure options could include seawalls, buffer zones and other physical assets to protect populations, or infrastructure to facilitate early flood warnings and evacuations.

The strategy should also consider policy responses, such as actions to reduce greenhouse gas emissions and planning controls for vulnerable areas.

Next steps

Proponent(s) to be identified.

High Priority Initiatives

National waste and recycling management

Location

National

Geography

National

Category

Efficient Markets

Problem timeframe

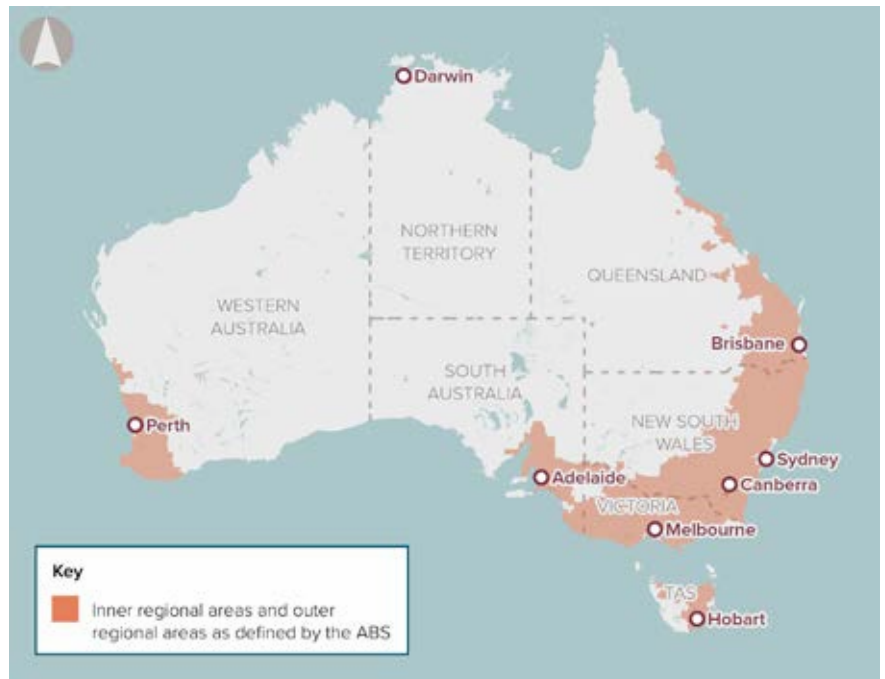
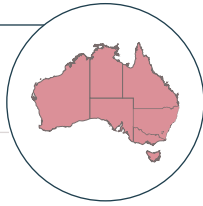
Near term (0–5 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2020



Problem

Around 67 million tonnes of waste was generated in Australia in 2018, of which 37 million tonnes (55%) was recycled. This is below the target recycling rates (of 70%) set out in the Waste Avoidance and Resource Recovery Strategy 2014–21.

Constraints on the collection and processing of recyclable waste led to recyclable waste ending up in landfill, contributing to the shortfall. These constraints include:

- lack of space for transfer facilities
- the ability of material recovery facilities to process and sort co-mingled, highly contaminated waste (particularly for communities in remote and regional Australia)
- under-developed domestic reuse markets as a result of previous over-reliance on the export of waste to international markets.

The environmental costs of greenhouse gases and leachate from recyclable waste entering landfill are significant and are set to rise with a growing population.

In addition, limited landfill capacity and sorting facilities are increasing logistics costs as waste is being transferred greater distances for processing and disposal.

Proposed initiative

The initiative involves a coordinated strategy between all levels of government and the market to identify a program of investment in new waste recovery and reprocessing infrastructure.


This aims to meet the long-term needs of Australians and to foster innovation and adoption of emerging technologies.

Next steps

Proponent(s) to be identified.

High Priority Initiatives

National road maintenance strategy

Location	
National	
Geography	
National	
Category	Asset Renewal
Asset Renewal	
Problem timeframe	Near term (0–5 years)
Near term (0–5 years)	
Proponent	Infrastructure Australia identified initiative
Infrastructure Australia identified initiative	
Date added to the IPL	February 2020
February 2020	



Problem

The cost of maintaining roads in Australia is growing and the overall maintenance backlog is increasing.

Australia's road network faces increasing demands from a growing population. Total vehicle kilometres travelled grew on average by 1.95% per annum between 1998 and 2018. The size of the network is also growing, with the expansion of existing roads and the construction of new ones.

Meanwhile, there is a limited link between funding for road services and the actual use of roads. This leads to funding challenges for ongoing maintenance, particularly where the capital expenditure of new roads is funded and future maintenance is not.

The 2019 *Australian Infrastructure Audit* identifies an underspend on historical maintenance, short budgetary and funding cycles, a lack of data and incentives, and inadequate reporting as factors contributing to maintenance backlogs across infrastructure sectors.

Proposed initiative

The initiative would address the road maintenance backlog across local, state and national roads. Key steps include:

- a comprehensive review of road condition across Australia
- prioritising and fixing roads in poor condition using a structured and evidence-based process
- considering reform options, including road regulatory reform and more structural reforms such as road-user charging.

There is also an opportunity to implement more pre-emptive maintenance. Early maintenance on assets such as pavement can significantly reduce future costs, if timed correctly.

This initiative requires action from local and state/territory governments to identify, categorise and prioritise the necessary responses in their areas of responsibility.

A Queensland National Land Transport Network (NLTN) maintenance initiative is separately included on the *Infrastructure Priority List* as the Queensland Government has developed a structured program approach to addressing the maintenance backlog for the sections of the NLTN in Queensland.

Next steps

Proponent(s) to be identified.

High Priority Initiatives

Network Optimisation Program

Rail

Location
National

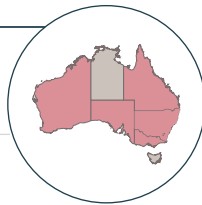
Geography
National

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2016



Problem

The 2019 *Australian Infrastructure Audit* found that the cost of road congestion and public transport crowding in Australia could increase from \$19 billion in 2016 to \$39.6 billion in 2031 without continued infrastructure investment. Although its root causes vary, it is a widespread problem across multiple corridors in Australian cities. Addressing this problem through a program approach would enable the consistent use of data to maximise the productivity of smaller investments and enable a consistent definition of service levels across jurisdictions.

Proposed initiative

This initiative would involve a program of works focused on addressing capacity constraints and improving service levels on urban and regional rail networks, just as the National Optimisation Program – Roads proposes to do for road networks. These works could use data and technology to improve network operations, including signalling, timetabling, level crossing upgrades, sectorisation of freight and passenger corridors, and segregation of express and local passenger services, where appropriate.

The initiative would identify and prioritise a program of works nationally to help maximise the existing productive capacity of the rail network, which could delay the need for some large-scale investments.

Appendix C provides a list of submissions received by Infrastructure Australia in relation to this program initiative.

This initiative was originally included on the *Infrastructure Priority List* under the combined Network Optimisation Program initiative and was subsequently separated in 2018.

Next steps

Proponent(s) to be identified.

High Priority Initiatives

Network Optimisation Program

Roads

Location
National

Geography
National

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2016



Problem

The 2019 *Australian Infrastructure Audit* found that the cost of road congestion and public transport crowding in Australia could increase from \$19 billion in 2016 to \$39.6 billion in 2031 without continued infrastructure investment. Although its root causes vary, it is a widespread problem across multiple corridors in Australian cities. Addressing these problems will require multiple investments that are focused on productivity enhancing network optimisation, as well as continued investment in new capacity.

Proposed initiative

A Network Optimisation Program for roads would focus on addressing congestion on urban road networks with comparatively high public transport and freight use. These works could use data and technology to improve network operations by, for example, optimising traffic flow through intersection treatments, traffic light sequencing, clearways and incident management.

The initiative would build on existing work being undertaken in this field to identify and prioritise a program of works nationally to help maximise the existing productive capacity of the road network, with a focus on urban motorways, major urban arterials and access to central business districts. These works could delay the need for some large-scale investments.

Appendix C provides a list of submissions received by Infrastructure Australia in relation to this program initiative.

This initiative was originally included on the *Infrastructure Priority List* under the combined Network Optimisation Program initiative and was subsequently separated in 2018.

Next steps

Proponent(s) to be identified.

High Priority Initiatives

National Freight and Supply Chain Strategy

Implementation

Location
National

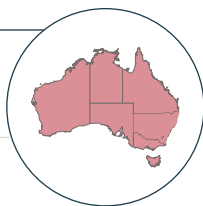
Geography
National

Category
National Connectivity

Problem timeframe
Near term (0–5 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2016



Problem

Australia's freight task is growing and changing. The volume of freight carried is expected to grow by over 35% between 2018 and 2040, an increase of 270 billion tonnes (bringing the total volume to just over 1,000 billion tonne kilometres¹). The nature of the freight challenge is also changing in conjunction with growing population density pressures: urban freight is forecast to grow by nearly 60% over 20 years to 2040.

Failure to adequately cater for the expected increase in freight transport will increase freight network congestion around Australia and, ultimately, harm national productivity.

Proposed initiative

In 2016, Infrastructure Australia recommended that governments and industry work together to develop a 'whole of network' strategy that examines Australia's freight and supply chains.

On 2 August 2019, the 20-year National Freight and Supply Chain Strategy (the Strategy) was agreed to by the Council of Australian Governments' Transport and Infrastructure Council. The Strategy sets an agenda for coordinated and well-planned government and industry action across all freight modes over the next 20 years and beyond by taking national action across four critical areas:

1. Smarter and targeted infrastructure investment.
2. Enable improved supply chain efficiency.
3. Better planning, coordination and regulation.
4. Better freight location and performance data.

The associated National Action Plan outlines actions that governments will take to implement the Strategy. The *Infrastructure Priority List* includes many projects and initiatives that are referenced in the Action Plan as possible responses to the Strategy.

Appendix C also provides a list of submissions received by Infrastructure Australia in relation to this program initiative.

Next steps

Governments will report to the Council of Australian Governments' Transport and Infrastructure Council in the second half of each year on their progress in delivering the Strategy and Action Plan.

The annual report will feature outcomes from the freight performance framework being established to monitor the delivery of the Strategy. It will also include input from the Australian Local Government Association and industry, who play a critical role in delivering freight outcomes.

A major review of the Strategy and Action Plan will occur every five years in consultation with industry. These reviews will ensure continuous improvement in supply chain performance, help identify gaps in government or industry actions, and increase efforts to meet Australia's freight challenge.

¹ National Freight and Supply Chain Strategy, August 2019.

High Priority Initiatives

Corridor preservation for East Coast High Speed Rail

Location

Melbourne to
Brisbane via Sydney

Geography

National

Category

Corridor Preservation

Problem timeframe

Near term (0–5 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2016





Problem

By 2075, the combined population of Melbourne, Sydney and Brisbane is projected to exceed 30 million people. The future demand for efficient, high-capacity transport services between major centres on Australia's east coast will likely exceed the capacity of existing and planned rail, road and aviation services.

Protecting a corridor would significantly increase options for future development of high speed rail infrastructure to meet future demand for inter-city and regional travel.

Modelling by Infrastructure Australia in 2017 estimates the net cost of protecting and acquiring the corridor as \$2.8 billion (2016 prices) using a 7% real discount rate.

Proposed initiative

This initiative proposes to confirm and begin the preservation of a corridor, based on the corridor set out in the Australian Government's High Speed Rail Study Phase 2, for a high speed rail link between Melbourne, Sydney and Brisbane.

Next steps

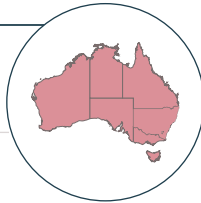
Proponent(s) to be identified.

High Priority Initiatives

Remote housing overcrowding

Location

National



Geography

Small towns, rural communities and remote areas

Category

Remote Infrastructure

Opportunity timeframe

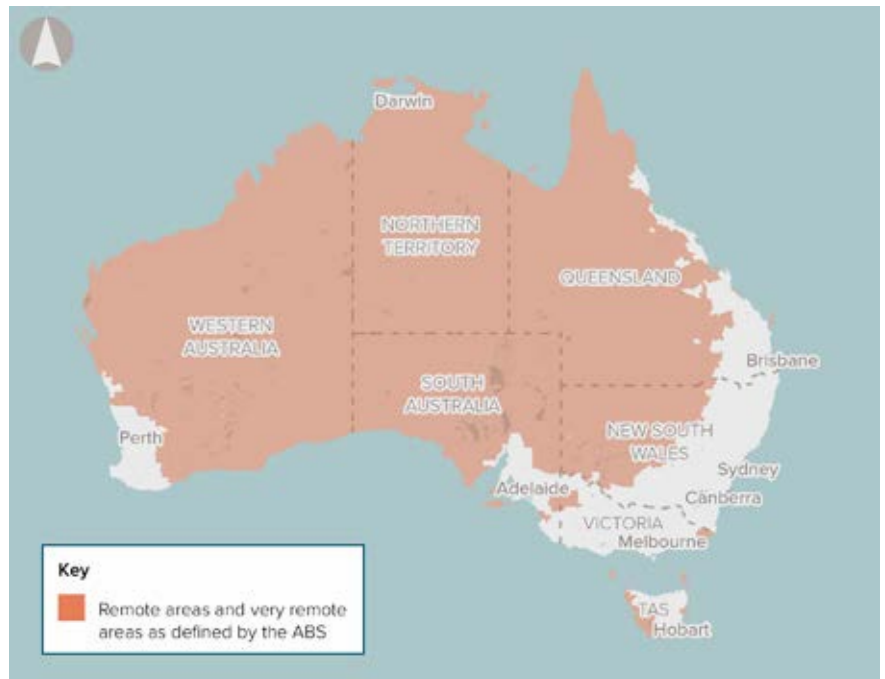
Near term (0–5 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2019



Opportunity

Relieving overcrowding and improving quality in housing for people in remote areas can significantly improve health, safety, education and employment outcomes.

The Australian Institute of Health and Welfare reports that 21% of Aboriginal and Torres Strait Islander peoples were assessed as being in overcrowded conditions in 2014–15, of whom 41% were living in remote areas.

While progress has been made in reducing the proportion of overcrowding in remote housing – down from 52.1% in 2008 to a projected 37.4% in 2018 according to a Remote Housing Review by the Australian Government – ongoing investment is necessary to ensure the gap continues to close, thereby reducing the high associated social and economic costs.

Proposed initiative

Good-quality housing underpins all targets in health, education and employment, as well as community safety, as set out in the Australian Government's *Closing the Gap* strategy (2008).

Improving remote housing is likely to require a range of actions, including:

- addressing maintenance and utility deficiencies for existing housing stock
- renewing life-expired housing stock
- developing new housing stock.

These actions will require Australia's governments to consider which type of housing will best meet the needs and demographics of different communities in remote areas.

Australia's governments should also consider whether complementary programs to improve access to employment and supporting social services are required to support these actions.

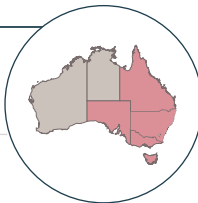
Next steps

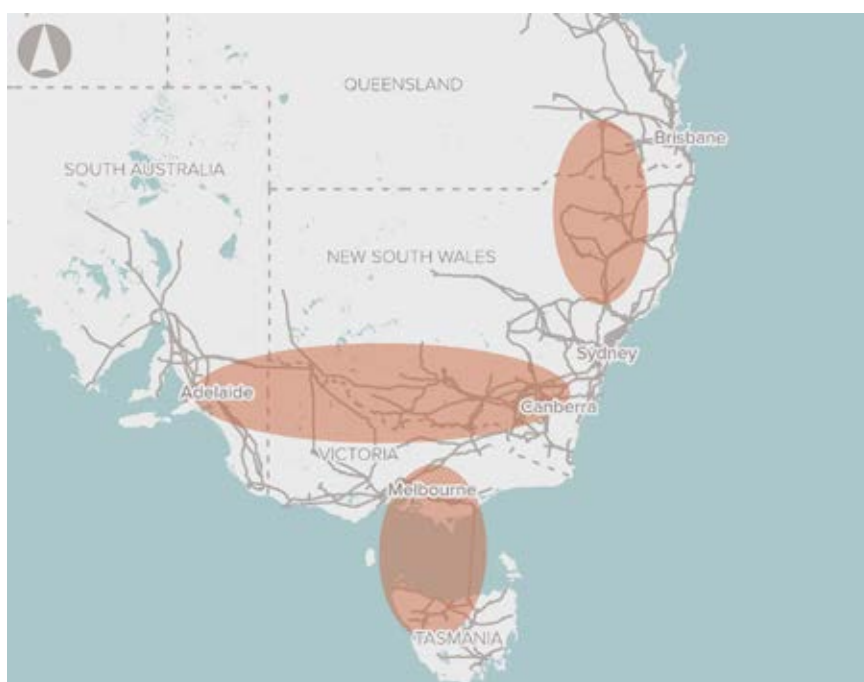
Proponent(s) to be identified.

High Priority Initiatives

National Electricity Market

Future connectivity and reliability

Location	
National	
Geography	
National	
Category	
Efficient Markets	
Opportunity timeframe	
Medium to longer term (5–15 years)	
Proponent	
Infrastructure Australia identified initiative	
Date added to the IPL	
February 2019	



Opportunity

The National Electricity Market (NEM) is undergoing a once-in-a-lifetime transition from thermal generation to intermittent renewables (such as wind and solar), complemented by firming generation (such as pumped hydro). Over the next 15 years, significant investment will be needed in renewable and firming generation and associated transmission to continue providing affordable, reliable and secure energy for users.

By 2040, an estimated 30 gigawatts (GW) of large-scale renewable energy, backed up with 21 GW of new dispatchable resources, will be required to replace retiring coal-fired generation.

To ensure an orderly and cost-efficient transition, the transmission grid will need augmentation to balance generation resources and connect Renewable Energy Zones (REZ). At present, there is only 13 GW of connection capacity for REZs – less than half of what is required by 2040.

During this transition, the NEM will need to deliver greater volumes of generated and stored energy to meet changing patterns of consumer demand, balance intermittency, and increase system reliability and resilience by transmitting energy across and within regions.

The Australian Energy Market Operator, which operates the NEM, is currently updating its Integrated System Plan (ISP). The ISP was first released in 2018 and formed part of the evidence base for this initiative.

Short-term optimisation of the NEM is also identified as a Priority Initiative on the *Infrastructure Priority List*.

Proposed initiative

The 2018 ISP identified three groups of investments over the near, medium and longer term. This initiative relates to the potential medium and longer-term (called Group 2 and 3 in the ISP) investments between the mid 2020s and 2040, and includes:

- new and increased transfer capacity between regions, such as between Queensland and New South Wales, New South Wales and South Australia, and Tasmania and Victoria
- network access to energy storage locations
- network access to renewable energy sources.

Potential initiatives also include the Tasmanian Government's Second Bass Strait Interconnector project (also known as the 'Marinus Link'). This was previously listed on the *Infrastructure Priority List* as a longer-term Priority Initiative and is now captured under this broader initiative.

These potential medium- and longer-term investments are subject to change as the ISP is updated to reflect the dynamic nature of the power system and evolving technologies.

The investments and their timing will also be subject to feasibility studies and detailed assessment of their costs and benefits by network infrastructure owners and governments.

Next steps

Proponent(s) to be identified.

High Priority Initiatives

National electric vehicle fast-charging network

Location
National

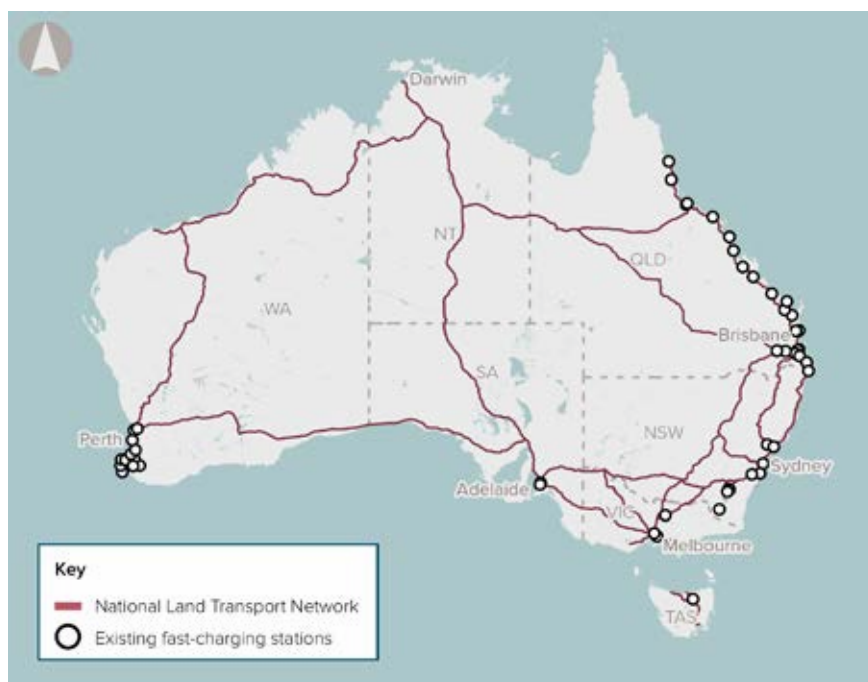
Geography
National

Category
Opportunity for Growth

Opportunity timeframe
Near term (0–5 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2019



Opportunity

By 2040, electric vehicles (EVs) are projected to account for 70% to 100% of new vehicle sales and at least 30% of the vehicle fleet in Australia. According to the Electric Vehicle Council, since 2011 almost 10,000 EVs have been sold in Australia.

Moving from internal combustion engines to electric vehicle technology will result in nationally significant fuel and maintenance cost savings, and environmental benefits.

However, lack of access to charging stations has been identified by around two-thirds of motorists as a key barrier to the adoption of EVs. Although there has been an increase in charging stations since 2018, partly by the private sector, the latest information from the Electric Vehicle Council suggests that Australia currently has less than 2,000 public charging stations, of which approximately 250 are fast charging. Other key barriers to the adoption of EVs include the currently high vehicle prices, model availability, and the distance over which they can travel on a single charge.

Establishing a network of fast-charging stations on, or in proximity to, the national highway will help to overcome the 'access to charging facilities' barrier and reduce consumer anxiety about EV range. It is expected that the distance vehicles can travel on a single charge will continue to improve with technological advancements, and that vehicle prices will reduce as production scale increases and the cost of batteries reduces.

National policies and regulation to complement the roll-out of fast-charging infrastructure would reduce the risk of competing standards and redundant investments, and maximise inter-operability.

Proposed initiative

The initiative includes:

- developing a network of fast-charging stations on, or in proximity to, the national highway network to provide national connectivity
- developing policies and regulation to support charging technology adoption.

Complementary investment in network infrastructure may be required to ensure that the electricity generation and distribution network can provide reliable electricity supply for additional electric vehicle chargers.

Next steps

Proponent(s) to be identified.

High Priority Initiatives

Regional NSW road network safety improvements

Location
New South Wales



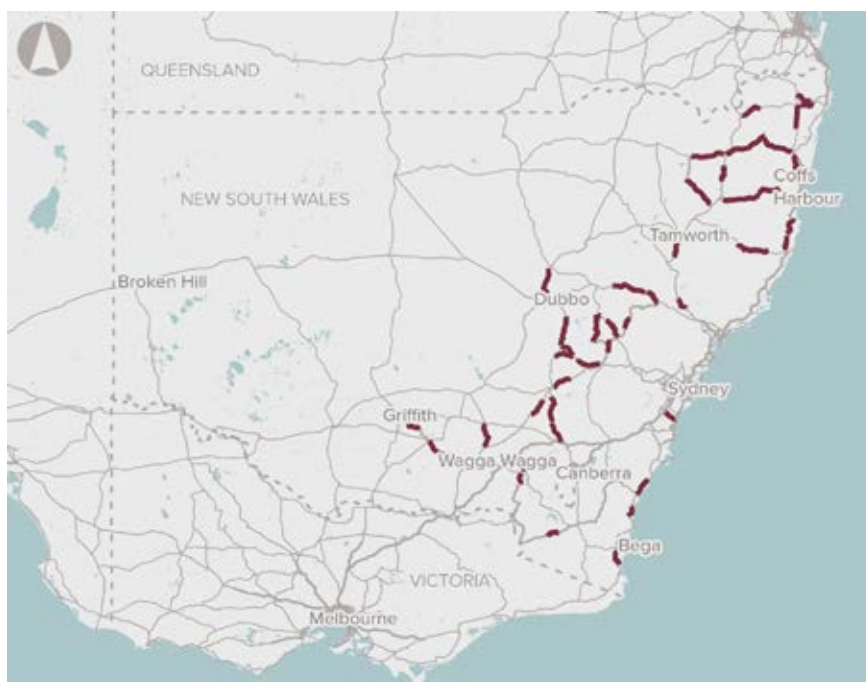
Geography
Small towns, rural communities and remote areas

Category
Road Safety

Problem timeframe
Near to medium term (0–10 years)

Proponent
NSW Government

Date added to the IPL
February 2019



Problem

Traffic volumes on the New South Wales (NSW) road network increased by 14% from 2008 to 2017. Freight traffic volumes are expected to nearly double from 2011 to 2031.

In 2018, crashes in NSW accounted for 31% of the Australian road toll². Further, 34% of all Australian road fatalities involving a heavy vehicle occurred in NSW.

NSW is one of only two jurisdictions to experience an increase in fatalities per vehicle kilometre travelled between 2016 and 2017.

Road safety improvements can enable freight to move more effectively on the NSW regional road network and contribute to national economic performance. Without these improvements, the increase in road freight traffic could lead to increases in road crashes. While behavioural factors have a major influence on road safety, infrastructure improvements are important to achieving a safer road environment.

Proposed initiative

This initiative forms part of the national High Priority Initiative for *Regional road network safety improvements* (see page 64). It involves the introduction of modern road safety infrastructure technology and features, to improve road safety at high-risk locations.

Each year in NSW, over two-thirds of all fatalities occur on country roads.

In NSW, these locations have been identified, assessed and prioritised by the NSW Government based on road crash data and the impact of infrastructure deficiencies. Potential improvements include the introduction of new safety barriers, wide centre lines, and/or audio tactile line marking to attain a safe road cross section.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

² Bureau of Infrastructure, Transport and Regional Economics, 2018.

High Priority Initiatives

Sydney Gateway

Connection between WestConnex at St Peters and Sydney Airport/Port Botany

Location
Sydney, NSW

Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

Road congestion on the arterial road network in and around Port Botany and Sydney Airport is growing as port and airport throughput increases, causing significant delays. This growth, coupled with the expansion of residential and commercial developments nearby, is adding more vehicles onto congested roads in the precinct.

Congestion is a problem throughout the day, rather than just at peak times, with the major road links congested for over half the day. Part of this congestion is generated by road freight in and around Port Botany. Truck traffic at Port Botany is estimated to increase by 400% between 2011 and 2030 if the mode share of rail does not increase.

Two factors in particular will exacerbate congestion:

- Imports and exports through Port Botany are likely to grow. The 2011 throughput of 2 million Twenty Foot Equivalent Units (TEUs) per annum at Port Botany is projected to increase to 7 million TEUs by 2031, an annual growth rate of approximately 7%.
- Passenger air travel is expected to grow at high rates. The Sydney Airport Master Plan (2019) forecasts the number of passengers to grow from 44.4 million in 2018 to 65.6 million in 2039. Air freight is also expected to increase by 58% to 1 million tonnes per annum by 2039.

Increasing rail's mode share of both passenger and freight traffic through the precinct will reduce potential demand on the road network over coming years. However, the road network will still need substantial expansion to cater for traffic to and from locations that are only effectively serviced by road.

This includes all air freight cargo that is carried to and from Sydney Airport by road.

Proposed initiative

The initiative aims to provide a high-capacity road connection between the WestConnex St Peters interchange and Sydney Airport and Port Botany. This will provide substantial additional capacity in and out of the Sydney Airport and Port Botany precinct, allowing airport and port traffic to avoid local arterial roads when accessing WestConnex and the broader Sydney Motorway network.

Next steps

The NSW Government is proceeding with detailed planning, design and procurement to progress the delivery of the Sydney Gateway project.

High Priority Initiatives

Public transport capacity

Parramatta Road and Victoria Road corridors

Location
Sydney, NSW

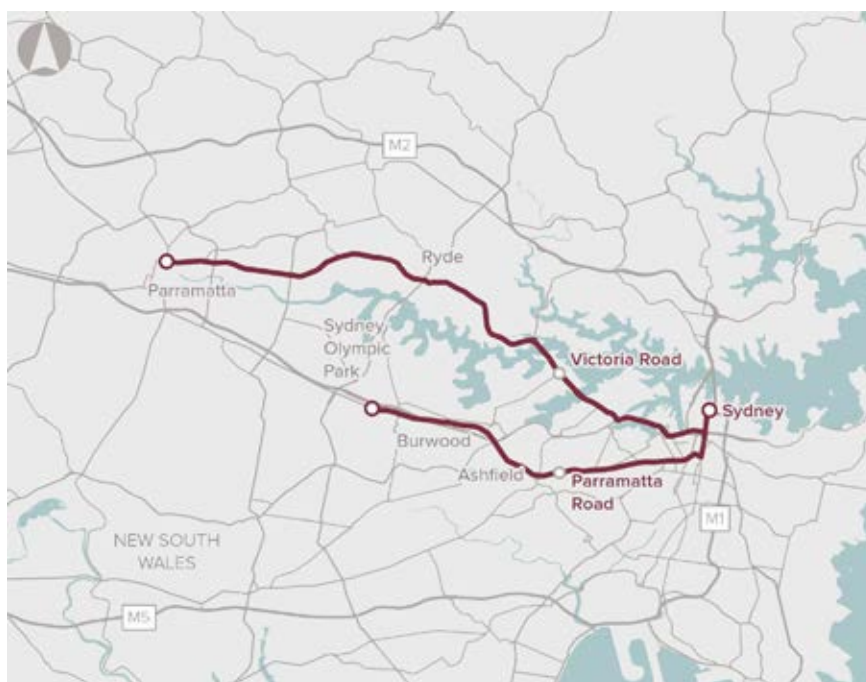
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

The 2019 *Australian Infrastructure Audit* identified that some of Sydney's most congested roads are along the Burwood to Sydney CBD via Parramatta Road corridor, and the Parramatta/Ryde/Sydney CBD via Victoria Road corridor. The cost of congestion in the greater Sydney region is projected to rise from \$8.1 billion in 2016 to \$15.9 billion in 2031. The need for public transport improvements for both corridors is identified in the NSW Government's Future Transport Strategy 2056.

The population of Local Government Areas (LGAs) along the Parramatta Road corridor will grow by approximately 116,000 people between 2016 and 2036.

The population of LGAs along the Victoria Road corridor will grow by approximately 68,000 people in the same period.

While both corridors are served by rail, and some sections are planned to be served by Sydney Metro West, other parts are only practically served by road. For these sections of the corridors, additional public transport capacity is required.

Efficient management of the transport network on these two corridors is a priority issue. Inadequate investment in public transport along these corridors will result in greater reliance on and use of private passenger vehicles, in turn leading to further road congestion and delays at the expense of economic efficiency.

Proposed initiative

The provision of high-capacity public transport infrastructure is potentially an effective method of improving connectivity along priority corridors and alleviating congestion on Sydney's urban transport network.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Sydney rail network capacity

Location
Sydney, NSW

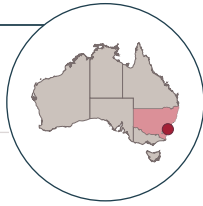
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
March 2018



Problem

Rapid growth in demand for rail transport in the Sydney Basin is leading to passenger crowding and displacement on major parts of the Sydney rail network. In 2017, Sydney's one-hour peak passenger rail demand was approximately 190,000, after growing an average of 3.5% per year from 2006 to 2016. Rail patronage is expected to continue growing by at least 3% per year over the next 10 years.

Current forecasts predict that demand on the North Shore, Inner West & South, Airport and Illawarra lines will exceed capacity in peak times by 2021. The Western Line is expected to reach capacity in peak times by 2031.

Without significant additional capacity, crowding during peak periods will substantially impact on the reliability of the key lines by the mid-2020s.

In addition, signalling systems are reaching the end of their effective life, with unsustainable maintenance costs and high risk of asset failures, which could lead to passenger and operational disruption. Long travel times due to worsening congestion and reduced reliability will result in nationally significant losses in productivity.

Proposed initiative

Potential solutions to accommodate the strong future growth in rail patronage could include significant investment in new services, advanced signalling, infrastructure upgrades and additional fleet.

Next steps

The business case is currently under assessment by Infrastructure Australia (Stage 4 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Southern Sydney to CBD public transport enhancement

Location
Sydney Inner City, NSW



Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Medium term (5–10 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

The transport network between the Sydney CBD and the area south towards Sydney (Kingsford Smith) Airport lacks the capacity to effectively handle prospective population and jobs growth. The population of the Green Square Precinct is projected to grow from 33,000 in 2016 to 61,000 in 2031. While Green Square has a railway station on its western side, the north and east of Green Square Precinct make up a fast growing inner residential area that is not directly served by rapid public transport.

Green Square forms part of the nation's largest bus transport task (Eastern Suburbs–South to Sydney Inner City), as identified in the 2015 *Australian Infrastructure Audit*. Due to road congestion, bus transport to the Sydney CBD from Green Square is slow and unreliable. Potential growth in bus transport, to service a larger population, will add to congestion close to the centre of Sydney.

With Green Square abutting the Sydney Airport precinct and close to the Port Botany precinct (which together generate more than \$10 billion per year in economic activity), there is also an opportunity to grow commercial activity, facilitated by reliable, rapid public transport.

Proposed initiative

A high-capacity rapid transport link, either bus or rail, incorporating new technology, would provide significant additional capacity between the Sydney CBD and the underserved parts of the Green Square Precinct.

The NSW Government's planning for Sydney Metro West includes consideration of a potential future station at Zetland.

The NSW Government is working with key external stakeholders, such as councils, Sydney Airport and NSW Ports to define short-term and longer-term future transport networks for trains, metro, light rail and bus. This will define the delivery of Future Transport Strategy 2056 for this rapidly growing part of the city.

The proponent for this initiative was previously the City of Sydney. The initiative was updated in February 2020 to list the NSW Government as the proponent.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Sydney Metro West

Mass transit between Parramatta and Sydney CBD

Location
Sydney, NSW

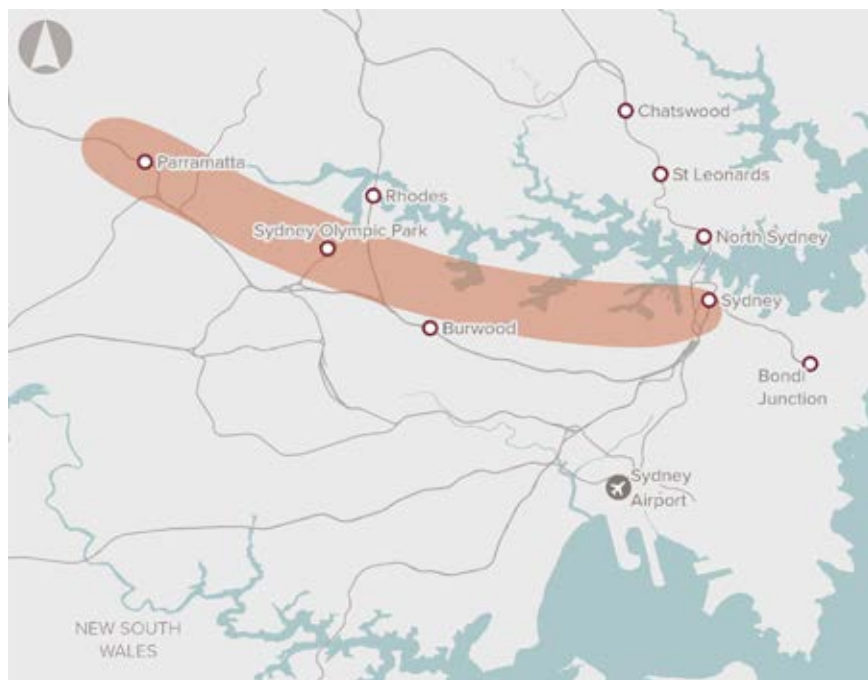
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Medium term (5–10 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

Demand for transport services in the corridor between Sydney CBD and Parramatta is high, and growing. This reflects high levels of employment and population growth along the corridor, and the corridor's role as a conduit for servicing growing transport demand between Western Sydney and the Sydney CBD.

An extra 420,000 people are expected to move into the corridor between Greater Parramatta and central Sydney over the next 20 years, and more than 300,000 jobs are expected to be created in this corridor by 2036.

Future employment and population growth in the corridor will be driven in part by four key precincts: Parramatta, Sydney Olympic Park, The Bays precinct and Sydney CBD.

The 2015 *Australian Infrastructure Audit* projected that passenger demand on the existing T1 Western Line (which is more than a century old) would increase by about 50% between 2011 and 2031. Currently, the T1 Western Line moves around 40,000 people in the morning peak hour and is operating at 135% of seated capacity.

Proposed initiative

The initiative would provide a direct metro rail connection between the Parramatta and Sydney CBDs, linking communities not previously serviced by rail as well as supporting growth in areas between the two CBDs. This initiative has the potential to transform communities, create new ones and link them using a new state-of-the-art public transport system.

A new metro rail service would be able to move about 40,000 people an hour in each direction, and would work together with the T1 Western Line to service the growing needs of Western Sydney, effectively doubling the rail capacity of the Parramatta to Sydney CBD corridor.

The initiative would be integrated with long-term transport and land use planning for Western Sydney, including rail needs currently being investigated around the future Western Sydney Airport.

Since 2016, the NSW Government has been investigating alignment and station options for this corridor. These investigations will support the business case. In October 2019, the NSW Government announced a preferred alignment and station locations.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Port Botany freight rail duplication

Location
Sydney, NSW

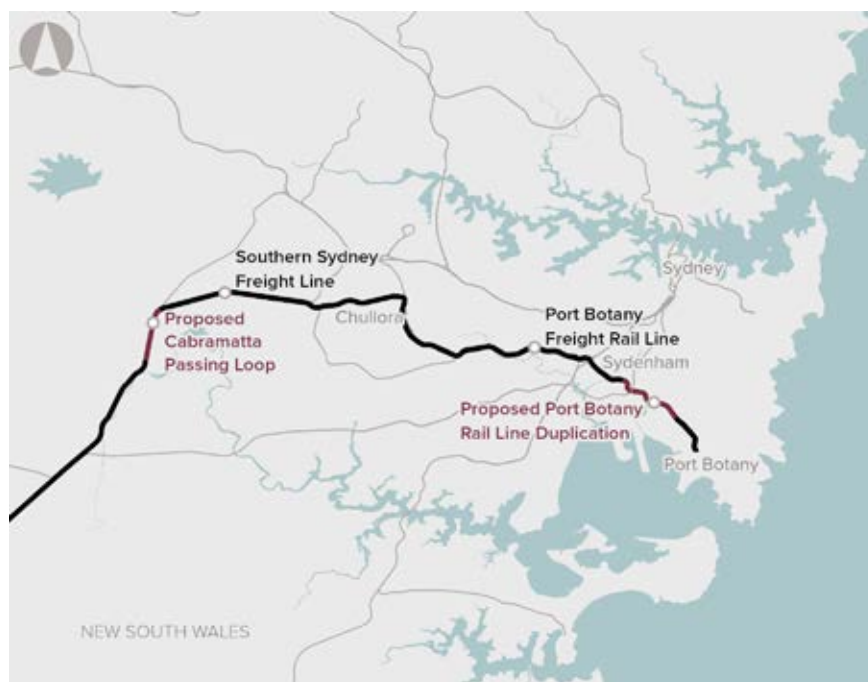
Geography
Fast-growing cities

Category
National Connectivity

Problem timeframe
Near term (0–5 years)

Proponent
Australian Rail Track Corporation

Date added to the IPL
February 2016



Problem

Port Botany is one of Australia's most significant import/export terminals for containerised freight, and a backbone asset for economic productivity within Sydney and New South Wales.

The NSW Ports Master Plan (2015) estimated that container movements through the port would grow from 2.3 million twenty-foot equivalent units (TEUs) in 2015 to between 7.5 million and 8.4 million TEUs by 2045.

Part of the Port Botany Rail Line has only a single track. Additional demand arising from growth in import/export freight (in particular from the development of the Moorebank Intermodal Terminal) has the potential to create a bottleneck along this line. This would impact on reliability and restrict the efficient movement of freight across the broader Sydney rail network.

As Sydney's primary container port, it is vital that Port Botany maintains throughput capacity to meet demand over the long term.

In 2018–19, around 18% of Port Botany containerised freight was moved using the rail network. Increasing this mode share will require additional capacity on the Port Botany Rail Line and the broader Sydney freight rail network.

Proposed initiative

The proposed initiative aims to upgrade the capacity of the Port Botany Rail Line by duplicating 2.9 km of the line. The proposed initiative originally formed part of a broader strategy designed to drive growth in rail mode share for freight to and from the port.

Construction of a passing loop at Cabramatta on the Southern Sydney Freight Line would increase the benefits of the rail duplication project.

The proponent for this initiative was previously the NSW Government. It was changed in February 2019 to the Australian Rail Track Corporation as it is responsible for delivery.

Next steps

The business case is currently under assessment by Infrastructure Australia (Stage 4 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Chullora Junction upgrade

Location
Sydney, NSW

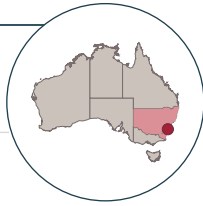
Geography
Fast-growing cities

Category
National Connectivity

Problem timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

The current configuration of Chullora Junction creates a significant operational constraint for the Sydney Freight Network. Given the forecast growth in rail freight movements as a result of significant developments (such as the Moorebank Intermodal Terminal) and population growth, the junction will become a major bottleneck in the absence of any improvements. This will negatively impact on the efficient movement of freight across the network.

If the capacity and resilience of Sydney's rail freight network is not addressed, congestion on both the rail and road networks will substantially increase, negatively impacting on productivity and increasing delays for freight and passengers.

In order to reduce reliance on Sydney's road network, the rail network and intermodal terminals must provide an efficient and cost competitive alternative. Removing identified bottlenecks on the network is critical to increasing the competitiveness of rail.

Proposed initiative

A future upgrade would improve current lowspeed train movements through at-grade junctions at Chullora, and include possible duplication of the Chullora North/Chullora West connection and a holding road between Chullora Junction and Flemington Junction. This could form part of a broader strategy to drive growth in the rail mode share on the Sydney Freight Network.

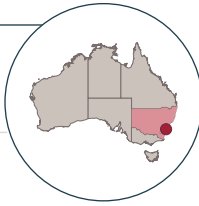
Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Corridor preservation for Western Sydney Airport fuel pipeline

Location
Western Sydney, NSW



Geography
Fast-growing cities

Category
Corridor Preservation

Problem timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

Western Sydney Airport is projected to commence operation by 2026. When operation reaches full capacity, the airport could potentially require 50 to 65 B double fuel tanker deliveries per day, which would add to congestion on Sydney's urban road network. The reliance on fuel transportation by heavy vehicles could also generate congestion problems at the airport site, and contribute to delay costs along key freight corridors.

While a dedicated fuel pipeline is unlikely to be required upon the commencement of airport operations, the identification and preservation of a corridor will ensure a route for the pipeline is available when required.

Developing a fuel pipeline connection would enable efficient, safe and cost effective transportation of jet fuels in significant volumes.

Proposed initiative

Identify and preserve a corridor for a fuel pipeline connection between the Sydney fuel pipeline network and Western Sydney Airport.

The NSW Government is currently undertaking preliminary work to identify route options for a fuel pipeline connection.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Corridor preservation for Western Sydney Freight Line and Intermodal Terminal access

Location

Western Sydney, NSW



Geography

Fast-growing cities

Category

Corridor Preservation

Problem timeframe

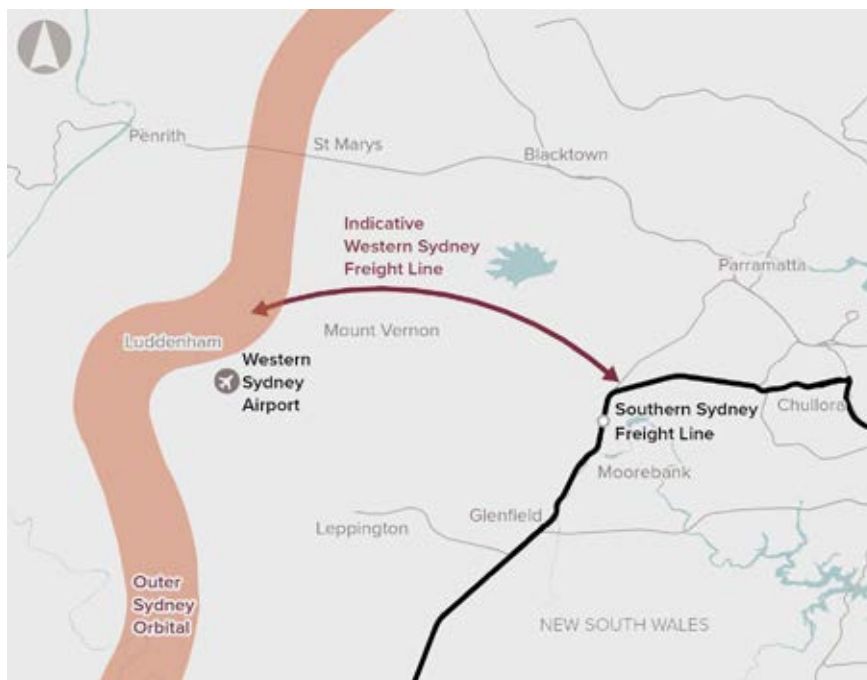
Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

The national land freight task is expected to grow by 86% between 2011 and 2031. The 2015 *Australian Infrastructure Audit* found that freight rail will need to play a growing role in the movement of goods between ports and inland freight terminals. The role of freight rail will be particularly important for containerised freight, with demand for container terminal port infrastructure projected to grow faster than Gross Domestic Product.

In 2018–19, approximately 18% of containerised freight handled at Port Botany was transported by rail. If this trend continues, congestion on Sydney's road network will increase as the number of trucks required to meet the growing freight task increases.

In order to facilitate a shift from road to rail for containerised freight movement in Sydney, additional capacity and higher levels of service are required on Sydney's rail freight network.

Modelling by Infrastructure Australia in 2017 estimates the net cost of protecting and acquiring the Western Sydney Freight Line (WSFL) corridor and intermodal terminal as \$3.6 billion (2016 prices) using a 7% real discount rate.

Proposed initiative

The WSFL is a proposed dedicated rail freight line connecting Western Sydney to the Sydney Metropolitan Freight Network at the Southern Sydney Freight Line (SSFL), with connections to intermodal terminals to service freight moving through Western Sydney from across New South Wales.

The core objective of the initiative is to reduce growth in truck movements on the Sydney road network and reduce delays to freight trains on the main Western Line, where passenger trains have priority. Preservation of the corridor is the first step to achieving this objective.

Construction of the WSFL may also require capacity enhancement of the SSFL, which is separately listed on the *Infrastructure Priority List*.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Corridor preservation for Outer Sydney Orbital road and rail/M9, and Castlereagh Connection

Location

Western Sydney,
Illawarra, Central Coast,
NSW



Geography

Fast-growing cities

Category

Corridor Preservation

Problem timeframe

Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

Western Sydney, as well as areas north and south of Sydney, will need to accommodate large travel demand increases due to significant population and employment growth.

By 2031, an additional 140,000 people are expected to live in the Illawarra and Central Coast regions, and an additional 1 million people in Western Sydney. The broader Western Sydney Employment Area is expected to accommodate 378,000 new jobs in the long term.

Traffic modelling undertaken as part of the 2015 *Australian Infrastructure Audit* indicates that in 2031 parts of the existing outer Sydney road network will be at or above capacity, which is expected to result in congestion and long travel times.

In the absence of long-term planning and corridor protection, future infrastructure provision would be complex and costly.

Modelling by Infrastructure Australia in 2017 estimates the net cost of protecting and acquiring the corridor between Richmond and east of Picton as \$0.3 billion (2016 prices) using a 7% real discount rate.

Proposed initiative

In March 2018, the NSW Government publicly exhibited a planning study to identify and ultimately preserve a preferred alignment for a multi-modal transport corridor in Western Sydney, comprising a motorway, a north–south freight rail line, and, where practical, integrating a north–south passenger rail line.

The NSW Government has confirmed the preservation of the Castlereagh corridor (originally reserved in 1951) to allow for future improvements to road connectivity and transport efficiency within Greater Sydney and to regional areas west of Sydney.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Corridor preservation for Western Sydney Airport rail connections

Location

Western Sydney, NSW



Geography

Fast-growing cities

Category

Corridor Preservation

Problem timeframe

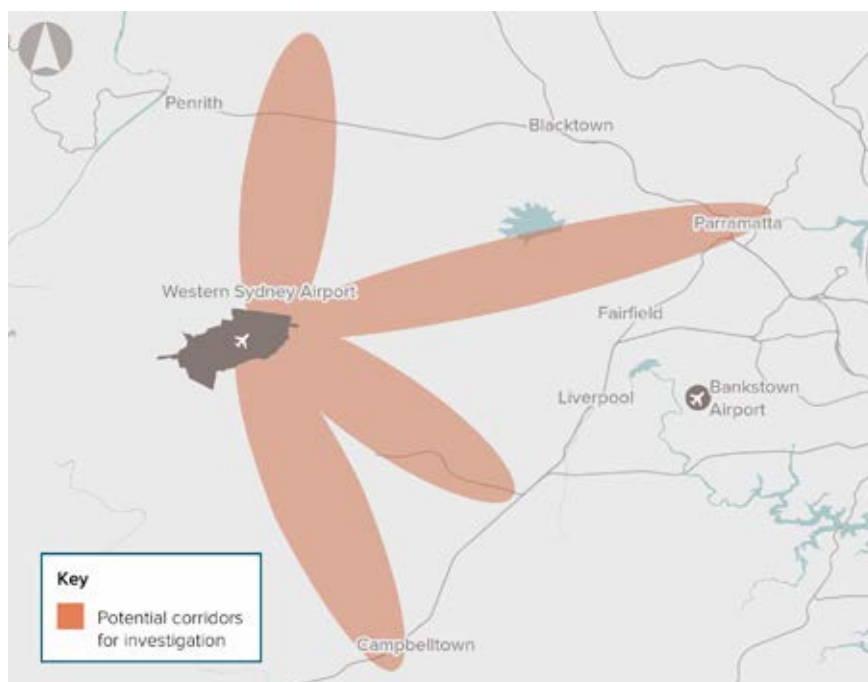
Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

Over the next two decades, the population of Western Sydney will increase by 900,000 people. Around half of all Sydney Basin residents are expected to be living in the region within 25 years. Preliminary analysis indicates that passenger demand at Western Sydney Airport could reach 10 million per year within five years from commencement of operations in the mid 2020s.

Provision of efficient transport options connecting Western Sydney Airport with other key hubs – such as the Sydney CBD, Parramatta, Western Sydney Employment Area, and North West and South West priority growth areas – is critical to avoid unnecessary travel delays and enable sustained economic growth.

Modelling by Infrastructure Australia in 2017 estimates the net cost of protecting and acquiring an indicative corridor from St Marys to the Western Sydney Airport, then to Macarthur and Leppington, as \$0.3 billion (2016 prices) using a 7% real discount rate.

Proposed initiative

Identify and preserve rail corridors connecting the Western Sydney Airport with the Sydney rail network.

The Australian Government and NSW Government jointly released a scoping study that considered six options for rail services to the Western Sydney Airport and the Western Parkland City. Three options have subsequently been shortlisted as part of a longer-term rail network for Western Sydney:

- a north–south line between Schofields and Macarthur via the airport
- an extension of the South West Rail Link
- an east–west line between the Western Sydney Airport and Parramatta.

The Australian Government and NSW Government are jointly funding the planning and delivery of Stage 1 of the north–south line to service Western Sydney Airport and the Western Parkland City, between St Marys and Bringelly. This would support growth in Western Sydney, including the new airport, by providing a transport link that can shape growth while providing fast and efficient transport accessibility.

A medium-term Priority Initiative for Western Sydney Airport public transport connections is separately included on the *Infrastructure Priority List*.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Eastern Freeway and CityLink connection

Location

Melbourne, Vic

Geography

Fast-growing cities

Category

Urban Congestion

Problem timeframe

Near term (0–5 years)

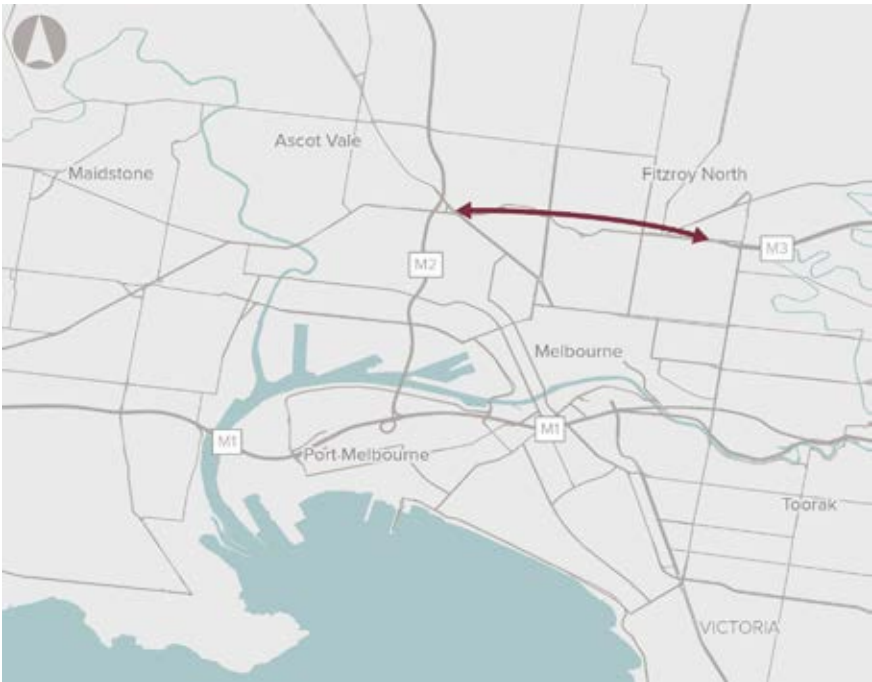
Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2016





Problem

The 2019 *Australian Infrastructure Audit* identified the east–west corridor to the north of Melbourne’s CBD as one of Melbourne’s major congestion challenges. Vehicles travelling east–west between the Eastern Freeway and CityLink are forced to navigate the congested inner-city road network, or the heavily utilised M1 corridor to the south of the city. This results in congestion and delays on Melbourne’s urban road network for both passenger and freight vehicles. The Audit found that this corridor had the highest road congestion delay cost in Melbourne in 2016, with a delay cost of \$91 million. This is expected to worsen by 2031, with the delay cost projected to increase to \$131 million (2016 prices).

The Eastern Freeway only extends as far as Hoddle Street on the edge of the CBD, channelling the large volume of vehicles heading into and out of the city onto residential streets in the inner north.

Proposed initiative

An improved connection between the Eastern Freeway and CityLink would help to address congestion in the area.

Next steps

Proponent to be identified.

High Priority Initiatives

Melbourne rail network capacity

Location
Melbourne, Vic

Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Medium term (5–10 years)

Proponent
Victorian Government

Date added to the IPL
March 2018



Problem

Future growth of Melbourne's outer suburban population and the centralisation of jobs in the CBD will increase demand for Melbourne's rail network. While rail capacity in the south-east and north-west of the metropolitan area will increase through the Melbourne Metro Tunnel development, lines in the north-east, the west and the south-west will need additional capacity in the coming decades.

Modelling by Infrastructure Victoria indicates that, by 2031, demand on the South Morang line will exceed supply in the morning peak, with lines in the west and south-west also reaching capacity.

A more congested rail network will lead to nationally significant productivity losses associated with longer travel times and worsening conditions for passengers, with some passengers potentially switching to road vehicles and causing additional road congestion.

Increased rail capacity would encourage car users to switch to public transport, reducing environmental impacts and encouraging more people to walk to train stations.

Proposed initiative

Potential solutions to the emerging capacity constraints could include upgrading the signalling and rolling stock, and augmentations to key lines and stations on the network with the possibility of an additional tunnel through Melbourne's CBD, bypassing the city loop.

This initiative focuses on capacity constraints close to the Melbourne CBD. It is complementary to other separate Priority Initiatives for capacity constraints on the Melton, Cranbourne, Hurstbridge and Geelong lines, which service outer areas.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Corridor preservation for Melbourne Outer Metropolitan Ring Road/E6

Location
Melbourne, Vic

Geography
Fast-growing cities

Category
Corridor Preservation

Problem timeframe
Near term (0–5 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2016



Problem

There is a need to preserve transport corridors to ensure that cost-effective transport infrastructure can be provided in the future. Preserving transport corridors is a multi-step process that includes defining the corridor, applying land use controls, and acquiring the land required for the corridor.

The Victorian Government has undertaken planning for the Outer Metropolitan Ring Road and E6 corridor, and defined the corridor through application of a Public Acquisition Overlay in 2010. This allows for compulsory acquisition of property when required. It also gives VicRoads rights to request refusal of development applications.

The early protection and staged purchase of land in the corridor is aligned with Infrastructure Australia's previous recommendations to the Council of Australian Governments, and consistent with the 2016 *Australian Infrastructure Plan*.

Modelling by Infrastructure Australia in 2017 estimates the net cost of protecting and acquiring the Outer Metropolitan Ring Road/E6 and site for the proposed Western Interstate Freight Terminal at \$2.3 billion (2016 prices) using a 7% real discount rate.

Proposed initiative

The initiative is corridor preservation for the Outer Metropolitan Ring Road and E6 in Melbourne. The corridor has provision for a freeway (four to six lanes in each direction) and four rail tracks. The land required for the corridor was defined and preserved in 2010 through a Public Acquisition Overlay. The next step in preserving the corridor is acquisition of land in the corridor as it becomes available.

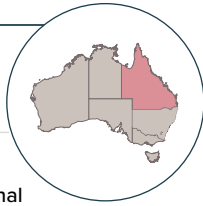
Next steps

Proponent to be identified.

High Priority Initiatives

Queensland National Land Transport Network maintenance

Location
Queensland



Geography
Smaller cities and regional centres

Category
Asset Renewal

Problem timeframe
Near term (0–5 years)

Proponent
Queensland Government

Date added to the IPL
February 2020



Problem

The road component of the National Land Transport Network (NLTN) in Queensland has a significant maintenance and rehabilitation backlog. The poor condition of roads has increased costs to communities and the freight industry by increasing travel times, creating safety risks and reducing network resilience.

The NLTN in Queensland is made up of approximately 5,000 km of roads, 940 bridges and 1,260 major culverts, and carries almost half of all traffic travelling on Queensland's state-controlled road network.

The Queensland Government has identified some 885 km of the network as 'high priority' for maintenance or rehabilitation. Approximately 340 km of pavements and structures urgently require programmed maintenance, while 546 km require rehabilitation.

The Queensland Government expects the cost of addressing these issues to rise significantly if they are not addressed now.

This initiative is complementary to the High Priority Initiative for a *National road maintenance strategy*, which identifies road maintenance issues for national, state and local roads across Australia (see page 69).

Proposed initiative

The initiative is for a structured program approach to addressing the maintenance backlog for the NLTN in Queensland. It is likely to include:

- programmed maintenance, such as replacing road surfaces
- pavement rehabilitation
- bridge and culvert rehabilitation.

Next steps

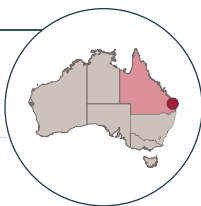
Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Ipswich Motorway upgrade

Rocklea to Darra (remaining sections)

Location
Western Brisbane, Qld



Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Queensland Government

Date added to the IPL
February 2016



Problem

The Ipswich Motorway Corridor currently experiences congestion and extensive delays. Modelling undertaken for the 2019 *Australian Infrastructure Audit* estimates the direct cost of congestion along the corridor at around \$68 million in 2016, which is projected to increase considerably over time.

The problem results in inefficient freight movement. The Ipswich Motorway is one of the three busiest freight corridors in Queensland. The section between Rocklea and Darra is used by 10,000–12,000 heavy vehicles a day, representing 15–18% of all traffic.

Proposed initiative

The initiative proposes a suite of road upgrades along 7 km of the Ipswich Motorway between Rocklea and Darra, including:

- widening the corridor to six lanes
- improved flood immunity
- ramp rationalisation
- improved east–west local connectivity
- enhancement of cross motorway connections
- managed motorway treatments.

A business case for Stage 1c of the Initiative (Package 1) was assessed by Infrastructure Australia in May 2016, and the project is currently under construction.

Package 2 proposes the upgrade of the Oxley/Blunder Road interchange. The remainder of the initiative involves the widening and upgrading of the remaining section of the corridor.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

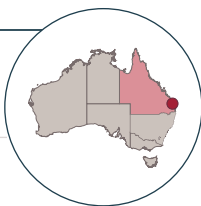
High Priority Initiatives

M1 Pacific Motorway capacity

Eight Mile Plains to Tugun

Location

South East Queensland



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

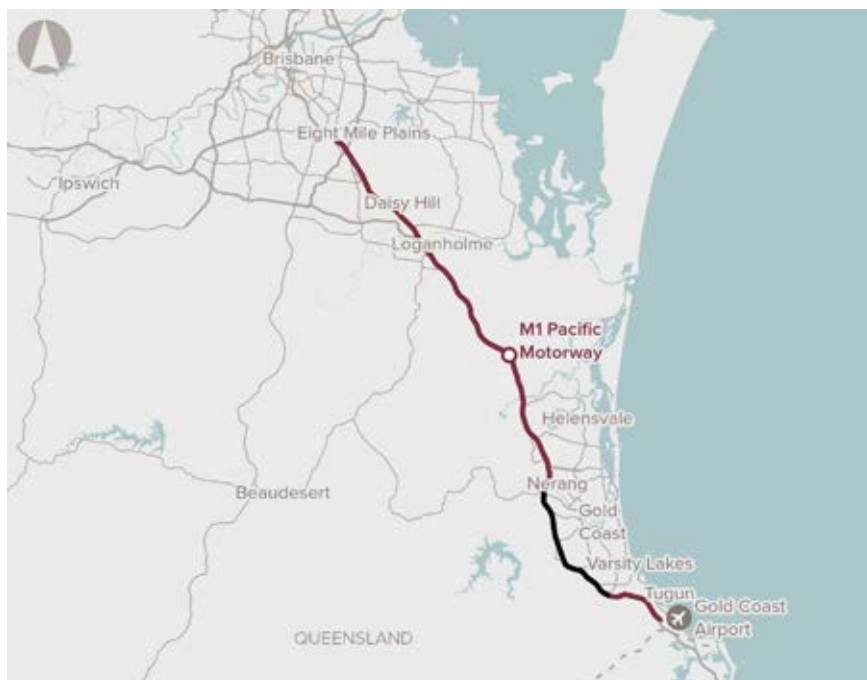
Near term (0–5 years)

Proponent

Queensland Government

Date added to the IPL

February 2019



Problem

The M1 Pacific Motorway is a vital component of the National Land Transport Network and serves as the primary road corridor connecting Brisbane to the Gold Coast and south to New South Wales. The South East Queensland section of the M1 Pacific Motorway is the primary north–south arterial road that connects the key population and employment centres of Brisbane, Logan and the Gold Coast. The M1 also services and connects major transport hubs and industrial precincts, including the Gold Coast and Brisbane International Airports, and the Port of Brisbane.

The M1 Motorway is one of the busiest roads in Australia, carrying in excess of 150,000 vehicles per day, including over 12,000 heavy vehicles. The section of the motorway between Eight Mile Plains and Tugun cannot currently accommodate this volume of traffic and, as a result, experiences frequent and prolonged periods of congestion.

The section between Eight Mile Plains and Tugun is heavily congested on most days, as vehicles travel in and out of Brisbane from the rapidly growing Gold Coast, northern New South Wales, and Logan regions.

Current traffic volumes exceed the design capacity of the motorway, creating congestion with nationally significant impacts on productivity. The lack of an alternative route exacerbates congestion issues when there are incidents on the motorway. By 2036, congestion impacts are expected to worsen and result in over 89,767 vehicle hours of delay each day.

Over the medium- to long-term, population growth is expected to remain strong in the Gold Coast area, while employment growth is expected to be strongest in Brisbane. Given this projection, the Eight Mile Plains to Tugun section of the M1 corridor will remain critical in connecting residential areas in the south to job prospects in Brisbane.

Proposed initiative

This program initiative focuses on resolving capacity, efficiency and safety issues on the following four sections of the motorway between Eight Mile Plains and Tugun:

- between Eight Mile Plains and Daisy Hill
- between Daisy Hill and Loganholme
- between Loganholme and Nerang
- between Varsity Lakes and Tugun.

Business cases for the sections between Eight Mile Plains and Daisy Hill, and between Varsity Lakes and Tugun, have been assessed by Infrastructure Australia and are separately listed as Priority Projects on the *Infrastructure Priority List*.

In October 2019, the Queensland Government announced that planning is underway for the Coomera Connector Stage 1 between Coomera and Nerang as an alternative route to relieve pressure on the M1 Pacific Motorway.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework), and complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Individual sections are at various stages of development.

High Priority Initiatives

Port of Brisbane dedicated freight rail connection

Location

Brisbane, Qld

Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

Medium term (5–10 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2016





Problem

By 2045, container trade at the Port of Brisbane is forecast to increase by 300%, representing an increase of 4.8% per year. The 2015 *Australian Infrastructure Audit* identified that growth at the Port of Brisbane is likely to become constrained by the lack of a dedicated freight rail connection.

Population growth in South East Queensland is creating congestion on both the road and rail networks, negatively impacting on the productivity of greater Brisbane and the Queensland economy as a whole.

The rail connection to the Port of Brisbane from the south is shared between passenger and freight trains on some sections. Passenger trains take priority over freight trains, with freight trains constrained to operate to and from the port only during out of peak periods. As freight and passenger demand grows, the shared sections will become further constrained, and additional capacity for freight trains will be required.

The preservation and, ultimately, construction of a dedicated freight rail corridor would allow more freight movements to be removed from the road network, which would help alleviate congestion.

Proposed initiative

A future upgrade would seek to improve connectivity between the Port of Brisbane and freight terminals in the Brisbane region through preserving and, ultimately, delivering a dedicated freight rail corridor. This would aim to meet the projected increase in freight volumes, while facilitating a modal shift from road to rail.

The Australian Government and Queensland Government are undertaking a joint study of options and requirements for this initiative. This study will take into account current and future demand and consider the relationship with the Inland Rail Project.

Next steps

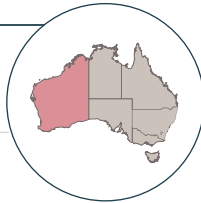
Proponent to be identified.

High Priority Initiatives

Regional and rural WA road network safety improvements

Location

Western Australia



Geography

Small towns, rural communities and remote areas

Category

Road Safety

Problem timeframe

Near term (0–5 years)

Proponent

Western Australian Government

Date added to the IPL

February 2020



Problem

Between 2008 and 2017, 61% of fatalities and 35% of serious injuries on the road network in Western Australia (WA) occurred in regional and rural areas.

Single vehicle, loss-of-control, run-off-road crashes constitute around a third of all serious casualty crashes on the WA road network. Infrastructure can play an important role in mitigating the consequences of these crashes. The relatively low cost measures of sealed road shoulders, wide centre lines and audible edge lines have been shown to substantially reduce the chance of these crash types.

The WA Government's Towards Zero Road Safety Strategy 2008–2020 targets a 40% reduction in road crash outcomes by 2020, which has the potential to save 11,000 people from being killed or seriously injured.

Proposed initiative

This initiative complements the national High Priority Initiative for *Regional road network safety improvements* (see page 64). It involves treatments such as sealing shoulders, wide centre lines and audio tactile line marking to attain a safer road cross section on the State's Highway and Main Roads regional and rural road network.

As at 2018, the WA Government had applied safety treatments to more than 1,465 km (8%) of the State's Highway and Main Roads regional and rural road network.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Perth water security

Location
Perth, WA

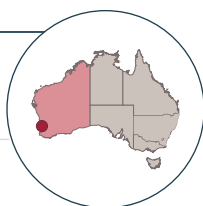
Geography
Fast-growing cities

Category
Resilience

Problem timeframe
Near term (0–5 years)

Proponent
Western Australian Government

Date added to the IPL
February 2020



Problem

Perth's urban water sector faces considerable risks, including the impacts of climate change, population growth, ageing assets and changing needs and expectations from users. Failure to address these challenges could lead to rising water bills, as well as exposing users to declining service quality and reliability.

Perth's current water supply comprises a diverse portfolio of water sources, including surface water, groundwater, desalinated seawater and recycled water, serving a population in excess of 2.3 million in the Perth metropolitan area, and the Goldfields and Agricultural Water Supply area.

Streamflow entering Perth's water storages has dropped from a pre-1975 average of 420 gigalitres (GL) per year, to a post-1975 average of 184 GL per year. In 2015, streamflow dropped to 16 GL, or just 4% of the pre-1975 average.

Proposed initiative

The initiative is for a program of water sourcing and water demand management initiatives. This could include a mix of more conventional water sources, as well as more innovative reuse and recovery options, to provide additional sources of climate-independent potable water.

This initiative complements the national High Priority Initiative of *Town and city water security* (see page 65).

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

High Priority Initiatives

Perth CBD to north corridor capacity

Location
Perth, WA

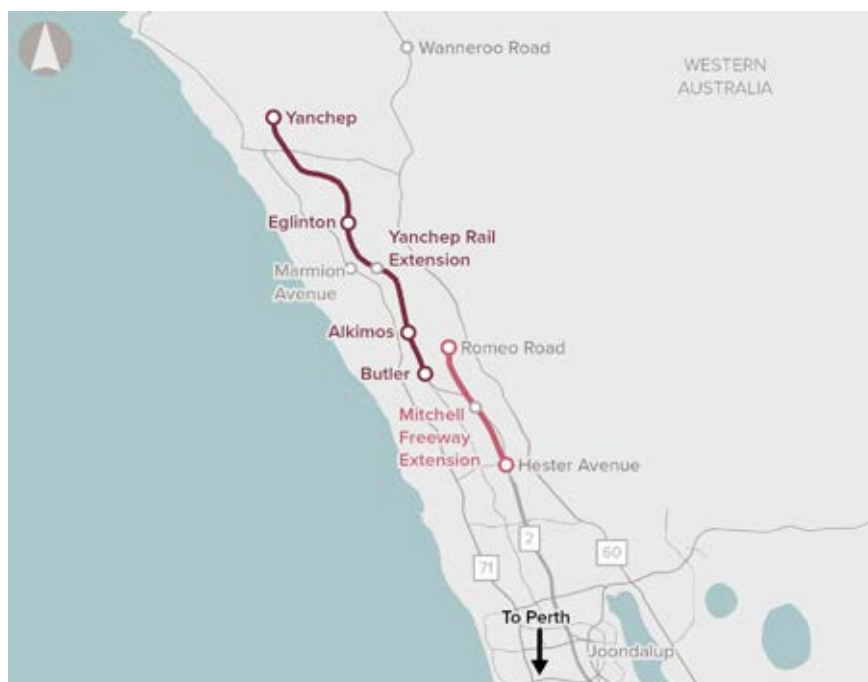
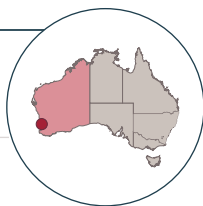
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Western Australian Government

Date added to the IPL
February 2016



Problem

Traffic congestion in the Perth metropolitan region is impacting on the efficiency of the transport network.

The 2015 *Australian Infrastructure Audit* projected that transport delay costs in Perth are expected to grow at an average annual rate of around 11%, from \$2 billion in 2011 to \$16 billion in 2031.

In the absence of additional capacity, the northern corridor is likely to become the most congested corridor in Perth, with demand expected to exceed capacity well before 2031. The Audit estimated that delay costs on the corridor, including the Mitchell Freeway, Marmion Ave/West Coast Highway and Wanneroo Road, would reach \$2 billion (2011 prices) by 2031. While recent modelling scales back the projected rate of population growth in the region compared to the rate used in the Audit (reflecting the slower rate of growth in Western Australia following the mining boom) growth is still projected to average around 2.6% per year.

This growth will continue to drive increased demand for both road and public transport.

Proposed initiative

The Western Australian Government has commenced upgrades along Marmion Avenue and Wanneroo Road and is currently developing a business case for the proposed Mitchell Freeway extension to Romeo Road.

A business case for the Yanchep Rail Extension was evaluated by Infrastructure Australia in 2018 and previously included on the *Infrastructure Priority List* as a High Priority Project. This project will extend the Joondalup Line from Butler to Yanchep.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework), and complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Individual sections are at various stages of development.

High Priority Initiatives

Mitchell and Kwinana freeways upgrade

Location
Perth, WA

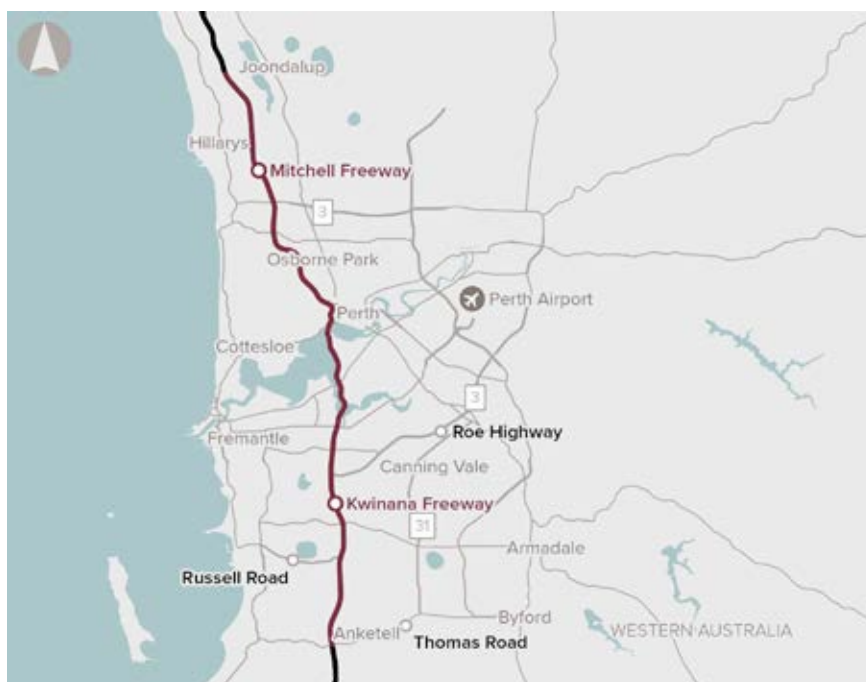
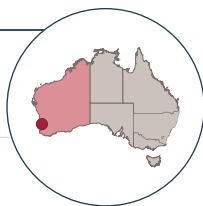
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near to medium term (0–10 years)

Proponent
Western Australian Government

Date added to the IPL
March 2018



Problem

The Mitchell and Kwinana freeways form the main north–south arterial road corridor through Perth, serving both commuter and freight trips. Congestion is already an issue along the corridor during peak hours, particularly at the Swan River crossing between Perth City and South Perth.

In the absence of additional capacity, the 2015 *Australian Infrastructure Audit* projected that the Mitchell Freeway would become the most congested corridor in Australia, with demand expected to exceed capacity well before 2031. While recent modelling scales back the projected rate of population growth in the region compared to the rate used in the Audit (reflecting the slower rate of growth in Western Australia following the mining boom) growth in the region will still increase congestion along the corridor.

Congestion is currently characterised by frequent stop–start conditions that are directly contributing to an increasing number of rear-end crashes and compromising road safety. The travel time delays associated with these events will increasingly result in nationally significant losses to productivity. However, in the inter-peak period, there is surplus capacity across the network. This suggests there is some scope for demand management to spread peak period transport flows.

Proposed initiative

This initiative proposes implementing Intelligent Transport System technologies to actively manage traffic flow on the Kwinana Freeway. This would enhance road capacity and improve safety, maximising the existing productive capacity of the road network and delaying the need for further large-scale investments in the corridor.

A number of projects to increase capacity are also currently underway on sections of the Kwinana and Mitchell freeways, including northbound widening of the Kwinana Freeway between Russell Road and Roe Highway.

This initiative was originally included in the *Infrastructure Priority List* as the *Mitchell and Kwinana Freeways – widening and smart freeways technology* initiative. It was updated in February 2019 to include other sections of the corridor.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Summaries





Bicycle lane, Australia

Priority Initiatives

Indigenous art and cultural facilities program

Location

National

Geography

National

Category

Social Infrastructure

Problem timeframe

Near term (0–5 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2020



Opportunity

The 2019 *Australian Infrastructure Audit* recognised that arts and cultural infrastructure plays a key role in the social and economic empowerment of Aboriginal and Torres Strait Islander peoples. The Audit notes that many of the current facilities are no longer fit-for-purpose and suffer from poor maintenance.

Arts and cultural facilities support Aboriginal and Torres Strait Islander artists by creating more employment opportunities, improving wellbeing, educating people on Aboriginal and Torres Strait Islander cultures, and potentially improving national identity.

Further, there is high demand for Aboriginal and Torres Strait Islander culture and art in Australia from both domestic and international visitors. Currently, there are few dedicated art and cultural centres catering to this demand.

Proposed initiative

The opportunity is for a national program of Aboriginal and Torres Strait Islander art and cultural centres and galleries.

Many jurisdictions have taken steps towards developing these facilities:

- Infrastructure New South Wales recommended a flagship Indigenous Cultural Centre in 2014 that would be a hub to connect to other facilities.
- A similar proposal was made for Alice Springs in the Northern Territory and an Aboriginal Art and Cultural Gallery/Centre in the Perth Metropolitan Area in Western Australia.
- The South Australian Government is including an Australian National Aboriginal Art and Cultural Gallery in its renewal of the old Royal Adelaide Hospital site (now known as 'Lot Fourteen').

While there will be some competition between proposed facilities across multiple states and territories, there will be national benefit to providing dedicated facilities for the exhibition of Aboriginal and Torres Strait Islander art and culture.

The program requires a coordinated response to ensure that facilities are sufficiently diverse to be complementary, encouraging visitation at multiple locations.

Next steps

Proponent(s) to be identified.

Priority Initiatives

Mobile telecommunications coverage in regional and remote areas

Location

National



Geography

Small towns, rural communities and remote areas

Category

National Connectivity

Problem timeframe

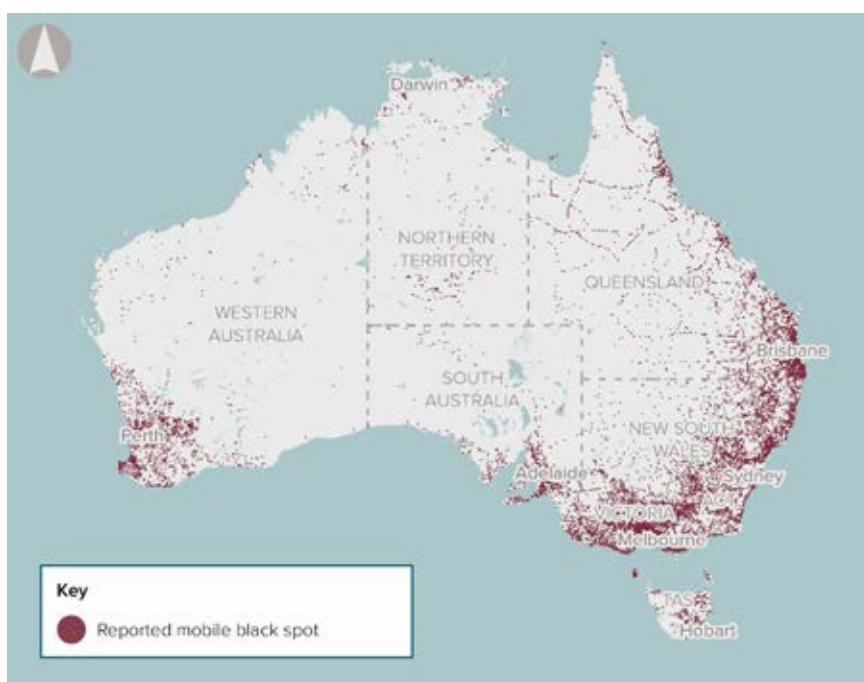
Near term (0–5 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2020



Problem

Many parts of Australia's regional and remote areas have no, or poor, mobile phone voice and data reception, affecting quality and reliability of services.

While Australia's mobile phone networks cover most individuals at home, there is limited service in many regional and remote areas (known as mobile blackspots) reducing mobile phone access for individuals when they travel and for some regional and remote communities.

The lack of connectivity disadvantages Australians in these areas who rely on mobile connections for social inclusion and access to services, such as health (for example, telehealth), education (for example, online distance education) and other welfare services, as physical services are often not cost effective to provide in these areas.

Access to reliable telecommunications can also be critical in emergency situations such as extreme weather, bushfires, flooding or serious trauma incidents, such as road accidents. A lack of mobile coverage can delay response times, thereby increasing the risk of lasting harm or loss of property.

Improved coverage can also benefit regional business with access to new markets or technologies, such as digital farming practices, and supports economic participation among isolated communities.

The 2019 *Australian Infrastructure Audit* acknowledges that mobile services in regional, rural and remote areas can be costly and poor quality, and that coverage gaps affect community safety, liveability and productivity.

The Australian Government is funding remote and regional mobile telecommunications improvements through the Mobile Black Spot Program. More work is required to fully address the issue.

Proposed initiative

The initiative is to improve the availability and quality of mobile services in certain regional and remote areas.

Locations for consideration for greater prioritisation should include the national transport network, regions with elevated risk of emergency or threat, as well as communities with barriers to economic and social participation.

Next steps

Proponent(s) to be identified.

Priority Initiatives

Advanced Train Management System implementation on the interstate rail network

Location

Australian interstate rail network



Geography

National

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

Australian Rail Track Corporation

Date added to the IPL

February 2016



Problem

Australia's interstate freight rail network comprises many long sections of single track. This restricts the number of train paths, reducing rail's competitiveness with road, and hindering rail's ability to meet growing freight movement demand. The interstate freight rail network needs to be enhanced to accommodate growth in the freight and passenger task, and improve efficiency and safety.

Proposed initiative

The Advanced Train Management System (ATMS) is a wireless satellite communications-based train control system that will replace line-side signalling, allowing:

- more train paths, to increase line capacity
- faster crossings, to reduce transit times
- improved rail safety
- improved system reliability
- reduced maintenance costs for signalling equipment.

ATMS will improve the safety and efficiency of train operation, and improve competition with road. It is proposed to be rolled out across the interstate rail network linking metropolitan centres and key national ports.

There is in-principle agreement to adapt ATMS to be inter-operable with the Electronic Train Control System being implemented in some commuter networks.

The Australian Government has provided \$50 million in grant funding to prepare for the deployment of ATMS between Tarooola and Kalgoorlie.

Implementation stage 1, which involves deployment between Port Augusta and Whyalla, is now complete and the ATMS safety case has been certified allowing ATMS to be the primary safe-working system. Implementation stage 2, which involves roll-out to Tarooola–Kalgoorlie, has advanced to detailed design and commissioning and is anticipated to proceed during 2020/21.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Sydney–Canberra rail connectivity and capacity

Location

National

Geography

National

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

NSW Government & ACT Government

Date added to the IPL

February 2020



Opportunity

The Sydney to Canberra corridor plays a significant role in Australia's regional transport network.

However, the 320 km rail line between Sydney and Canberra is constrained by terrain, ageing infrastructure and track sharing with freight movements, leading to slow train speeds and long journey times for passengers.

In-vehicle journey times between Sydney and Canberra are currently about 1 hour by air, 3 hours by car and over 4 hours by train. As a result, only 1% of people travelling between Sydney and Canberra choose to travel by train.

The number of people living between Canberra and Sydney is forecast to grow by 1.5% each year to 2036, increasing pressure on the road network and airports.

Improving rail services in this corridor would provide more transport options for travellers, improve travel-time reliability for rail passengers and reduce pressure on the air corridor.

Proposed initiative

The opportunity is for a range of potential upgrades to enable faster rail services between Sydney and Canberra to improve the customer experience, increase productivity and provide a competitive alternative to driving or flying.

These potential upgrades may include:

- track straightening and duplication
- track formation renewal
- electrification and signalling upgrades
- new rolling stock.

The initiative requires a coordinated approach between the ACT and NSW governments, as well as the Australian Government and the Australian Rail Track Corporation.

It should also consider the potential role of high speed rail in the future. Preserving a corridor for a high speed rail line on the east coast of Australia is separately included on the *Infrastructure Priority List* as a High Priority Initiative (see page 73).

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Connection between eastern gas markets and gas suppliers

Location
National

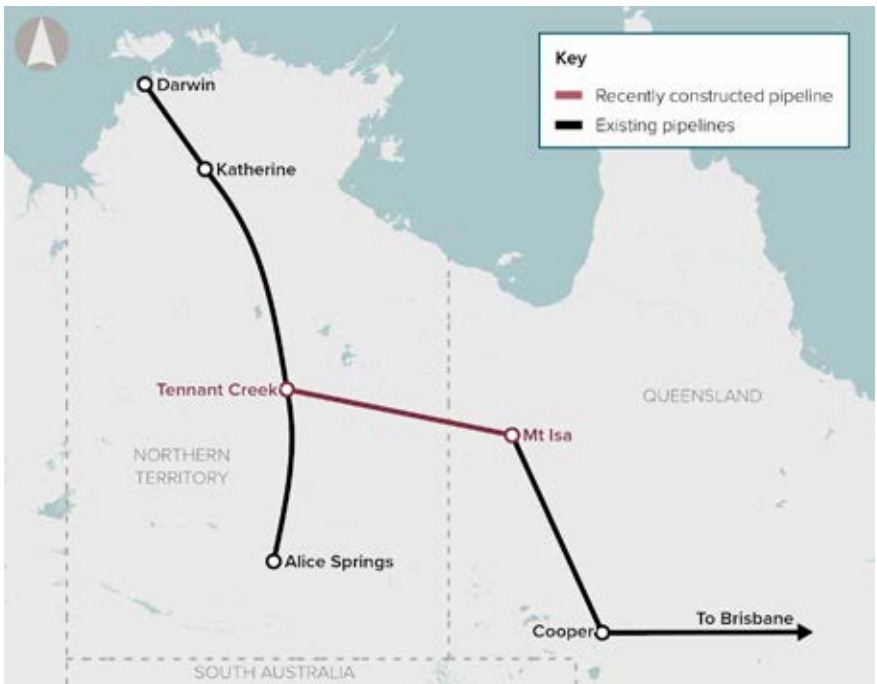
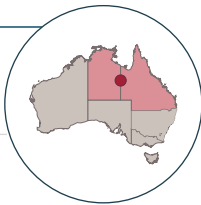
Geography
National

Category
Efficient Markets

Problem timeframe
Near term (0–5 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2016



Problem

The 2015 *Australian Infrastructure Audit* identified a potential gas supply shortfall in the eastern gas market as a result of increased domestic and export demand. In the absence of additional supply, this increased demand is expected to lead to higher prices. The Northern Territory and Western Australia have price-competitive gas available, but are not directly linked to the eastern gas pipeline network.

Providing a connected national energy market with sufficient capacity to supply domestic and foreign markets, withstand supply shocks and market forces, and sustainably contribute to Australia's broader environmental goals will support the resilience of the national economy.

Proposed initiative

Develop infrastructure to connect northern and/or western Australian gas reserves to the eastern gas markets.

A project to construct a pipeline between Tennant Creek and Mount Isa, connecting the Northern Territory gas supply with the eastern gas market, was completed in 2018. This provides some additional supply to the eastern states, and supports economic growth in the Northern Territory.

However, it is not yet clear if this link is sufficient to address the shortfall in the eastern gas market. Additional action, including possible future capacity investment between the Northern Territory and the eastern states, or a pipeline connection to Western Australia, may be required in the future.

Next steps

Proponent(s) to be identified.

Priority Initiatives

National Electricity Market

Near-term optimisation

Location

National

Geography

National

Category

Efficient Markets

Problem timeframe

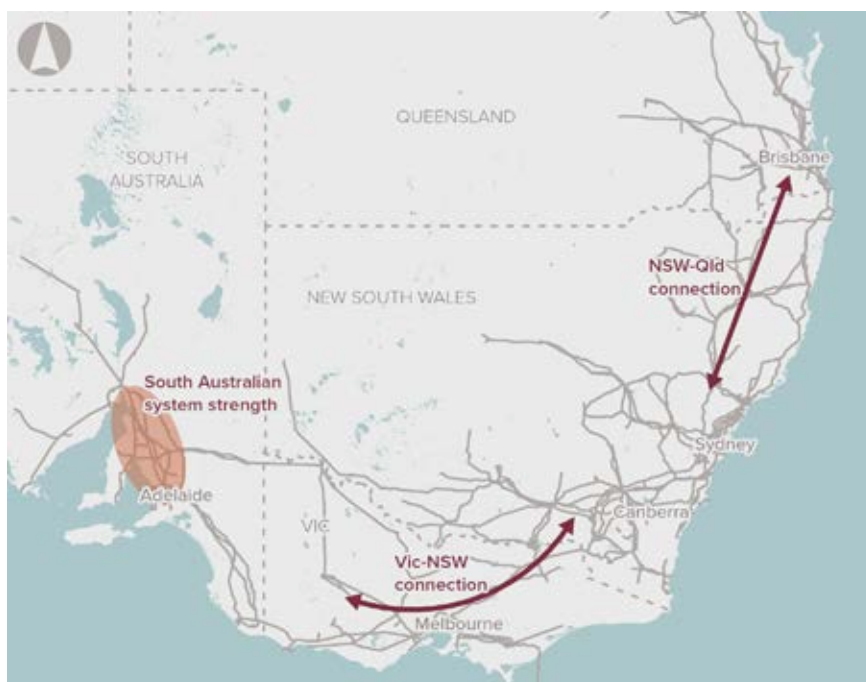
Near term (0–5 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2019



Opportunity

The National Electricity Market (NEM) serves almost 90% of Australia's population, but faces significant challenges as electricity generation shifts away from thermal electricity generation, towards a more diverse but intermittent portfolio of fuels, such as wind and solar, backed up by dispatchable generation, such as pumped hydro. The power system is also adapting to changing patterns of consumer demand, predominately caused by the uptake of residential solar power.

This transition will need to be effectively managed to ensure the reliability, security and affordability of electricity for users.

In the near-term, there is an opportunity to optimise the NEM by increasing system connectivity, strength and transfer capacity. This can defer the need for major capital investment and increase competition in the NEM.

Near term investments in supporting infrastructure, such as network capacity and systems services, will also create a more reliable and secure power system that can better withstand variable consumer demand and unplanned events.

The power system's resilience and reliability can also be enhanced by increasing the capacity to transmit electricity across regions, increasing fuel diversity and geographic coverage.

The Australian Energy Market Operator is currently updating its Integrated System Plan (ISP), which was first released in 2018 and formed part of the evidence base for this initiative.

Medium- to longer-term uncertainty of managing the transition to a more diverse portfolio of fuels is also included in the *Infrastructure Priority List* as a High Priority Initiative.

Proposed initiative

The 2018 ISP identified three groups of investments over the near, medium and long term. This initiative relates to the potential near-term investments (called Group 1 in the ISP) that would improve interconnections between NEM regions, and make better use of existing assets. These are:

- increasing transfer capacity between the Queensland, New South Wales, and Victoria NEM regions
- reducing network congestion for existing and committed renewable energy developments in western and north-western Victoria
- improving network system strength in South Australia.

Since the release of the 2018 ISP, the Australian Energy Regulator has approved upgrades to system strength in South Australia and consultation is underway on upgrading transmission capacity between Queensland, New South Wales and Victoria.

The investments and their timing will be subject to detailed assessment of their costs and benefits by network infrastructure owners.

Next steps

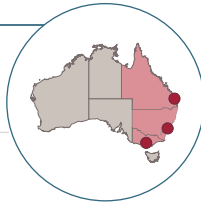
Proponent(s) to be identified

Priority Initiatives

East coast deep water container port capacity

Location

East coast of Australia



Geography

National

Category

Efficient Markets

Opportunity timeframe

Longer term (10–15 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2020



Opportunity

Global shipping trends show a significant increase in the containerisation of cargo. This, in turn, is resulting in the size of container ships increasing. Globally, the capacity of container ships has increased to around 20,000 twenty-foot equivalent units (TEUs).

While many ports on the east coast of Australia have capacity to accommodate increasing throughput, they are limited in the size of vessel that can be accommodated. Shipping companies tend to service multiple ports along a route, making the choice of vessel linked to the capacity of all ports along that route. In Australia, Sydney can accommodate ships of 10,000 TEUs, but Melbourne is limited to approximately 8,000 TEUs.

No Australian port can accommodate the larger, more energy-efficient ships carrying more than 14,000 TEUs. Therefore, Australia is unable to benefit from the potential cost reductions and efficiency improvements because of its container port constraints (both wharf-side and land-side).

As the vast majority of Australia's international freight is transported by ship, changes in supply chain efficiency would have a disproportionately large impact on competitiveness and consumers in Australia, compared with other countries.

Proposed initiative

The initiative is for infrastructure improvements that enable larger vessels access to Australian ports on the east coast. This could require channel deepening at existing ports, development of new port locations and enhanced land-side access infrastructure at ports.

Westport in Western Australia is currently developing a long-term port strategy, which is considering options for deep water port access, motivating the east coast focus of this proposed initiative.

Given the preference of cargo ships to make multiple stops on a route, a network of deep water ports will likely be required, rather than a single port at a given location. This incentivises shipping lines to provide larger vessels to service Australia and maximises potential economic efficiencies. Any capital investment should be considered in the context of pricing arrangements to avoid impeding competition.

There may also be an opportunity to consider the development of a container port facility that can accommodate the largest ships as a transshipment port for other destinations within Australia.

Next steps

Proponent(s) to be identified.

Priority Initiatives

John Hunter Health and Innovation Precinct capacity

Location
Newcastle, NSW

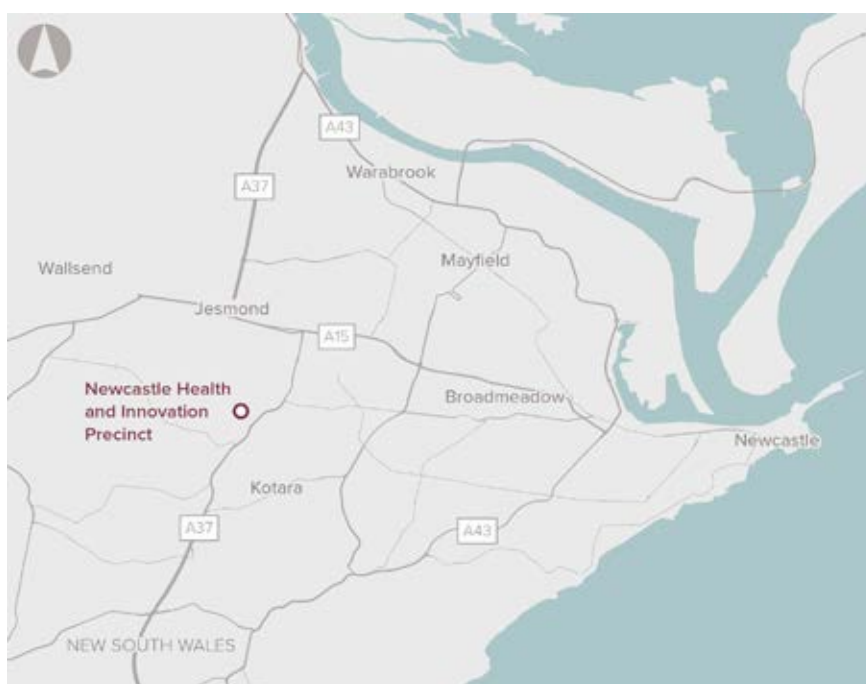
Geography
Smaller cities and regional centres

Category
Social Infrastructure

Problem timeframe
Longer term (10–15 years)

Proponent
NSW Government

Date added to the IPL
February 2020



Problem

The John Hunter Health Campus in Newcastle faces significant capacity constraints, with its average occupancy at 98%, compared with the usual benchmark of 85%.

The existing infrastructure is not suited for delivering contemporary and future digitally-enabled models of care. For example, operating theatres are undersized against current standards, limiting their ability to accommodate new technology and equipment.

The John Hunter Health Campus also has one of the busiest emergency departments in New South Wales. In 2018, the emergency department served over 81,000 presentations in a space originally designed for 47,000.

The 2019 *Australian Infrastructure Audit* recognises that the growing population and demand for health services is placing pressure on existing health infrastructure.

Proposed initiative

Potential options to address the problem include optimising the current facilities and operations alongside major upgrades or redevelopment of the campus.

There is also an opportunity to better integrate health, education, research and community services and infrastructure within the Newcastle Health and Innovation Precinct.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Active transport (walking and cycling) access to Sydney CBD

Location
Sydney, NSW

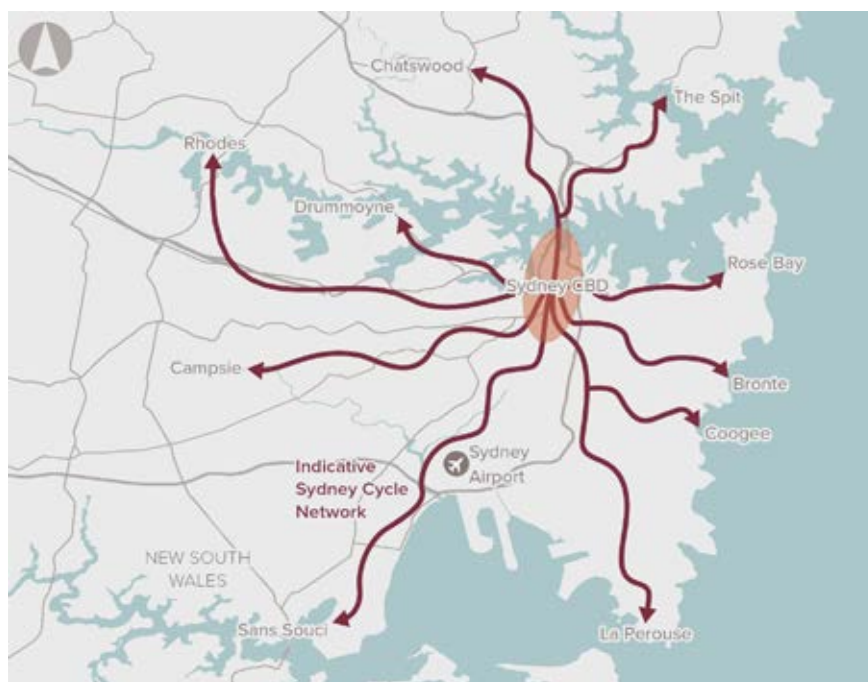
Geography
Fast-growing cities

Category
Urban Congestion

Opportunity timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

The cost of congestion in the greater Sydney is estimated to increase from around \$8.1 billion in 2016 to \$15.9 billion in 2031. With a growing population and an increasingly centralised workforce, Inner Sydney is forecast to have the highest number of trips for any region in New South Wales.

Five of Sydney's most congested urban roads are located within a 10 km radius of Sydney's CBD. Some parts of the public transport network in Inner Sydney are also projected to reach or exceed current capacity by 2031.

There are more than 1 million daily short distance trips (that is, less than 5 km) undertaken by private motor vehicles and taxis within 10 km of the CBD. Safety concerns and disparate travel routes are current barriers to other forms of short distance or active transport.

A 2–5% shift of short distance car trips within 10 km of the CBD to active transport may result in a reduction of between 20,000 and 50,000 motor vehicle trips per day on Inner Sydney's congested corridors.

Proposed initiative

Upgrade a network of 284 km of dedicated cycling and shared cycling/walking paths, on existing radial and cross-regional corridors within a 10 km radius of the CBD.

As Sydney grows, there may be sufficient intra-regional trip volumes to support an extension of the network west to Parramatta.

The proponent for this initiative was previously the City of Sydney. The initiative was updated in February 2020 to list the NSW Government as the proponent.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Sydney CBD motorways optimisation

Location
Sydney Inner City, NSW

Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2019



Problem

Motorways in the Sydney CBD are an integral part of the road network, providing through movements and access between the CBD and other major centres. Traffic joining the motorways is unmanaged, and the roads are not performing effectively to cope with growing demand.

The roadways are currently congested during peak times, which has significant knock-on impacts on the broader road network. Further, the large number of events and incidents exacerbates congestion and unreliable travel times. This also results in more crashes, particularly during congested periods.

Without intervention, demand growth will lead to even higher levels of congestion, unreliability and frequency of crashes.

Proposed initiative

The initiative focuses on better use of existing assets to improve performance and capacity of the road network.

Potential responses includes the provision of Intelligent Transport Systems and other technology to regulate traffic flows onto and off the motorways, and to increase real-time information for motorists. The objectives would be to:

- reduce travel times, vehicle operating costs and environmental impacts
- improve travel time reliability, user experience and road safety.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Prospect Highway capacity

Location

Western Sydney, NSW

Geography

Fast-growing cities

Category

Urban Congestion

Opportunity timeframe

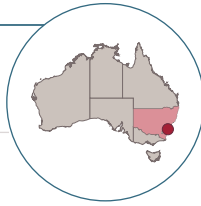
Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2019



Problem

The section of the Prospect Highway/ Blacktown Road between Wall Park Avenue and the M4 Western Motorway is currently at capacity, carrying approximately 36,000 vehicles per day with only a single lane in each direction. Approximately 10% of the traffic (or 3,600 vehicles) are heavy vehicles. Traffic volumes are forecast to reach approximately 75,000 vehicles per day within the next 25 years, which would double the existing peak hour volumes.

The two-lane, two-way configuration of the bridge over the Great Western Highway limits capacity and creates a bottleneck.

Existing travel speeds average around 30 km/h during peak periods, which is half the speed limit. Traffic modelling suggests travel speeds will further deteriorate to 25 km/h for light vehicles, 19 km/h for heavy vehicles and 7 km/h for public buses by 2038.

Proposed initiative

The initiative involves an upgrade of a 3.6 km section of the highway to a generally four-lane divided carriageway of consistent standard, with a range of improvements to interchanges, intersections and public and active transport infrastructure.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

A3 and A6 corridor capacity

Location
Sydney, NSW

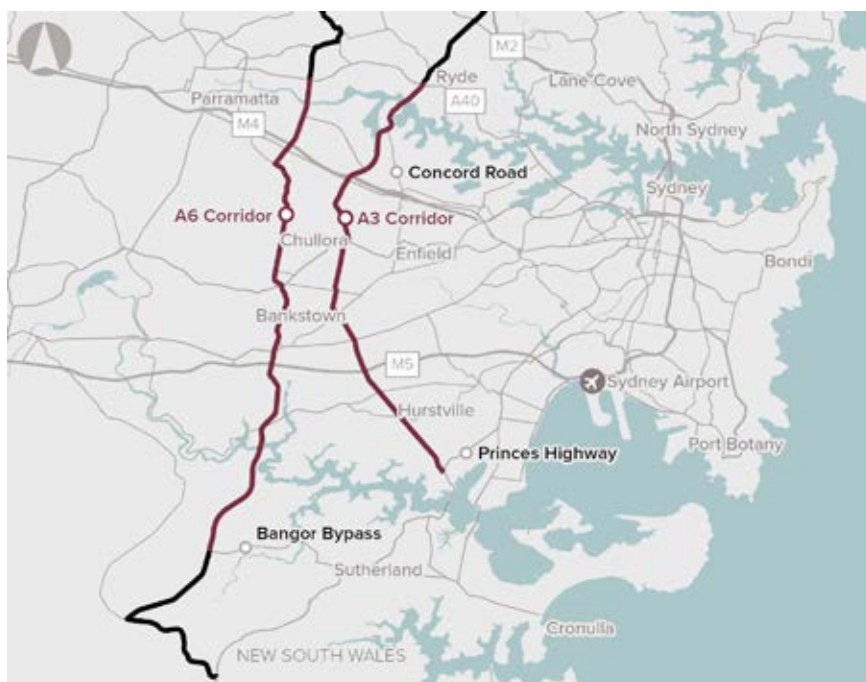
Geography
Fast-growing cities

Category
Urban Congestion

Opportunity timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2019



Problem

The A3 and A6 corridors are major arterial roads that service north–south journeys for both freight and general traffic in Sydney. High traffic volumes on both corridors are leading to slow and unreliable trips, and are impacting on freight productivity, particularly during peak times. The 2015 *Australian Infrastructure Audit* identified the A3 between the M4 Motorway and Princes Highway, and the A6 between Sutherland and Ryde, as Sydney's second and fifth worst routes for congestion, as measured by delays per lane kilometre.

The A3 and A6 both connect to the M5 and M4 motorways. The A3 provides freight access between Sydney and the Sutherland Shire/Illawarra region, as well as to Sydney Airport, Port Botany and the Chullora and Enfield intermodal terminals. Up to 98,500 vehicles use the A3 each day at its busiest section – Concord Road at Rhodes.

The A6 serves as a key road transport link to the Bankstown Strategic Centre, and carries approximately 65,000 vehicles a day along Stacey Street near Bankstown.

Proposed initiative

Capacity constraints on the A3 and A6 corridors could be addressed through a range of initiatives, such as intersection upgrades and road widening. Potential upgrades should be considered in the context of an overall integrated program, as improvements to either of the corridors may also reduce pressure on the other.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Public transport access to Parramatta CBD

Location

Western Sydney, NSW

Geography

Fast-growing cities

Category

Urban Congestion

Opportunity timeframe

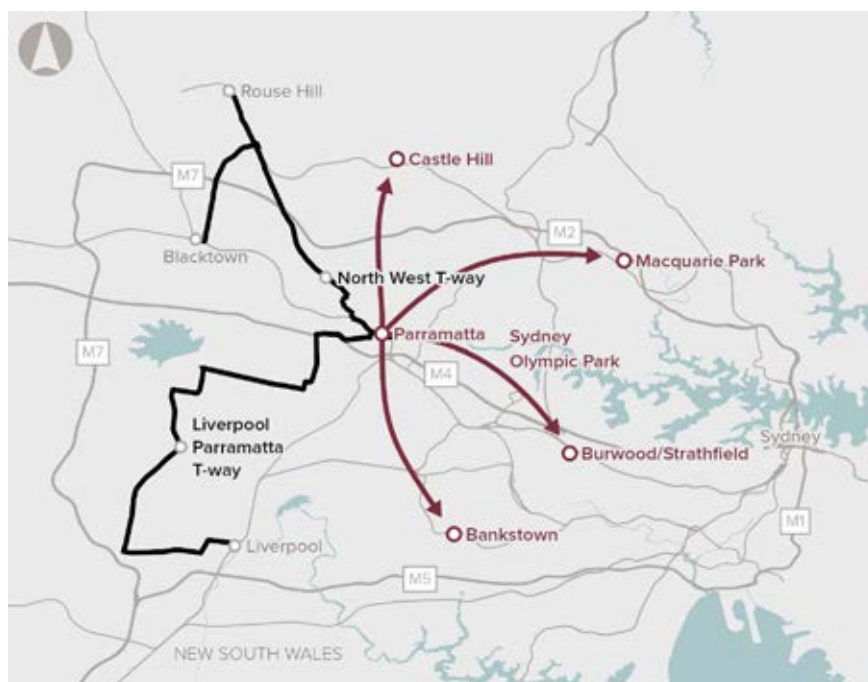
Near to medium term (0–10 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

The NSW Government's Future Transport Strategy 2056 identified the need for additional mass transit links connecting Parramatta with strategic centres across Western Sydney.

From 2011 to 2031, Sydney's population is expected to increase by 1.6 million people. The majority of this growth (900,000 people) is forecast to occur in the Western Sydney region. As a stand-alone region, Western Sydney would be the nation's fourth-largest region and third-largest economy.

The Parramatta CBD and several other precincts – including the Westmead health precinct, Western Sydney University, Rydalmere, North Parramatta, and Camellia – have been identified for urban renewal and residential and commercial redevelopment. This redevelopment is expected to accelerate Parramatta's growth and bring more jobs, businesses and residents into the Parramatta CBD and surrounding areas. Employment in the Parramatta Local Government Area is expected to grow 30% by 2031, from 114,000 people in 2016.

Without investment in public transport, population and jobs growth will lead to increased congestion on the road and rail networks.

Proposed initiative

The initiative proposes additional public transport, which could include mass transit (heavy rail and metro) and intermediate transit (bus or light rail), to connect Parramatta to strategic centres and residential areas in Western Sydney. This would help alleviate congestion on the road and public transport networks. Some public transport solutions could also facilitate urban renewal in Western Sydney.

In October 2019, the NSW Government announced a preferred alignment for Sydney Metro West that may address challenges in one of the identified corridors. Sydney Metro West is separately listed as a High Priority Initiative on the *Infrastructure Priority List*.

The NSW Government is also delivering Parramatta Light Rail Stage 1, which will link Westmead and Carlingford through the Parramatta CBD.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Central Station redevelopment

Rail and station infrastructure

Location

Sydney Inner City, NSW

Geography

Fast-growing cities

Category

Urban Congestion

Problem timeframe

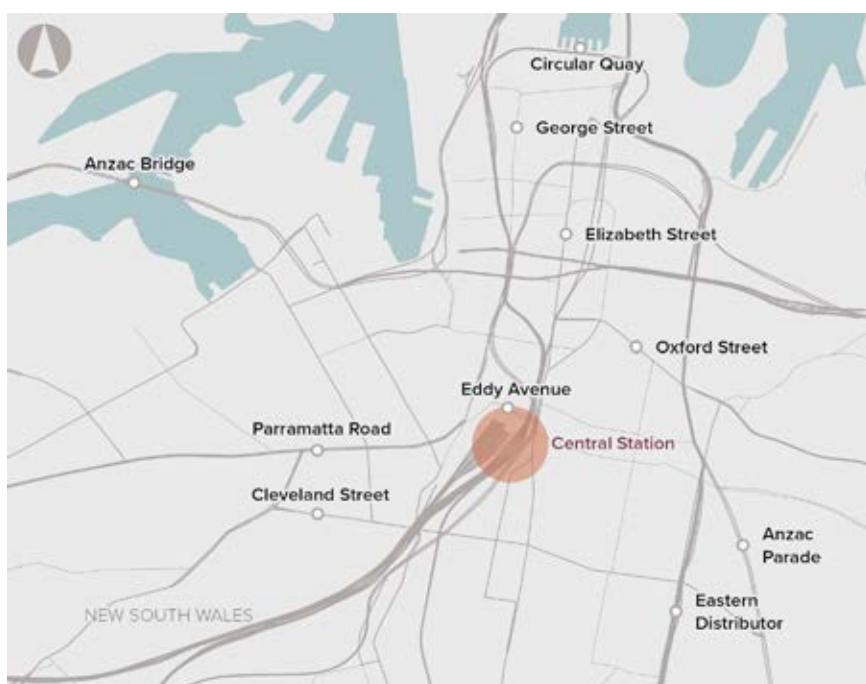
Medium term (5–10 years)

Proponent

NSW Government

Date added to the IPL

February 2017



Problem

Central Station is Sydney's busiest transport interchange. It serves as a critical multimodal transport interchange for suburban and intercity rail services, country and interstate coaches, suburban buses and light rail services. In 2019, Central became an interchange point for the CBD and South East light rail line, and from 2024 Central will also be an interchange station for the Sydney Metro (rapid transit) service.

Day-to-day customer experience of the station is poor in terms of circulation, navigation, legibility, access, capacity and crowding. These problems are expected to get worse as total passenger movements are projected to increase by 67% between 2014 and 2036, and passenger interchanges between rail services in the morning peak are projected to increase by 106% in the same period.

Proposed initiative

The initiative comprises upgrades to rail and station infrastructure to support passenger movement and interchange. This includes access improvements to connect the new Metro station with the rest of Central Station, and other enhancements to the station's functionality. The NSW Government has commenced construction of Central Walk, a new underground pedestrian concourse at Central Station that will better connect passengers to trains, light rail and the new Sydney Metro underground platforms.

A proposed second stage of the initiative deals with the renewal of the broader station precinct. This second stage has not been assessed for inclusion on the *Infrastructure Priority List* at this time.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

M6 Motorway

Connection between the M1 Princes Motorway at Waterfall and the Sydney motorway network

Location

Southern Sydney, NSW



Geography

Fast-growing cities

Category

Urban Congestion

Problem timeframe

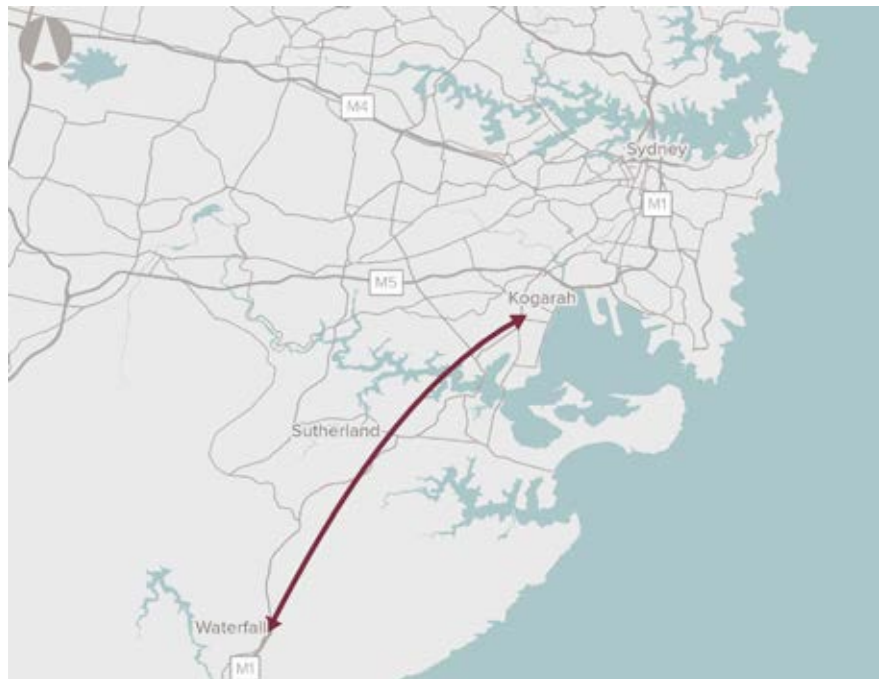
Medium term (5–10 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

There is no motorway standard route between the Sydney motorway network and the M1 Princes Motorway at Waterfall. Demand for road travel along this corridor is high and the arterial network is at capacity during peak periods. The three crossings of the Georges River, which together accommodate almost 200,000 trips per day, are at or close to capacity. These problems lead to long travel times, both because of slower speeds and intersections on arterial roads, and congestion.

The 2019 *Australian Infrastructure Audit* identifies the Sydney to Illawarra corridor as the second-most congested in Sydney for the AM and PM peaks in 2016, as measured by total vehicle delays. In 2031, it projects that the corridor will still be the second-most congested in the PM peak, and the third-most congested in the AM peak.

Proposed initiative

The initiative proposes a motorway connection between the Sydney motorway network and the M1 Princes Motorway at Waterfall.

The NSW Government has committed to construct Stage 1 of the link between WestConnex (New M5) and President Avenue at Kogarah.

The Environmental Impact Statement for Stage 1 was placed on public exhibition in late 2018 and planning approval was granted in December 2019 by the NSW Department of Planning, Industry and Environment.

This initiative was originally included in the Infrastructure Priority List as the 'F6 Extension'

Next steps

Proponent to complete business case development of remaining sections (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Western Harbour Tunnel and Beaches Link

Location
Sydney, NSW

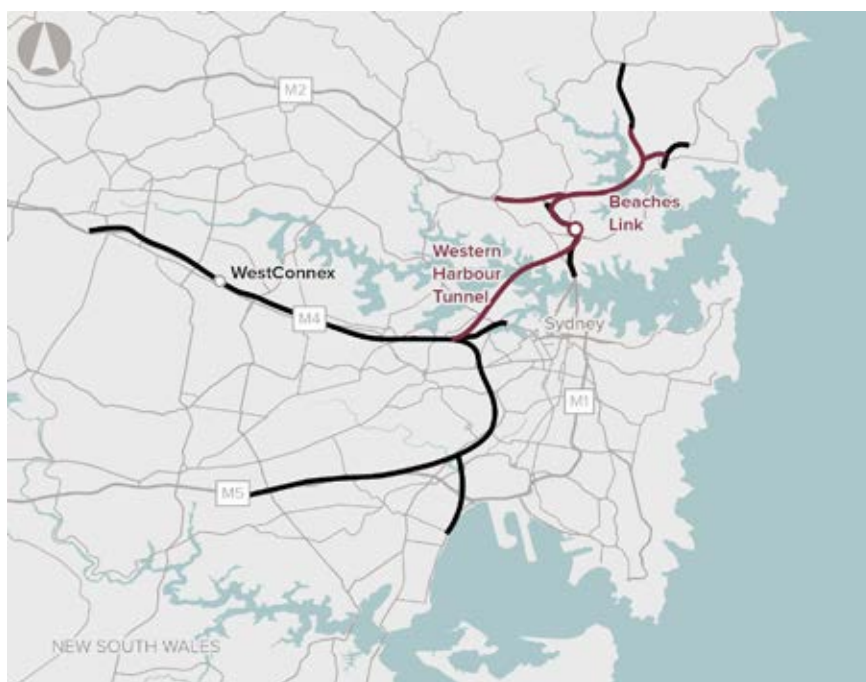
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Medium term (5–10 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

Travel demand across Sydney Harbour and onto the Northern Beaches is projected to increase, resulting in further congestion. Congestion on these corridors impacts on bus and private vehicle travel, with bus travel particularly impacted by congestion on the Spit Bridge/Military Road. The high levels of demand for existing infrastructure reflects the channelling of traffic onto the Sydney Harbour Bridge and Tunnel across Sydney Harbour, and the Spit Bridge and Roseville Bridge across Middle Harbour.

The 2019 *Australian Infrastructure Audit* ranks the North Sydney–Northern Beaches Corridor as the fourth most congested corridor in Sydney's PM peak periods during 2016, and forecast seventh most congested in 2031, as measured by total vehicle delays. The Gore Hill/Warringah Freeway/Sydney Harbour Bridge/Eastern Distributor Corridor is projected to become the 10th most congested corridor in Sydney in 2031.

Proposed initiative

The initiative proposes a motorway crossing underneath Sydney Harbour, connecting WestConnex with the Warringah Freeway, and a motorway connection from the Warringah Freeway and Gore Hill Freeway to Seaforth/Balgowlah on the northern side of Middle Harbour.

Next steps

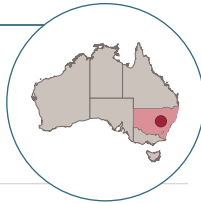
Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Newell Highway upgrade

Location

NSW section of
Melbourne–Brisbane
inland route



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

The Newell Highway is part of the National Land Transport Network. It is the principal inter-capital freight route between Melbourne and Brisbane, and is a critical link for regional producers in central and western New South Wales. Freight movements on the corridor are expected to grow strongly, supported by robust population growth in both Melbourne and Brisbane.

The efficiency of the route is constrained by localised congestion and flooding, deteriorating pavement and a lack of overtaking opportunities. Road alignment in several sections is also unsuitable for some High Productivity Vehicles.

These factors constrain freight productivity by increasing travel times and the number of vehicle journeys required, as well as reducing freight reliability.

Proposed initiative

The initiative seeks to improve several sections of the highway to support safe High Productivity Vehicle access, and improve safety and reliability.

The initiative will also consider first/last mile issues faced by High Productivity Vehicle operators in the corridor.

Realignment of a 6.5 km section of the highway at Trewilga was completed in February 2018.

Construction commenced on heavy duty pavement south of Boggabilla in late 2018. Construction has also commenced on a program to deliver around 30 overtaking lanes.

Planning has commenced for a range of further works:

- bypasses of Parkes and Coonabarabran
- heavy duty pavement provision (North Moree, Narrabri to Moree)
- road widening (Boggabilla to Goondiwindi and Coonabarabran to Narrabri)
- upgrade of intersection with Mitchell Highway at Dubbo
- new Dubbo Bridge and realignment
- improved flood immunity.

The NSW Government completed the Newell Highway Corridor Strategy in June 2019 and is progressively developing business cases for each element of this initiative.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Pacific Highway (A1)

Coffs Harbour bypass

Location

Coffs Harbour, NSW



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

Connecting Sydney and Brisbane, the Pacific Highway is an important passenger and freight corridor, and is part of the National Land Transport Network. Currently, vehicles on the Pacific Highway must travel through the Coffs Harbour CBD. This increases freight and passenger vehicle travel times and increases the potential for conflict between heavy vehicles, passenger vehicles and pedestrians in this built-up area. The 2015 *Australian Infrastructure Audit* identified improving freight network efficiency as a key challenge for New South Wales.

Preliminary economic analysis estimates that the annual cost of the problem is in the order of \$55 million per year.

Proposed initiative

This initiative proposes constructing a bypass around Coffs Harbour. This would also include an upgrade to an existing section of highway to deliver a total of 13.2 km of motorway standard dual carriageway on the Pacific Highway.

To the north, 155 km of the Pacific Highway is being upgraded between Woolgoolga and Ballina, with sections progressively being opened by late 2020 to complete a minimum four-lane corridor between Sydney and Brisbane.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

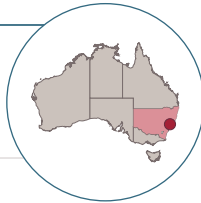
Priority Initiatives

Pacific Motorway (M1)

Extension to Raymond Terrace

Location

Beresfield to Raymond Terrace, NSW



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

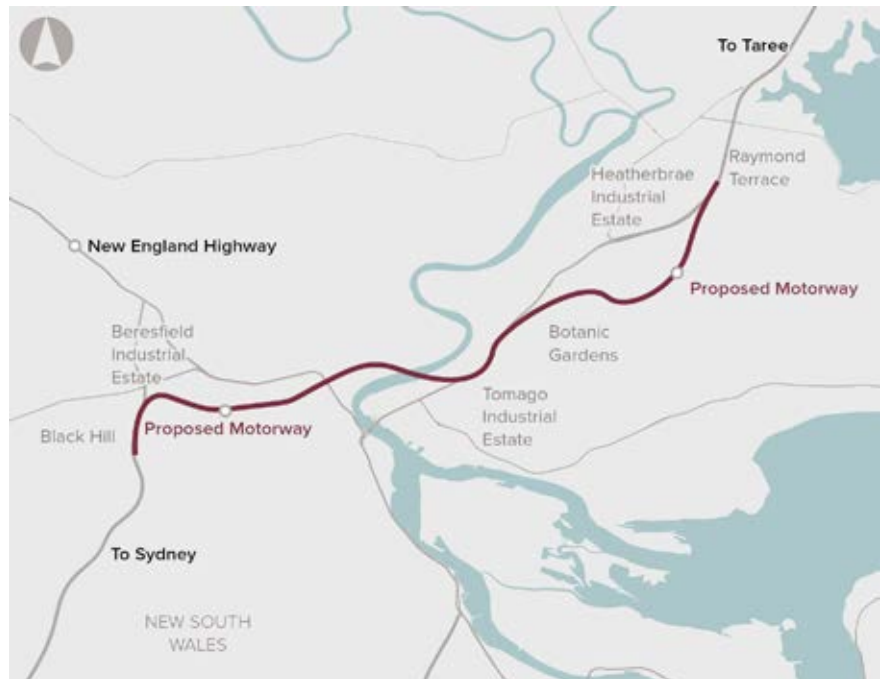
Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

The Pacific Motorway/Highway is one of the most heavily used road corridors for freight in New South Wales. The highway is critical to the transport of freight between Sydney and Brisbane.

The section of the corridor between Black Hill and Raymond Terrace is also part of a strategic junction where the north–south traffic flows between Sydney and Brisbane cross the east–west traffic flows between Newcastle, including the Port of Newcastle, and the Hunter, New England and Central West and Orana regions.

Between John Renshaw Drive and Raymond Terrace, the highway is at arterial road standard with at-grade intersections, hindering the free flow of freight and commuter traffic.

Traffic speed during the morning peak is estimated to be 60 km/h by 2021, dropping to 23–39 km/h by 2031. In 2016, an average 22,000 vehicles used the route during the afternoon peak. This is expected to increase by 36% by 2031. The major growth drivers are the planned industrial developments at Black Hill, Tomago Road and Weakleys Drive. It is estimated that road network improvements could increase travel speed by around 20 km/h.

The current road network does not adequately cater for High Productivity Vehicles. Heavy vehicles travelling to and from Tomago industrial area and the Port of Newcastle are required to undertake contra-flow movements during the night. The use of High Productivity Vehicles to transport freight is estimated to generate significant productivity benefits.

It is estimated that these vehicles could perform the freight task with up to 37% fewer trucks and vehicle kilometres travelled compared to other vehicles.

Proposed initiative

The initiative proposes to upgrade the Pacific Highway between John Renshaw Drive and Raymond Terrace to motorway standard. The improved road standard and bypasses of Hexham and Heatherbrae would lead to productivity benefits from faster freight movements north–south in the Sydney–Brisbane corridor, and for intersecting east–west traffic flows between Newcastle, including the Port of Newcastle, and the Hunter, New England and Central West and Orana regions.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Western Sydney Infrastructure Plan

Location

Western Sydney, NSW



Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

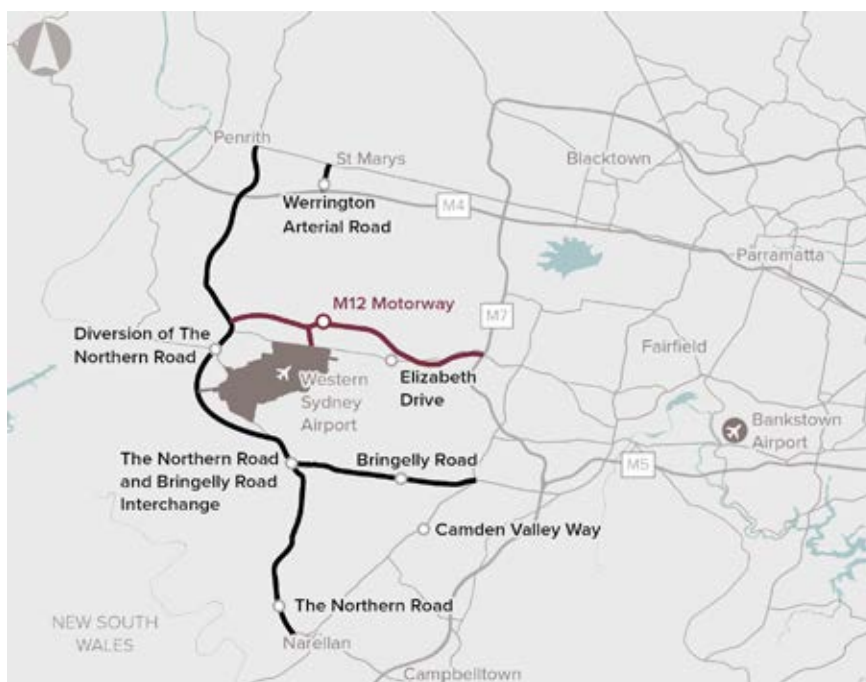
Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

From 2011 to 2031, the population of Western Sydney will increase by around 900,000 people, with around half of all Sydney Basin residents expected to be living in the region within 25 years.

Preliminary analysis indicates that initial demand at Western Sydney Airport will be about 3 million passengers per year from commencement of airport operations in the mid-2020s.

Future development in Western Sydney, and at the Western Sydney Airport, is expected to generate additional travel demand that would eventually exceed the capacity of the existing road network.

Proposed initiative

The initiative includes a suite of road projects including:

- upgrading The Northern Road to a minimum of four lanes
- building a new M12 Motorway to provide access to the Western Sydney Airport between the M7 Motorway and The Northern Road
- upgrading Bringelly Road to a minimum of four lanes
- building the Werrington Arterial Road linking the M4 Motorway and Great Western Highway
- a package of local road upgrades.

Upgrades to The Northern Road and Bringelly Road were formerly on the *Infrastructure Priority List* as separate Priority Projects. They have since been removed and listed in **Appendix A** as they are under construction, with initial stages complete.

Separate initiatives on the *Infrastructure Priority List* address the servicing of Western Sydney and Western Sydney Airport with rail and other public transport, as well as the preservation of transport and pipeline corridors.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

The NSW Government is developing a business case for the M12 Motorway component of the Western Sydney Infrastructure Plan, with the M12 Environmental Impact Statement displayed in October 2019. All other components of the initiative are under delivery, with initial stages complete.

Priority Initiatives

Freight rail access to Port Kembla

Location
Illawarra/Southern
Highlands region, NSW



Geography
Smaller cities and regional centres

Category
National Connectivity

Problem timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2016



Problem

The 2015 *Australian Infrastructure Audit* identified that Port Kembla would face capacity constraints in the absence of any additional rail network improvements. Port Kembla is a significant economic asset. Maintaining efficient movement of freight to and from the port is a nationally significant challenge.

Additionally, there is a need to improve the efficiency and reliability of freight rail movements between the Illawarra and Greater Sydney, particularly between Port Kembla and the intermodal terminals in Western Sydney.

Around 60% of freight travelling to and from Port Kembla is transported by rail on either the Illawarra Line or the Moss Vale–Unanderra Line. Operations on the Illawarra Line are constrained by passenger rail services in the region, resulting in disruptions to freight scheduling. Freight services are often held for up to 11 hours as passenger services are given priority.

In the long term, Port Kembla's Outer Harbour development is expected to attract overflow container traffic from Port Botany. The NSW Government has stipulated that Port Kembla should generally not accept more than 120,000 Twenty-foot Equivalent Units per annum by road. This is around 10% of planned Outer Harbour container capacity. This is likely to lead to a significant increase in demand for rail services.

Inadequate freight rail capacity may lead to a substantial increase in road freight, further constraining the Illawarra region's road network.

Proposed initiative

Improve freight rail access to Port Kembla. This could be through enhancements to the Illawarra and/or Moss Vale–Unanderra lines, or through future development of an alternative rail alignment to the port.

A project to extend the Mount Murray crossing loop along the Moss Vale–Unanderra Line is currently underway. The extension will support trains up to 1 km long, improving accessibility for these trains to travel between Moss Vale and Port Kembla.

Next steps

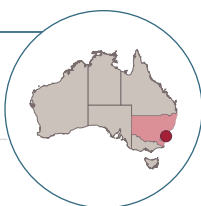
Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Moorebank Intermodal Terminal road connections upgrade

Location

Western Sydney, NSW



Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

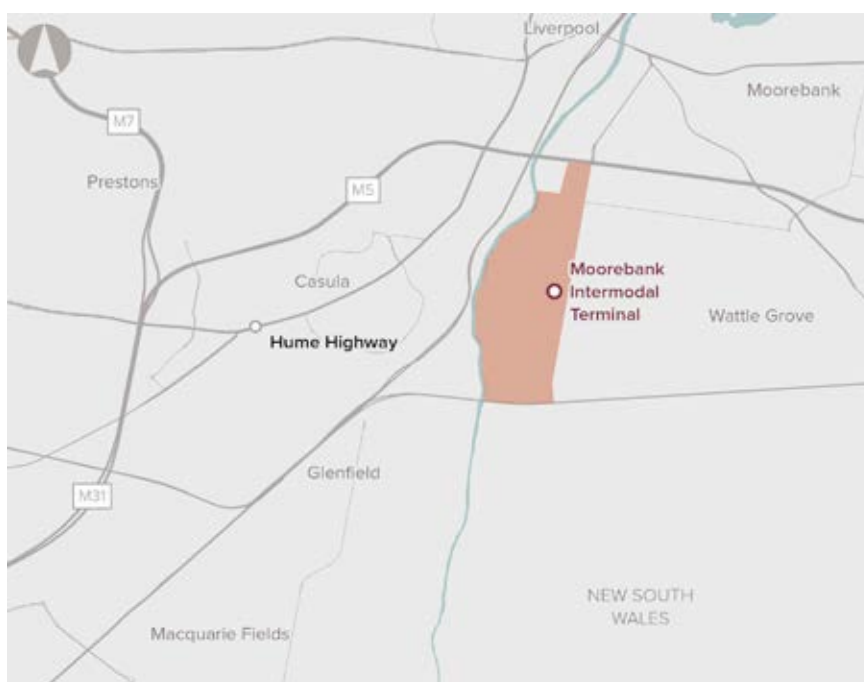
Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

The 2015 *Australian Infrastructure Audit* identified the M5 corridor – the key corridor linking the Moorebank Intermodal Terminal (MIT) and Port Botany – as highly economically significant. The delay cost per kilometre in the corridor is projected to be the 10th highest of any corridor in New South Wales in 2031, even after accounting for the duplication of the M5 East as part of WestConnex.

The development of the MIT presents an opportunity to moderate growth in freight traffic on the M5 corridor. However, it will generate additional freight traffic in the vicinity of the terminal. The current road network provides a single point of access to the freight precinct. This constraint could create significant 'last mile' congestion, affecting the efficiency of freight movements, and ultimately the effectiveness of the MIT itself.

The broader road network surrounding the MIT is currently highly congested, particularly sections of the M5, which has a poor safety record due to significant 'weaving' conflicts (where vehicles are weaving in and out of lanes to join or depart the motorway).

Proposed initiative

The initiative proposes a package of inter-related road infrastructure improvements to increase network efficiency and improve access to the MIT. The major components include:

- upgrades to the M5 interchanges at the Hume Highway and Moorebank Avenue to improve safety and capacity
- duplication and extension of Cambridge Avenue from Moorebank Avenue westward to the Hume Motorway (M31) to improve access and capacity.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

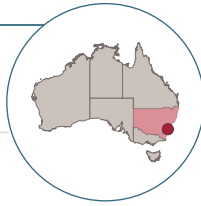
Priority Initiatives

Great Western Highway improvements

Katoomba to Lithgow

Location

Central West, NSW



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2020



Problem

The Great Western Highway connects the agricultural and mining sectors in the Central West and Orana regions with Greater Sydney and the port network in New South Wales. It forms part of the National Land Transport Network.

In 2011, 8.3 million tonnes of freight was moved to and from, and through the Central West and Orana by road.

The Great Western Highway currently passes through the centre of towns such as Blackheath and Mount Victoria. This leads to congestion, safety risks from heavy vehicles mixing with residential traffic, amenity impacts for residents, and additional travel costs for freight. The current alignment also limits the extent to which High Productivity Vehicles can be used along the route.

Proposed initiative

The initiative is to complete the duplication of the Great Western Highway. Over 100 km of the highway has been duplicated so far, leaving a 33 km gap between Katoomba and Lithgow.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Princes Highway safety and capacity

Nowra, NSW to Victorian border

Location

South Coast, NSW

Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2020



Problem

The Princes Highway is the primary north–south connection between Greater Sydney, the City of Wollongong, the Illawarra–Shoalhaven region and the south coast of New South Wales. It carries a mix of freight and passenger traffic for local, long-distance and tourism trips.

Between Nowra and the Victorian Border, the highway experiences congestion, has a poor safety record and has freight productivity constraints. This is caused by the challenging topography, mass-limited bridges, and the two-lane, undivided road design, which offers limited overtaking opportunities.

An average of five fatalities and 40 serious injuries per year were recorded along the corridor over the last five years. Some sections are experiencing crash rates more than double the New South Wales median fatal and serious injury crash rate.

Proposed initiative

The Australian Government released the Princes Highway Corridor Strategy in November 2019, which considers the entire length of the highway across New South Wales, Victoria and South Australia. The strategy identified locations between Nowra and the Victorian Border as priorities for bridge upgrades and additional passing opportunities.

The initiative is for a program of works to make the corridor safer, and more efficient and accessible. The Australian Government and NSW Government have committed funding towards the following components:

- bypass of Moruya
- duplication between Jervis Bay Road and Sussex Inlet Road
- a bypass of Milton and Ulladulla.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Southern Sydney Freight Line upgrade

Location
Sydney, NSW

Geography
Fast-growing cities

Category
National Connectivity

Problem timeframe
Longer term (10–15 years)

Proponent
Australian Rail Track Corporation

Date added to the IPL
February 2016



Problem

The forecast growth in interstate, intrastate and import/export freight, particularly with the development of the Moorebank Intermodal Terminal (MIT), will place significant pressure on Sydney's rail freight network and the Southern Sydney Freight Line (SSFL) in particular.

The SSFL forms a key connection between the proposed MIT and other logistics hubs. Without additional capacity when the MIT is fully operational, the SSFL could become increasingly unreliable and face capacity constraints. The potential future development of the Western Sydney Freight Line, which is proposed to connect Sydney's rail freight network at the SSFL, would further exacerbate capacity constraints on the SSFL.

In 2018–19, approximately 18% of containerised freight handled at Port Botany was transported by rail, with the remainder transported by road. On average, Port Botany produces around 3,900 truck movements daily, contributing to significant congestion on key arterial roads including the M4 and M5, both of which were identified in the 2019 *Australian Infrastructure Audit* as highly congested corridors.

In order to facilitate a shift from road to rail for containerised freight movement in Sydney (consistent with both NSW Government policies and findings from the Audit), further capacity and higher levels of service are required on Sydney's freight rail network. Investment in the rail freight network will be crucial to ensuring the competitiveness of landside freight infrastructure such as the MIT.

Proposed initiative

The SSFL is a 36 km single line from Macarthur to Sefton. The proposed initiative involves track duplications and additional passing loops on the line. The initiative aims to support the movement of freight by rail through the city, particularly between Port Botany and the MIT and a future Western Sydney Freight Line. It forms part of a broader strategy designed to sustain and drive growth in rail mode share.

The Cabramatta passing loop proposed for the SSFL is being delivered in conjunction with the Port Botany freight rail duplication, which is currently under assessment by Infrastructure Australia.

The proponent for this initiative was previously the NSW Government. The initiative was updated in February 2020 to list the Australian Rail Track Corporation as the proponent.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

New England Highway upgrade

Location

Belford to
Muswellbrook, NSW



Geography

Small towns, rural communities
and remote areas

Category

National Connectivity

Problem timeframe

Medium term (5–10 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

The New England Highway is part of the National Land Transport Network and is a major freight and passenger route, forming part of the inland Sydney–Brisbane corridor. The corridor services a high proportion of heavy freight vehicles and is the main road freight route between the Hunter Valley coalfields and the Port of Newcastle.

Under the existing alignment, the New England Highway passes through the centre of towns such as Singleton and Muswellbrook. Traffic congestion, reduced land freight transport productivity, safety issues (due to the mix of heavy vehicles and residential traffic in the town centres) and amenity issues are the principal problems. The current alignment also limits the extent to which High Productivity Vehicles can be mobilised along the route.

Proposed initiative

The initiative includes a number of potential projects to upgrade the New England Highway, including:

- bypasses of the towns of Singleton and Muswellbrook
- duplication between Belford and Singleton
- duplication between Singleton and Muswellbrook
- realignment at Rocky Cut (north of Scone).

The initiative is designed to aid the efficient movement of freight from regional exporters to the Port of Newcastle, which is essential to supporting economic growth and productivity in New South Wales.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Picton Road safety and capacity

Location

Southern Sydney, NSW



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

Medium term (5–10 years)

Proponent

NSW Government

Date added to the IPL

February 2019



Problem

The volume of passenger and heavy vehicles on Picton Road, combined with difficult topography, is causing significant delays and safety issues on the route. This is resulting in longer travel times and high crash rates.

Picton Road connects the M1 Princes Motorway near Mount Ousley in the east, with the M31 Hume Motorway at Wilton and Picton in the west. It is a key freight connection between Port Kembla and the Illawarra with Western Sydney, Canberra and Melbourne via the Hume Motorway.

The road carries over 20,000 vehicles a day, of which approximately 22% are heavy vehicles. Traffic volumes are expected to grow along the corridor with population growth, development in Western Sydney and growth at Port Kembla.

In the five years up to September 2018, there were six fatal crashes and 25 serious injury crashes (which resulted in eight fatalities and 33 serious injuries). This is more than double the New South Wales average for the number of fatal and serious crashes per kilometre for similar type roads.

With land use changes planned at both Wilton and Greater Macarthur Growth Areas expected to deliver an additional 60,000 homes nearby by 2040, combined with the growing freight task, traffic volumes on Picton Road will continue to grow which may further impact on travel times and crash rates.

Proposed initiative

Options to address capacity and safety issues on Picton Road include:

- minor road upgrades such as providing central barriers
- upgrading intersections or adding signals
- additional capacity and overtaking opportunities.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Western Sydney Airport public transport connections

Location

Western Sydney, NSW

Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

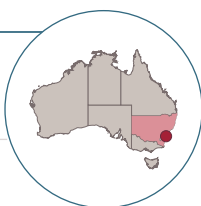
Medium term (5–10 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

As identified in the 2015 *Australian Infrastructure Audit*, meeting the Sydney region's future air passenger demand will require expansion of airport capacity beyond Sydney Airport. Much of this demand is expected to be absorbed by the Western Sydney Airport at Badgerys Creek.

Western Sydney Airport will require reliable public transport connectivity, appropriate to the level of demand, to service arriving and departing air passengers, as well as employees and airport, aviation, freight and related businesses. Demand for this connection will increase as the airport commences passenger operations, estimated to be from 2026. Fast and reliable bus connections using dedicated infrastructure, integrated with the broader Sydney rail and public transport network, can help minimise road congestion in Sydney's Western and South West Growth Areas during the construction of the airport, and following the commencement of operations.

Proposed initiative

The initiative would provide infrastructure to support bus connections between Western Sydney Airport and the nearby centres of Liverpool and Penrith, connecting the airport to the broader Sydney rail and public transport network to the east and north-west. Where demand warrants it, direct rail access to Western Sydney Airport could also be considered, such as the north–south rail connection committed to as part of the Western Sydney City Deal.

This initiative should be viewed as a potential complementary investment to preserving a rail corridor, which is separately listed on the *Infrastructure Priority List*.

The Australian Government and NSW Government have jointly released a scoping study that identifies a longer-term rail network for Western Sydney, with services that would also provide connection to the Western Sydney Airport. This could include the proposed South West Rail Link extension.

Provision of high-quality public transport services from the opening of the airport will provide users with public transport travel choices and minimise reliance on cars. These types of services also provide an opportunity to guide land use planning on key corridors

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Northern Sydney Freight Corridor Stage 2

Additional track West Ryde to Rhodes and Thornleigh to Hornsby

Location

Sydney, NSW

Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

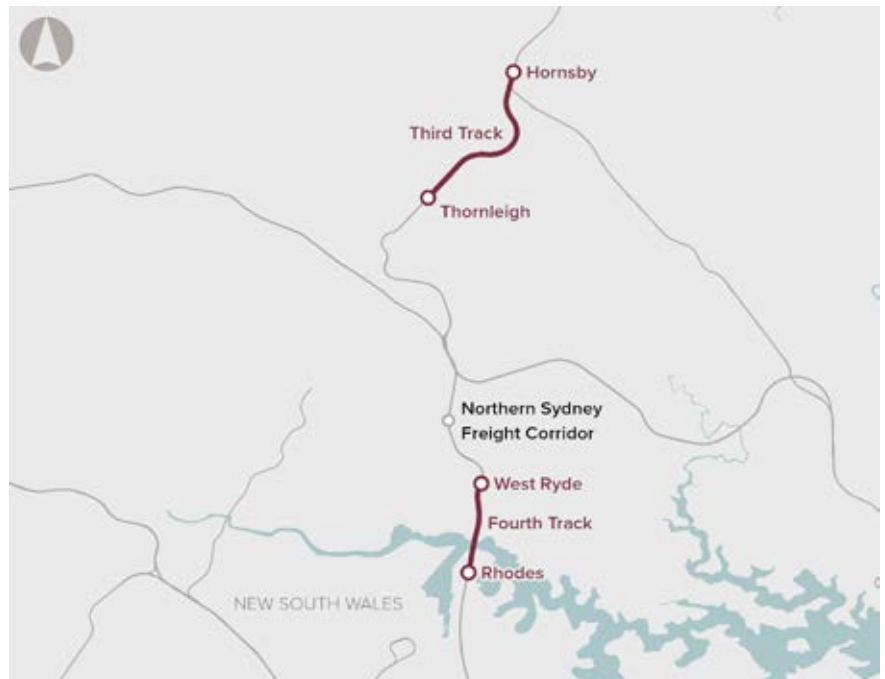
Medium term (5–10 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

Demand for rail freight in the Newcastle to Sydney corridor, using the Main North Rail Line, is projected to continue growing over the coming decades.

Stage 1 improvements to the Northern Sydney Freight Corridor have increased the corridor's capacity by 50%, from 29 to 44 freight trains each day. This will accommodate growth in demand for rail freight up until 2028. In the longer term, the Sydney metropolitan rail network will again become a point of bottleneck for the rail freight network, mainly because of priority given to passenger rail services.

Proposed initiative

A second package of infrastructure improvements in the corridor would build on the earlier package to deliver a significant increase to core period (5 am to 10 pm) rail freight capacity, along with improved average transit times for freight services. This would also improve freight and passenger service reliability along the Main North Rail Line between Strathfield in Sydney and Broadmeadow in Newcastle.

The candidate projects for the second package include Rhodes to West Ryde quadruplication and additional track capacity between Thornleigh and Hornsby (known as the Thornleigh to Hornsby Third Track project).

The NSW Government has completed a preliminary design for Rhodes to West Ryde quadruplication and Thornleigh to Hornsby Third Track. The scoping and timing of this work is currently being developed in conjunction with a response to the *Sydney rail network capacity* initiative, which is separately listed on the *Infrastructure Priority List*.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Newcastle–Sydney and Wollongong–Sydney rail line upgrades

Location

Newcastle–Sydney–
Wollongong, NSW



Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

Longer term (10–15 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

Slow regional passenger rail speeds along the Newcastle–Sydney and Wollongong–Sydney rail lines result in lengthy travel times that are generally longer than car travel. Express services take 1 hour 28 minutes between Wollongong and Sydney, and 2 hours 37 minutes between Newcastle and Sydney.

This service level reduces accessibility to the Sydney employment market from the Wollongong and Newcastle regions, which have above average unemployment. It also limits opportunities to develop greater economic synergies between the three cities, which would benefit productivity.

Uncompetitive rail services also add to road congestion on key roads linking the three cities.

The current level of rail capacity and quality of service reflect a range of operational and infrastructure constraints, including winding alignments across the Hawkesbury River (Newcastle–Sydney) and the Illawarra Escarpment (Wollongong–Sydney).

Proposed initiative

The proposed initiative includes a range of options for improvements to the lines:

- an initial set of operational and fleet improvements
- targeted fixed infrastructure improvements (for example, new deviations to eliminate curvatures and flatten grades)
- a new rail crossing of the Hawkesbury River and Illawarra Escarpment
- station improvements and capacity enhancing track amplifications.

The Newcastle–Sydney and Wollongong–Sydney rail corridors were identified in the Australian Government's Faster Rail Connecting Capital Cities and Orbital Regional Centres prospectus, which was announced as part of the 2017–18 Budget. Subsequently, funding has been committed by the Australian Government and NSW Government to develop strategic business cases for faster rail between Sydney and Newcastle, and between Sydney and Wollongong.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Sydney cruise terminal capacity

Location
Sydney, NSW

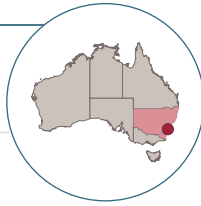
Geography
Fast-growing cities

Category
Opportunity for Growth

Problem timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2019



Problem

There is insufficient berthing capacity for large cruise ships at Sydney's Overseas Passenger Terminal, particularly during the peak cruising season around the summer period. While there is capacity at the White Bay Terminal, it does not cater for the industry's shift towards larger ships, which cannot fit under the Sydney Harbour Bridge.

With 1.3 million Australian passengers in 2016, the number of Australian ocean cruise passengers has more than quadrupled across Australia since 2008, and almost doubled in the past five years. The amount of tourism expenditure from cruise ship activity in Australia was \$2.7 billion in 2016–17, of which approximately 58% of the economic impact was in New South Wales and primarily in Sydney.

A lack of capacity at Sydney's cruise ship terminals will impact on the growth of the Australian tourism industry, with some cruises citing the Sydney capacity constraint as the reason for not visiting Australia in the 2018–19 season.

Proposed initiative

Cruise terminal capacity constraints could be addressed through different initiatives:

- maximising the capacity of existing terminals by optimising scheduling, operations and pricing
- modifying existing non-passenger terminals to allow cruise ship usage
- developing new cruise terminals.

In line with the commitment outlined in the New South Wales Government's *Cruise Development Plan*, a Strategic Business Case was completed. It assessed the high-level viability of potential cruise terminal sites. In September 2019, the NSW Government started developing a detailed business case for the project.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

South Creek integrated land use and water cycle management

Location
Sydney, NSW

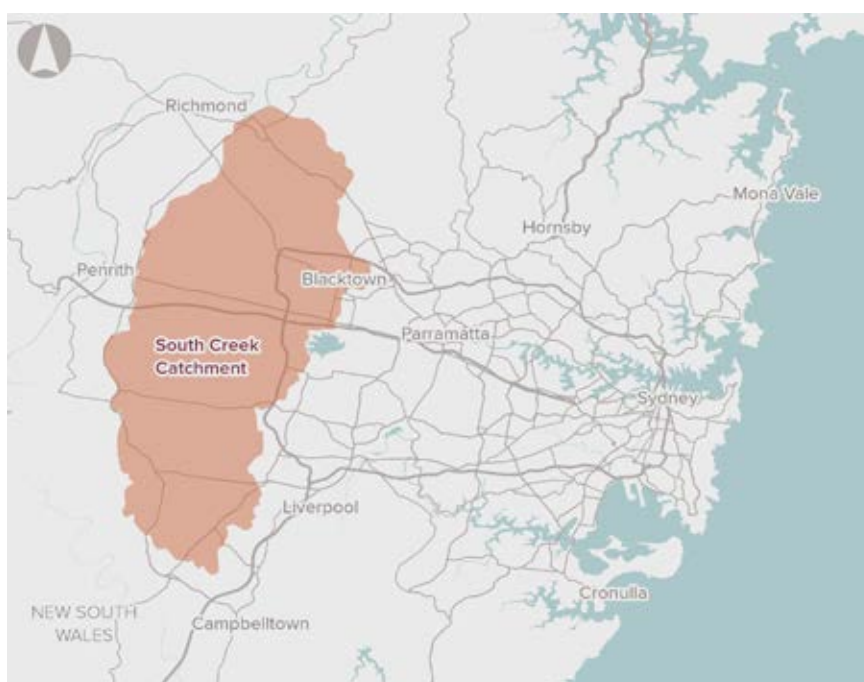
Geography
Fast-growing cities

Category
Efficient Markets

Opportunity timeframe
Near term (0–5 years)

Proponent
NSW Government

Date added to the IPL
February 2020



Opportunity

The South Creek catchment is the hottest, driest and least-treed area of Sydney.

The population of the Western Parkland City, which is largely located in the catchment, is expected to increase to 1.5 million people by 2056.

The increase in population and related development could potentially create an urban heat island and degrade the local waterways and environment.

A significant investment is required to replace and augment water and wastewater infrastructure in this area to service future developments and avoid overwhelming legacy infrastructure.

There is an opportunity to integrate water infrastructure into land use and water cycle planning, which would provide significant economic benefit compared with traditional water cycle management approaches.

Proposed initiative

The initiative is to develop the South Creek Catchment in a way that maximises the opportunity for integrated land use and water cycle planning, to enhance the liveability and environmental quality of the area.

This includes the use of catalytic blue infrastructure (waterways and the facilities that support them) and green infrastructure (assets that incorporate natural vegetation), advanced water cycle management and investment in new or augmented water infrastructure.

The NSW Government is currently investigating different water recycling schemes and applications for both non-potable (for example, irrigation and industrial) and indirect-potable (for example, replenishing groundwater systems) reuse as part of the initiative.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Hawkesbury-Nepean Valley flood management

Location

Hawkesbury-Nepean Valley, NSW



Geography

Fast-growing cities

Category

Resilience

Problem timeframe

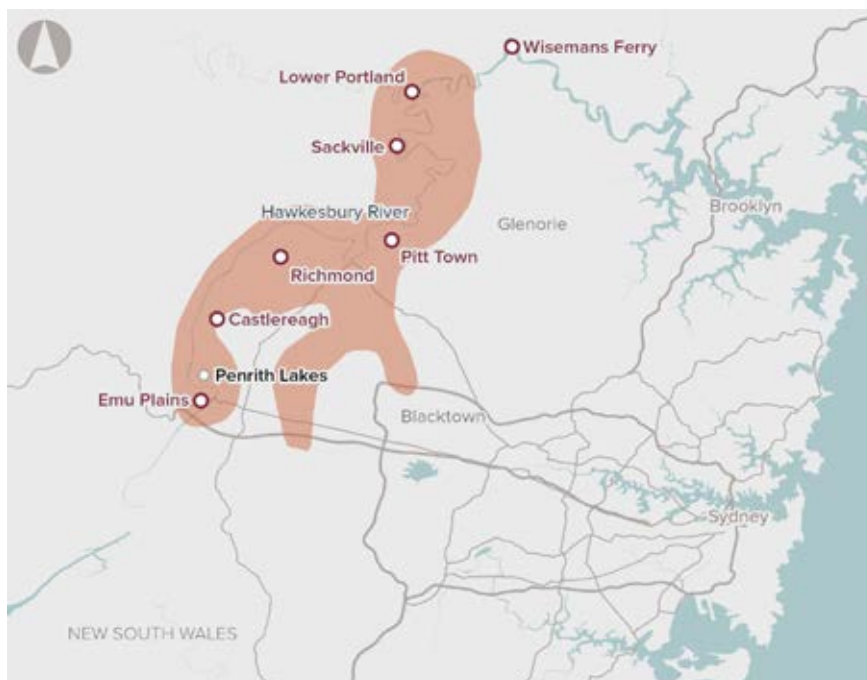
Near term (0–5 years)

Proponent

NSW Government

Date added to the IPL

February 2016



Problem

There is increasing flood risk in the highly populated and major growth region of the Hawkesbury-Nepean Valley. Over the long term, the annual average cost of flood damage in the Hawkesbury-Nepean Valley is expected to be in the order of \$70 million.

Hawkesbury-Nepean Valley flood management represents a long-term infrastructure resilience challenge. Increasingly frequent extreme weather events, combined with the impacts of population growth in new and more densely populated areas, will likely require an increase in the level of resilience of some infrastructure networks. Infrastructure should be able to continue operating through minor disruptions, and recover quickly from major disruptions.

The largest flood on record in the Hawkesbury-Nepean Valley occurred in 1867, when the river level at Windsor reached 19.2 m above mean sea level, compared to the normal river level, which is less than 0.5 m above mean sea level. If the 1867 flood levels were to occur today, it is estimated that the total tangible damages could exceed \$3 billion. If a more extreme event were to occur, the total damages could approach \$8 billion (for a 1 in 1,000 year event).

Proposed initiative

The Hawkesbury-Nepean Valley Integrated Flood Management Strategy presents a series of initiatives and investments to reduce flood risk in the valley. Elements of the strategy being investigated and implemented include:

- flood mitigation infrastructure, including raising Warragamba Dam
- road infrastructure upgrades to improve flood evacuation capacity
- a community engagement strategy
- improved governance and accountability to reduce flood risk through the integration of emergency, road and land use planning.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Cycling access to Melbourne CBD

Location
Melbourne, Vic

Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Royal Automobile Club of Victoria

Date added to the IPL
February 2020



Problem

Inner Melbourne has the highest bicycle mode share in Victoria. However, there is substantial latent demand for cycling, with people choosing not to cycle because of safety concerns due to routes that are not connected and/or have poor separation from traffic.

Provision of dedicated cycling infrastructure for key cycling corridors in Inner Melbourne would encourage more people to cycle, helping to alleviate road network and public transport congestion and reduce the risk of conflict between road users.

An increasing number of people are choosing to use public transport rather than drive. Cycling can also help reduce congestion on the road network. However, recent research has revealed that most Victorians own and ride bicycles, but they don't cycle for transport, or into the Melbourne CBD for employment, because the bicycle network is not currently meeting community needs and expectations of a safer, lower-stress and better-connected network.

Proposed initiative

The initiative involves the provision of dedicated cycling infrastructure for key routes in Inner Melbourne to reduce congestion and improve safety and health outcomes.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Melbourne level crossings removal

Location
Melbourne, Vic

Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Victorian Government

Date added to the IPL
February 2016





Problem

Melbourne’s transport network includes approximately 180 road/rail level crossings. Road traffic at these level crossings is managed by boom gates that give priority to trains. Level crossings interrupt the flow of road traffic and contribute to congestion and delays on Melbourne’s roads. The 2019 *Australian Infrastructure Audit* projected that the cost of road congestion in the Melbourne/Geelong area is expected to reach approximately \$10.4 billion by 2031.

As Melbourne’s train network is modernised, longer and more frequent trains are planned to be introduced to the network to cater for increased demand. Longer and more frequent trains at level crossings will increase delays for road users.

Level crossings also introduce a ‘conflict point’ between rail and road traffic, which creates safety issues. Incidents at level crossings, including collisions and signal faults, impact the efficiency and reliability of Melbourne’s transport network.

Proposed initiative

This initiative proposes to remove priority level crossings in Melbourne. The objective of the initiative is to deliver a more reliable, convenient, productive and safer transport system in Melbourne.

Next steps

The Victorian Government, through the Level Crossing Removal Authority, has committed to the removal of 75 level crossings across metropolitan Melbourne by 2025. In 2019, 30 level crossings had been removed, with planning and early consultation underway for the delivery of the remainder.

Priority Initiatives

Frankston public transport connectivity

Location
Melbourne, Vic

Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Committee for Greater Frankston

Date added to the IPL
February 2020



Problem

Frankston is a major metropolitan activity centre in Melbourne's south-east, some 50 km from the city centre. It has a population of over 140,000 people.

To the east of Frankston, the Victorian Government is planning a major redevelopment of the Frankston Hospital. In addition, the campuses of both the Monash University and Chisholm TAFE are being redeveloped.

Buses serve the Frankston area, but these tend to have circuitous routes and poor integration with rail services. The Frankston Line provides rail access from Melbourne to the area and further south to the Mornington Peninsula. However, the line is not electrified to the south of Frankston Station.

Proposed initiative

The initiative is for public transport connectivity improvements to, and through, Frankston. These could include:

- optimising the existing bus network
- increasing bus service frequency and coverage
- upgrades to rail services and infrastructure.

These improvements should support major redevelopments to the east of Frankston.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Melbourne Airport to the CBD public transport capacity

Location
Melbourne, Vic

Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Medium term (5–10 years)

Proponent
Victorian Government

Date added to the IPL
February 2016



Problem

The 2019 *Australian Infrastructure Audit* identified the corridor between the Melbourne CBD and Melbourne Airport as one of the most heavily congested in Melbourne. The Tullamarine Freeway was already operating at, or close to, capacity in 2016. Congestion affects traffic in both directions, particularly close to the airport terminal. Analysis completed as part of the Audit estimated that travel times to the airport during peak periods will increase substantially between 2016 and 2031 (even after the current project to widen the freeway is completed).

From 2016 to 2031, travel time by car in the morning peak from the airport to the city is projected to increase by eight minutes, from 52 minutes to 60 minutes, while travel times by car in the evening peak from the city to the airport are projected to increase by 10 minutes, from 42 minutes to 52 minutes.

Melbourne's population growth, combined with expected growth in passenger numbers at Melbourne Airport, will be key drivers of future congestion on the Melbourne CBD to Melbourne Airport corridor.

Proposed initiative

The Victorian Government, together with the Australian Government, has commenced planning for a rail link between Melbourne Airport and Melbourne's CBD through the Melbourne Airport Rail (MAR) Study. A Strategic Appraisal was completed in mid-2018, which selected the Sunshine Route as the preferred route alignment for the MAR.

The MAR Study will coordinate planning with the Melbourne Airport Land Access Strategy, which is investigating options to improve and strengthen road access and capacity, and to increase existing bus access and services to the airport.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Melton Rail Line upgrade

Location

Western Melbourne, Vic



Geography

Fast-growing cities

Category

Urban Congestion

Problem timeframe

Medium term (5–10 years)

Proponent

Victorian Government

Date added to the IPL

February 2016



Problem

Melbourne's long-term growth strategy identifies Melton to Bacchus Marsh as a key growth area. The 2015 *Australian Infrastructure Audit* estimated that population growth in the Melton–Bacchus Marsh region will grow at an average annual rate of 3.9% per year between 2011 and 2031. This is the second-highest growth rate in Greater Melbourne.

The Audit identified the Melton–Bacchus Marsh region as an area in which high levels of additional transport activity is expected out to 2031. Audit data shows that demand on the Melton Line is projected to grow to around three times current capacity by 2031.

Currently, the line between Melton Station and Sunshine Station is operated by V/Line and is not part of the metropolitan network. This section of the line is not electrified, which limits higher-capacity trains being introduced on the line. The Melton Line currently lacks the capacity to service future population growth.

Proposed initiative

The proposed initiative would involve upgrading the Melton Line to expand capacity to service additional demand associated with population growth.

Options that may be considered as part of the upgrade include, but are not limited to:

- preservation of corridors for extensions and/or duplication of the Melton Line
- duplication of the Melton Line
- electrification of the Melton Line
- capacity upgrades where the Melton Line meets the metropolitan network at Sunshine Station (part of the Sunbury Line).

This initiative is complementary to the *Melbourne rail network capacity* High Priority Initiative and the Ballarat Line Upgrade project, which are also included on the *Infrastructure Priority List*.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Public transport access to Fishermans Bend

Location
Melbourne, Vic

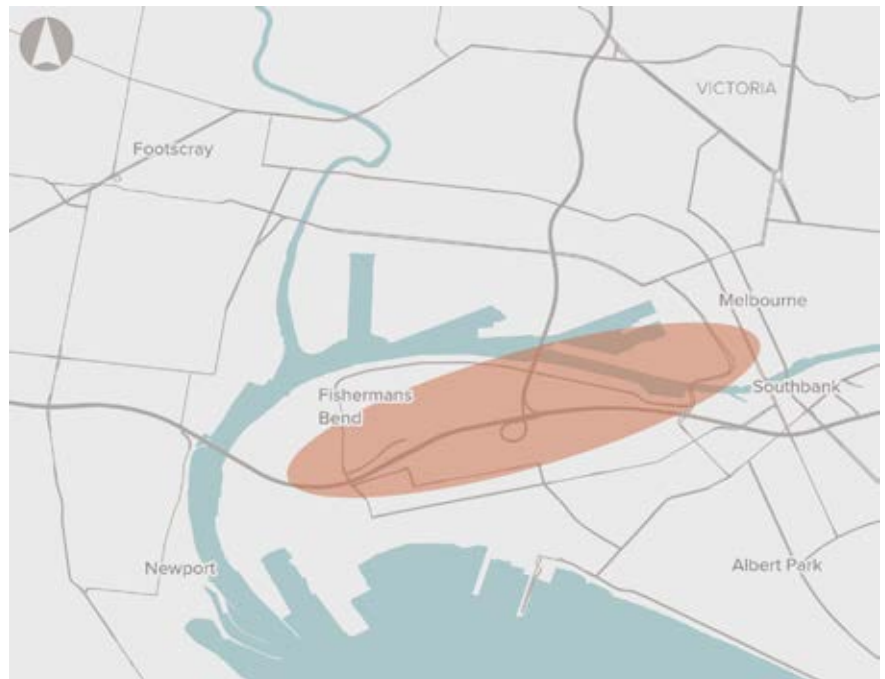
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Medium term (5–10 years)

Proponent
Victorian Government

Date added to the IPL
March 2018



Problem

Fishermans Bend, located south-west of Melbourne's CBD, is Australia's largest urban renewal project, covering an area of approximately 480 hectares. The precinct is planned to accommodate up to 80,000 residents and 80,000 jobs by 2050 according to the latest estimates.

This level of development would increase transport demand in and out of the precinct well beyond the capacity of current transport infrastructure. Access to Fishermans Bend is currently heavily dependent on car travel, reflecting the area's legacy of industrial land uses. Current public transport access to the area is limited to low-frequency bus services.

In the absence of additional public transport capacity, the transport network serving Fishermans Bend would become increasingly congested, limiting the site's potential as a location for residential and employment development. Increasing public transport capacity to the area would address a significant emerging capacity shortfall, and enable full development of the site, with nationally significant benefits to productivity.

Proposed initiative

This initiative proposes a high-capacity rapid transport link connecting Fishermans Bend with the Melbourne CBD. This could be an extension of Melbourne's tram/light rail network, or an alternative solution.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Cranbourne Line capacity

Location
Melbourne, Vic

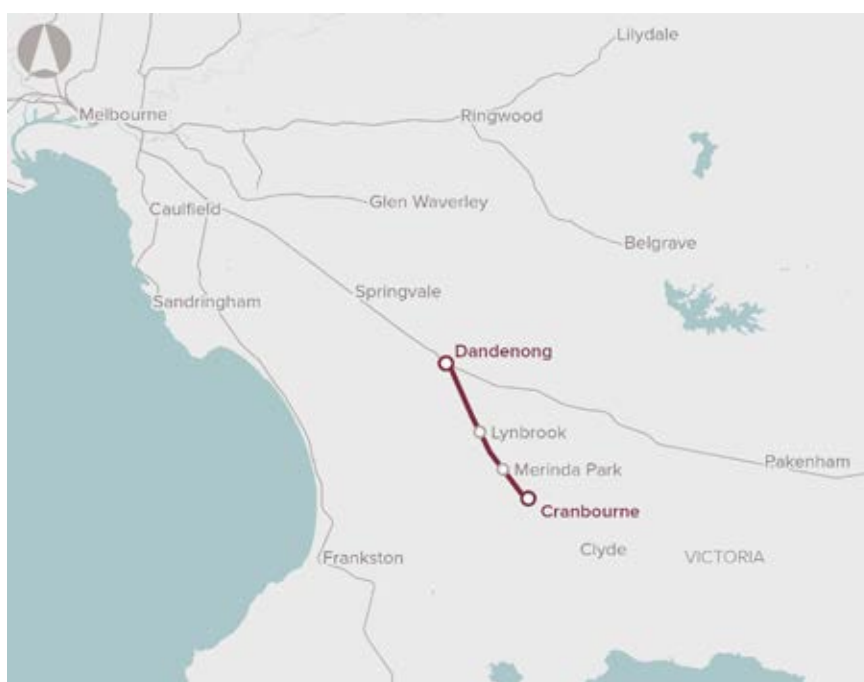
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Medium term (5–10 years)

Proponent
Victorian Government

Date added to the IPL
February 2019



Problem

Increasing development of residential properties, employment areas and town centres in Cranbourne and Clyde is increasing demand on the Dandenong Rail Corridor, which includes the Cranbourne and Pakenham lines.

The population in the Local Government Areas covering Dandenong, Cranbourne and Pakenham are expected to increase from 585,000 people in 2015 to 793,000 by 2031, which will place pressure on the existing rail services.

The Cranbourne Line is principally limited to a single track south of Dandenong, which impacts on the ability to:

- maintain service timetables, with current on-time performance regularly below 90%
- run more services, with the line currently limited to four services per hour during the AM peak
- realise the benefits specified by other major rail infrastructure investments.

Overcrowding, reduced punctuality and reduced reliability on the Cranbourne Line is estimated to cost \$154 million per year by 2036.

Proposed initiative

Duplication of 8 km of the Cranbourne Line between Dandenong and Cranbourne provides an opportunity to increase the number of services, reduce overcrowding, and improve punctuality and service reliability.

The line may be extended to Clyde in the future, although this is not part of the current initiative.

This initiative is complementary to the High Priority Initiative for Melbourne rail network capacity, which is also included on the *Infrastructure Priority List*.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Hurstbridge Line capacity

Location
Melbourne, Vic

Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Medium term (5–10 years)

Proponent
Victorian Government

Date added to the IPL
February 2019



Problem

There is a growing need to provide more public transport in the north-eastern suburbs of Melbourne to accommodate rapid patronage growth on the Hurstbridge and Mernda rail lines, which connect at Clifton Hill.

The City of Whittlesea – including the suburbs of Thomastown, Mernda and Wollert – is one of the fastest growing regions in Australia, with its population projected to grow by 4.3% per year between 2011 and 2021. Travel demand in the Whittlesea corridor will grow strongly, with the annual patronage on the Mernda Line expected to increase by 9.1% per year between 2018 and 2021. This could lead to overcrowding and poor reliability on the Mernda Line.

As the timetables are interconnected, capacity of the Mernda Line is governed by constraints on the Hurstbridge Line, which includes single-line sections of track. In addition to track upgrades, the Hurstbridge Line also requires a more regular pattern of services, and improvements of connections to key precincts and employment clusters.

Proposed initiative

The Hurstbridge Line was upgraded in 2018 to duplicate track, construct a new station and remove level crossings.

The capacity of the Hurstbridge Line and Mernda Line could be further improved by duplicating other single-track sections of the Hurstbridge Line, upgrading stations, and potentially enhancing other public transport modes along the corridor.

This initiative is complementary to the High Priority Initiative for *Melbourne rail network capacity*, which is also included on the *Infrastructure Priority List*.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Melbourne outer northern suburbs to CBD capacity upgrade

Location

Melbourne, Vic

Geography

Fast-growing cities

Category

Urban Congestion

Problem timeframe

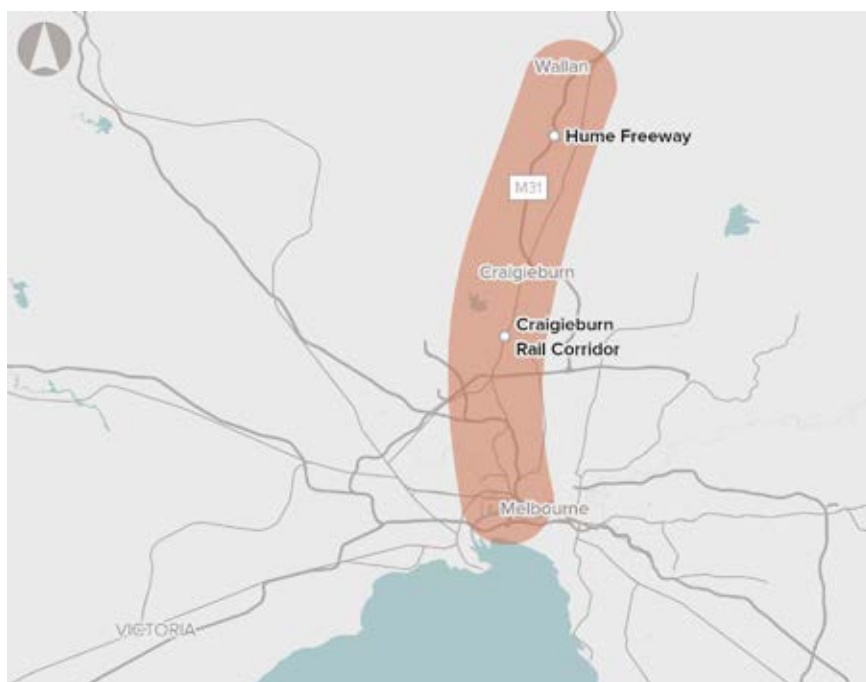
Longer term (10–15 years)

Proponent

Infrastructure Australia identified initiative

Date added to the IPL

February 2016



Problem

The 2015 *Australian Infrastructure Audit* noted that by 2031 the Hume Freeway would become the most congested corridor in Victoria, with a total delay cost of around \$172 million per year. The Audit also projects that demand for rail transit in the corridor, on the Craigieburn Line, will exceed capacity by a factor of four by 2031. In the absence of transport capacity improvements, the Audit indicates that daily vehicle movements on the Hume Freeway would grow from 43,100 in 2011 to 107,400 by 2031, making the rail line the most crowded in Melbourne.

Traffic demand growth along the corridor is expected to be driven by population and employment growth in the area. Victorian Government projections indicate that population in the corridor is expected to almost double between 2015 and 2031, while the Northern Growth Corridor Plan indicates the corridor has the capacity to accommodate between 83,000 and 105,000 new jobs.

Proposed initiative

Develop options to address demand for transport services in the corridor.

Next steps

Proponent to be identified.

Priority Initiatives

Melbourne Airport third runway

Location

Melbourne Airport, Vic

Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

Melbourne Airport

Date added to the IPL

February 2016



Problem

Melbourne Airport is Australia's second busiest airport, handling almost 35 million passengers and 237,000 aircraft movements in 2016–17. The airport's contribution to Gross State Product is forecast to increase from \$1.47 billion in 2013 to \$3.21 billion by 2033 (2012 prices), facilitating 23,000 jobs.

Demand at the airport is increasing and, by 2033, the airport anticipates facilitating 57 million passengers and 348,000 aircraft movements.

With its existing two-runway system, Melbourne Airport is expected to reach capacity during peak periods between 2020 and 2022.

This capacity constraint will inhibit the efficient functioning of the airport, leading to significant delays for passengers and freight, increasing fuel costs for airlines, increasing environmental emissions and consequential disruption to the Australian aviation network.

Proposed initiative

The initiative proposes a third runway to meet increased demand at Melbourne Airport. The three-runway system could facilitate at least 400,000 total aircraft movements at the airport per year, providing sufficient capacity to accommodate projected aircraft movements until around 2040.

In the longer term, Melbourne Airport has been planned and protected to operate a four-runway system.

Next steps

Melbourne Airport is currently developing a Major Development Plan for the third runway project for consideration by the Australian Government.

Priority Initiatives

Melbourne container terminal capacity and land transport access

Location

Melbourne, Vic

Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

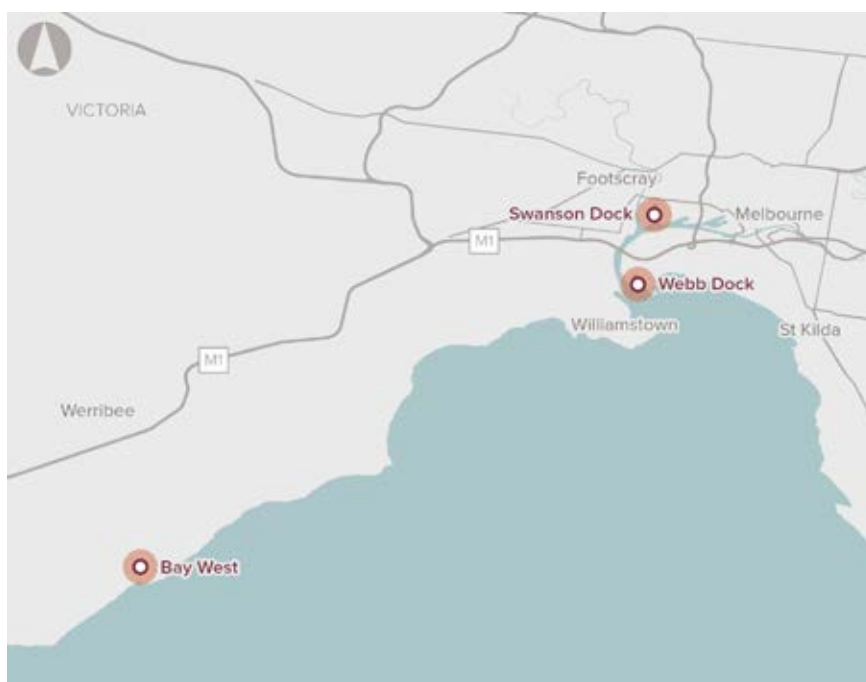
Various (0–15 years)

Proponent

Victorian Government

Date added to the IPL

February 2016



Problem

The Port of Melbourne is Victoria's busiest port and the largest container and general cargo port in Australia. Container traffic at the port is projected to grow by 2.6% per year, from 2.9 million Twenty Foot Equivalent Units (TEUs) in 2018 to around 9 million TEUs in 2050. The 2015 *Australian Infrastructure Audit* identified that, even with planned expansions, additional container terminal capacity will be required before 2031.

The development of additional container terminal capacity in Melbourne – with dedicated connections to the port, proposed metropolitan terminals, regional hubs and the national rail system – will help to alleviate congestion caused by road freight movements.

Currently, only around 10% of the Port of Melbourne's container trade is moved by rail to and from importers and exporters. This places significant pressure on the surrounding road network, which carries the remaining share. Given Melbourne's central role in Australia's freight supply chain, inadequate port capacity and transport access in Melbourne could have broader national consequences.

Proposed initiative

The initiative proposes planning and construction of additional container terminal capacity in Melbourne to cater for projected increases in containerised freight volumes.

This initiative includes optimising the capacity of existing ports, as well as longer-term planning and potential site preservation for future facilities. Infrastructure Victoria has advised the Victorian Government that Bay West should be the preferred location for a second major container port.

This initiative was updated in February 2019 to include the near-term landside transport initiatives needed to support increased port capacity, including road and rail access from metropolitan, regional and national networks.

A new Port Development Strategy for the Port of Melbourne is currently being developed by Port of Melbourne Operations.

The Victorian Government will also prepare a Victorian Ports Strategy to outline how Victoria's future exports and imports could be handled across current and future commercial ports. At the same time, the Victorian Government will undertake further planning work to confirm Bay West as the preferred site for a second major container port.

Access for higher capacity vessels should also be considered as part of this planning. A separate initiative for *East coast deep water container port capacity* is included on the *Infrastructure Priority List*.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Melbourne–Geelong rail capacity enhancement

Location

Melbourne–Geelong,
Vic



Geography

Fast-growing cities

Category

National Connectivity

Problem timeframe

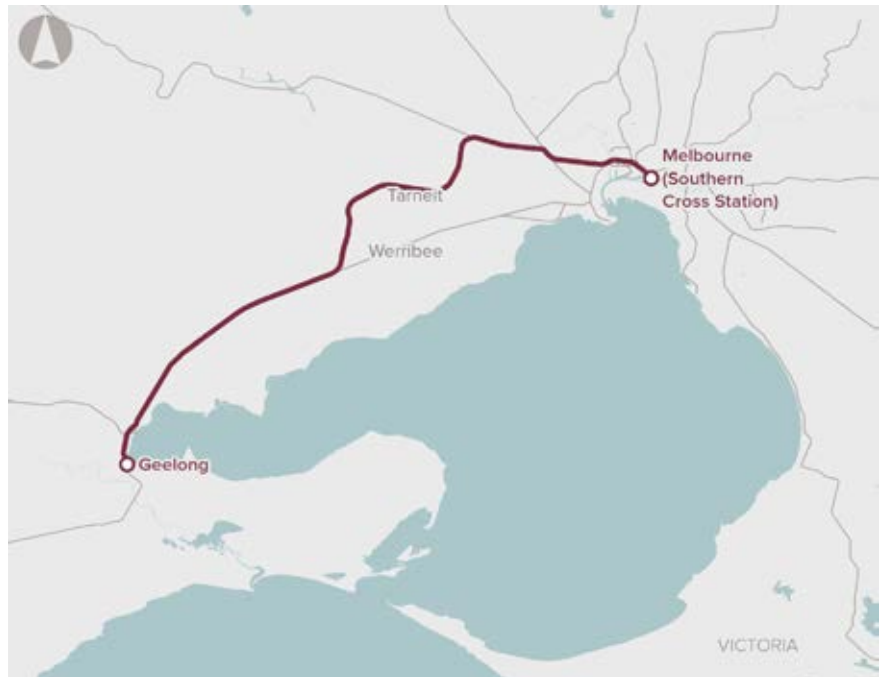
Longer term (10–15 years)

Proponent

Victorian Government

Date added to the IPL

March 2018



Problem

Geelong is Victoria's second-largest city, with a population projected to increase from 286,000 in 2016 to 445,000 by 2046. The existing passenger rail line between Melbourne and Geelong is expected to become capacity constrained in peak periods as more people travel between the two economic centres.

Limited capacity, and low train speeds resulting from the inability to run express services between the two centres, will limit Geelong's potential to grow as an economic hub to complement Melbourne. Increased rail capacity between the two cities, and faster travel times, would not only address emerging demand, but would also provide a nationally significant opportunity to facilitate growth in a key regional city.

Proposed initiative

There are a number of opportunities to address this emerging capacity gap. The current rail service is provided by diesel trains and has limited capacity. Electrification of the line would allow operation of higher capacity trains with increased reliability and inter-operability with the Melbourne metropolitan rail system. Duplicating the existing single-track pair would also allow for express services to operate through the suburban Melbourne sections of the line, providing faster journey times between Geelong and Melbourne.

Future growth in the region will need to be monitored to determine the optimal timing for and scope of infrastructure upgrades for the corridor.

Next steps

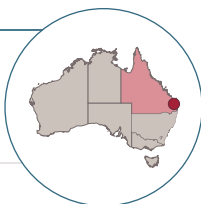
Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Brisbane to Gold Coast transport corridor upgrades

Location

Brisbane–Gold Coast,
Qld



Geography

Smaller cities and regional centres

Category

Urban Congestion

Problem timeframe

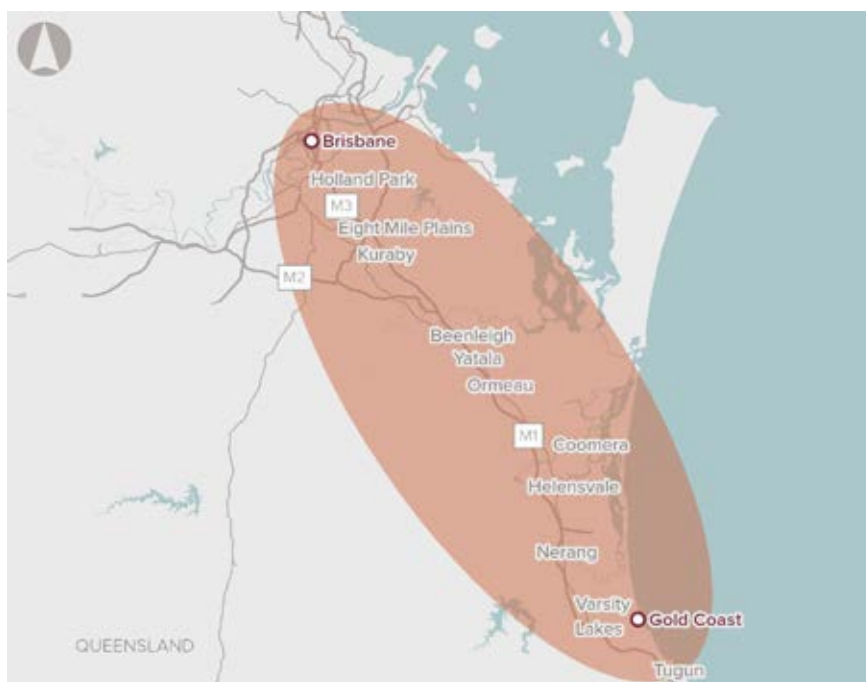
Near term (0–5 years)

Proponent

Queensland Government

Date added to the IPL

February 2017



Problem

The Brisbane to Gold Coast corridor is subject to high levels of demand, leading to congestion at peak and inter-peak times across both road and rail networks. The 2019 *Australian Infrastructure Audit* projected that, without intervention, the cost of congestion on key corridors in the Gold Coast region would increase by over \$700 million between 2016 and 2031.

On certain sections of the M1 Pacific Motorway, daily traffic volume exceeds 150,000 vehicles, around 40% of which is heavy and light commercial vehicles. During peak periods, users experience poor reliability and increasing journey times, particularly where congestion creates bottleneck sections. Road incidents are a major contributor to poor reliability, with over 12,000 incidents reported on the M1 Pacific Motorway annually.

In the absence of proper planning and investment, future growth in population, employment, tourism and freight will lead to an increase in the cost of congestion in the corridor, with an adverse impact on the region's productivity.

Proposed initiative

The initiative sets out a 10-year network wide program for upgrades to transport infrastructure in the corridor. It identifies 33 proposed infrastructure upgrades to the road, rail, cycling and bus transport networks to deliver more efficient, reliable and safe transport.

The *Infrastructure Priority List* separately identifies the following proposals that align with this program initiative:

- Gold Coast Light Rail Stage 3A (Priority Project)
- M1 Pacific Motorway– Eight Mile Plains to Daisy Hill (Priority Project)
- M1 Pacific Motorway – Varsity Lakes to Tugun (Priority Project)
- M1 Pacific Motorway between Eight Mile Plains and Tugun (High Priority Initiative)
- Gold Coast Rail Line capacity improvement – Kuraby to Beenleigh (Priority Initiative).

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework), and complete business case development (Stage 3 of the Framework).

Individual upgrade projects are at various stages of development.

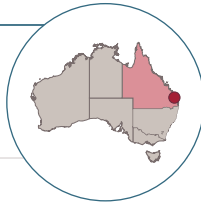
Priority Initiatives

Gold Coast Rail Line capacity

Kuraby to Beenleigh

Location

Kuraby to Beenleigh,
Qld



Geography

Fast-growing cities

Category

Urban Congestion

Problem timeframe

Near term (0–5 years)

Proponent

Queensland Government

Date added to the IPL

March 2018



Problem

The Brisbane to Gold Coast rail line connects Gold Coast City and Logan City with the Brisbane CBD and Brisbane Airport. The rail line moves approximately 20,000 passengers during the combined morning and afternoon peaks each day. The rail line is subject to strong growth in passenger demand, driven by population growth in the Brisbane to Gold Coast corridor.

The existing rail line is two tracks south of Kuraby station, and subject to a range of constraints including tight curves that limit line speeds, and level crossings. During peak periods, express services that travel from the Gold Coast into Brisbane must share a single track with 'all stops trains' between Kuraby and Beenleigh. This limits the number of services that can be provided to support growth in travel demand between the cities of Brisbane, Logan and the Gold Coast.

Infrastructure and operational constraints on the line have already resulted in overcrowding during peak periods. Failure to address these capacity constraints is likely to lead to more potential rail users choosing to use the already congested M1 Motorway instead. This will lead to additional travel times, with nationally significant impacts on productivity.

Proposed initiative

Additional capacity between Kuraby and Beenleigh would allow for the separation of express and all stops services, and increased frequency for Beenleigh and Gold Coast services in both directions, with associated travel-time savings and reliability improvements for passengers.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Centenary Motorway capacity

Location

Brisbane, Qld

Geography

Fast-growing cities

Category

Urban Congestion

Problem timeframe

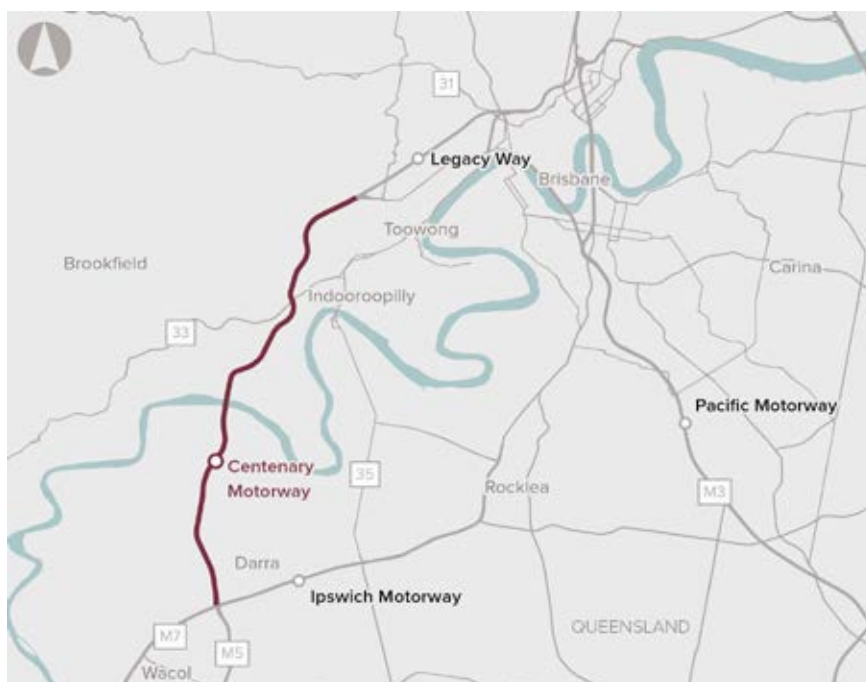
Near term (0–5 years)

Proponent

Queensland Government

Date added to the IPL

February 2019



Problem

The Centenary Motorway corridor connects Brisbane's rapidly growing Western Corridor (Ipswich, Springfield and the Ripley Valley) to Brisbane's inner north and the CBD. Between the Ipswich Motorway interchange in the south and Toowoong in the north there are high volumes of traffic along the corridor. These result in road congestion and poor trip reliability and road safety.

Projected population growth in the Western Corridor, combined with a growing number of people commuting from these areas to Brisbane's CBD for work, will exacerbate the problem in the future. Ipswich is expected to have the largest population growth of any Local Government Area within South East Queensland from 2016 to 2041 – with an additional 393,000 residents and 61,000 jobs.

Average weekday traffic on the Centenary Bridge was approximately 100,000 vehicles per day in 2016 and is estimated to rise to more than 150,000 vehicles per day in 2036. There were 192 crashes recorded on the Centenary Motorway between 2010 and 2016, and increasing congestion will contribute to further safety issues.

Proposed initiative

Options to improve capacity along the motorway include:

- intersection and on-ramp and off-ramp improvements
- implementing smart freeway technology
- road widening.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

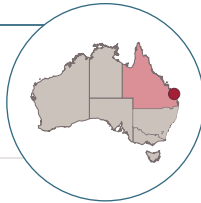
Priority Initiatives

Cunningham Highway

Yamanto Interchange to Ebenezer Creek³

Location

Yamanto to
Ebenezer, Qld



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

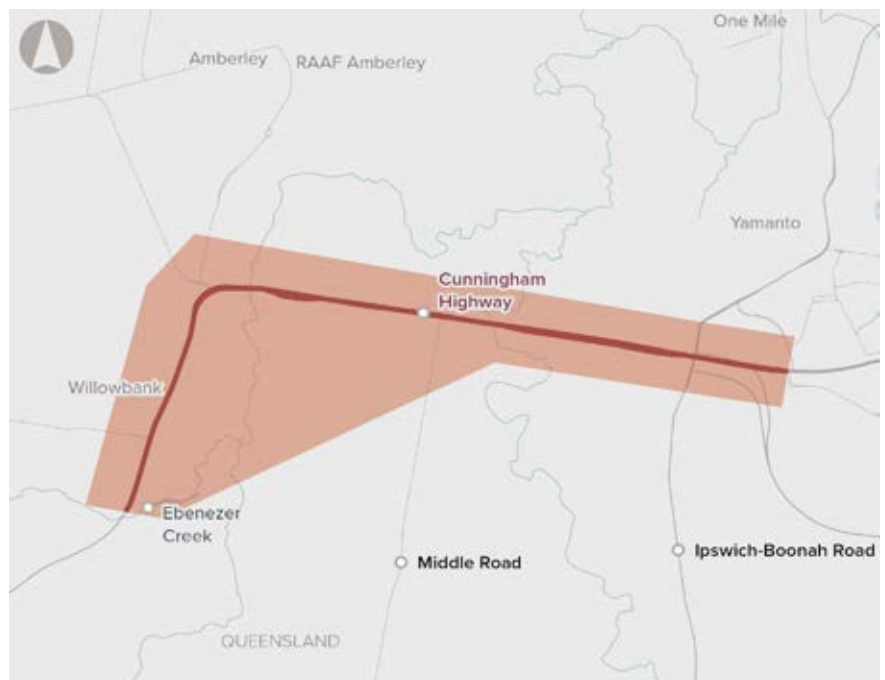
Near term (0–5 years)

Proponent

Queensland Government

Date added to the IPL

February 2016



Problem

The Cunningham Highway is a key interstate freight corridor that forms part of the Sydney to Brisbane inland corridor. It is part of the National Land Transport Network, and plays a significant role in transporting people and freight to and from Brisbane and the Port of Brisbane from the west. It records 2,700 heavy vehicle movements per day.

With the construction of the Port of Brisbane Motorway, and the recent upgrading of the Gateway Motorway South and the western Ipswich Motorway, the Cunningham Highway at Amberley is one of the few remaining 'pinch points' for interstate freight along the western corridor.

The identified 'pinch point' is the intersection of the Cunningham Highway and the Ipswich Rosewood Road. It results in high levels of congestion, particularly during the morning peak. Preliminary modelling suggests that the current direct cost of congestion at this location is approximately \$45 million per year.

The material impacts of the problem include declining levels of service, which reduces freight efficiency and through-traffic movements, as well as potentially limiting major developments planned for the area. The intersection does not meet current design standards, resulting in significantly higher than average crash rates. These problems are likely to worsen in the face of the significant population and freight growth expected in the region.

Proposed initiative

The initiative involves upgrades to a 4.75 km section of the Cunningham Highway between Warwick Road at Yamanto and Ebenezer Creek, including the Amberley Interchange. Specific capital works include a major off-line deviation with grade separation for the Amberley Interchange, additional capacity at the Amberley Interchange off-ramp, and a new service road between Coopers Road and Yamanto.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

The business case was submitted to Infrastructure Australia for evaluation in 2017 and then withdrawn by the Queensland Government in July 2018, noting that the Queensland Government is revising the project's benefits for later submission.

³ This initiative was previously referred to as the 'Cunningham Highway – Yamanto to Ebenezer/Amberley upgrade'.

Priority Initiatives

Warrego Highway east corridor improvements

Location
Ipswich to
Toowoomba, Qld



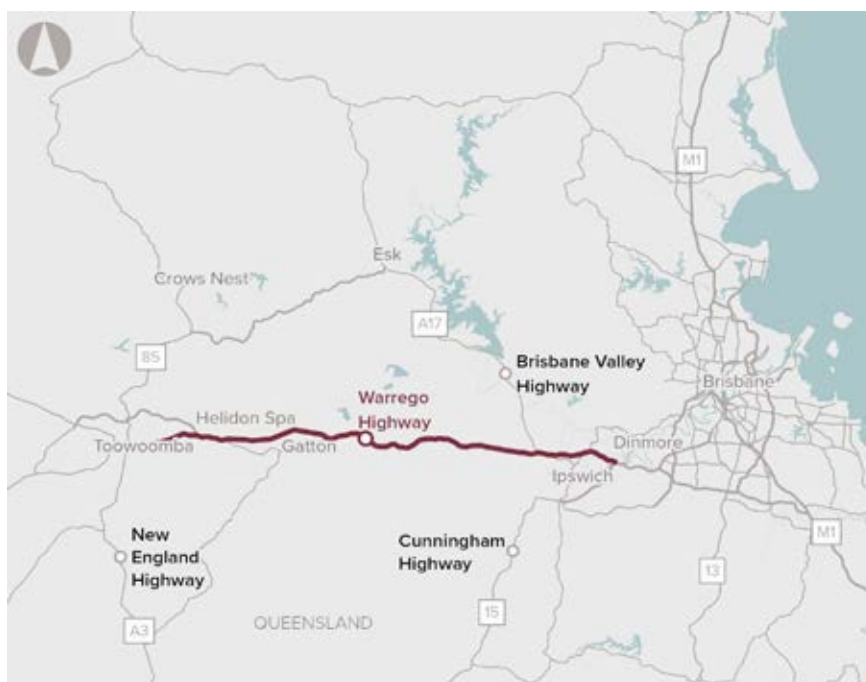
Geography
Smaller cities and regional centres

Category
National Connectivity

Problem timeframe
Near term (0–5 years)

Proponent
Queensland Government

Date added to the IPL
February 2019



Problem

The Dinmore to Helidon Spa section of the Warrego Highway falls below modern safety standards, with a high average fatal crash rate of between three and 10 times that of a contemporary motorway standard. In addition, there is low flood immunity along this section of the highway, which significantly affects freight productivity and access for passenger movements.

The Warrego Highway is Queensland's principal east-west freight route. The section between Dinmore and Helidon Spa is the gateway to western Queensland and connects Darwin and Melbourne to the Port of Brisbane.

Strong freight growth to the Port of Brisbane, together with population growth, particularly around Ipswich, will place greater pressure on the highway.

Proposed initiative

The initiative involves upgrade of the Dinmore to Helidon Spa section of the Warrego Highway to improve road safety, capacity and flood immunity.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Bruce Highway upgrade

Location

Brisbane to Cairns, QLD



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

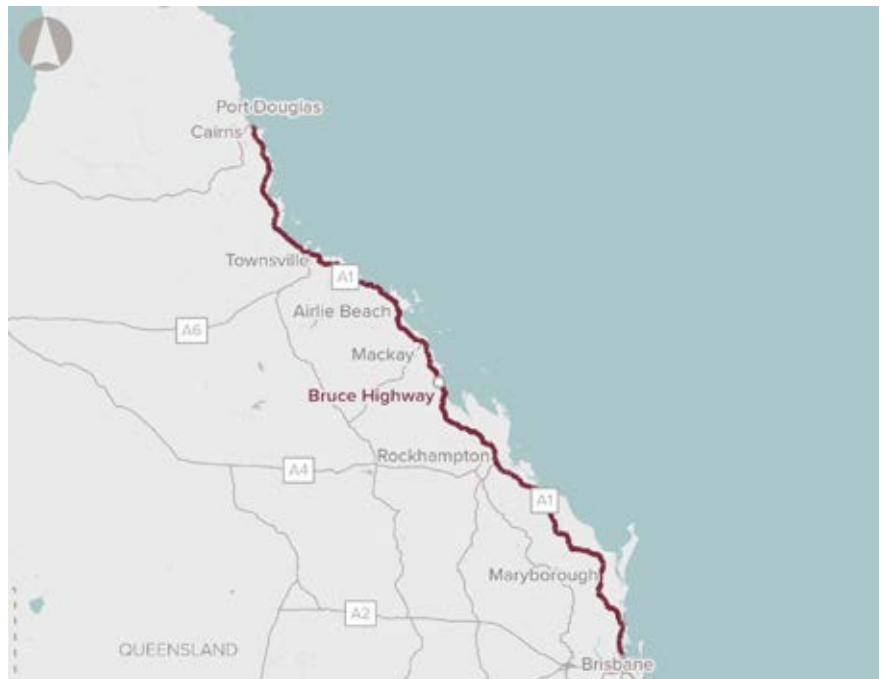
Near to medium term (0–10 years)

Proponent

Queensland Government

Date added to the IPL

February 2016



Problem

The Bruce Highway is Queensland's major north–south corridor, connecting coastal population centres from Brisbane to Cairns. The highway is part of Queensland's Priority Freight Network and forms part of the National Land Transport Network.

With Queensland's freight task expected to double between 2010–11 and 2025–26, the highway will have to accommodate a significant increase in freight volumes. The highway's roles in connecting regional centres and facilitating significant freight movement were identified as key regional priorities for Queensland in the 2015 *Australian Infrastructure Audit*.

The problems identified along the Bruce Highway include: safety concerns, poor flooding immunity, poor connectivity to regional centres and capacity constraints around key economic clusters.

The problems identified along the highway are largely driven by increased traffic volumes associated with population and economic growth, resulting in congestion around key economic hubs. This diminishes Queensland's freight productivity.

Proposed initiative

The initiative proposes progressive priority upgrades to the Bruce Highway to address specific capacity constraints, flood resilience and safety concerns. Major planned works include:

- Rockhampton Ring Road
- Townsville Ring Road Stage 5
- Burdekin deviation
- Ingham to Cardwell Range deviation.

Business cases for Cooroy to Curra (Section D), Edmonton to Gordonvale duplication, Maroochydore Road Interchange and the Caboolture to Steve Irwin section have been assessed by Infrastructure Australia and are separately listed as Priority Projects on the *Infrastructure Priority List*.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework), and complete business case development (Stage 3 of the Framework).

Individual upgrade projects are at various stages of development. The business case for Townsville Ring Road Stage 5 is currently under assessment by Infrastructure Australia (Stage 4 of the Framework).

Priority Initiatives

Mount Isa–Townsville rail corridor upgrade

Location

Far North Queensland



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

Medium term (5–10 years)

Proponent

Queensland Government

Date added to the IPL

February 2016



Problem

The current rail line between Townsville and Mount Isa is capacity constrained, with inefficient rail and terminal operations. These constraints include access to the Port of Townsville, short passing loop lengths and limited passing opportunities.

In its current form, the rail line does not have capacity to cater for the projected increase in demand for rail haulage from mines in the Mount Isa region to the Port of Townsville. Future demand on the line is, under a moderate scenario, estimated to be 20 million tonnes per year. In 2011, the line carried 6 million tonnes and had a theoretical capacity of 7.5 million tonnes.

Proposed initiative

The initiative proposes the following works:

- enhancements to western sections of the Mount Isa to Townsville Rail Corridor
- construction of a new 6.5 km Townsville Eastern Access Rail Corridor (TEARC) to provide direct access to export facilities at the Port of Townsville for longer trains.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

The Queensland Government completed a business case for the TEARC component of this initiative in 2018. The business case recommended that the TEARC corridor should be preserved so that it can be delivered in the future when sufficient demand is generated through the Port of Townsville.

The Queensland Government is currently undertaking activities to preserve the corridor.

Priority Initiatives

Port of Gladstone land and sea access upgrade

Location
Gladstone, Qld



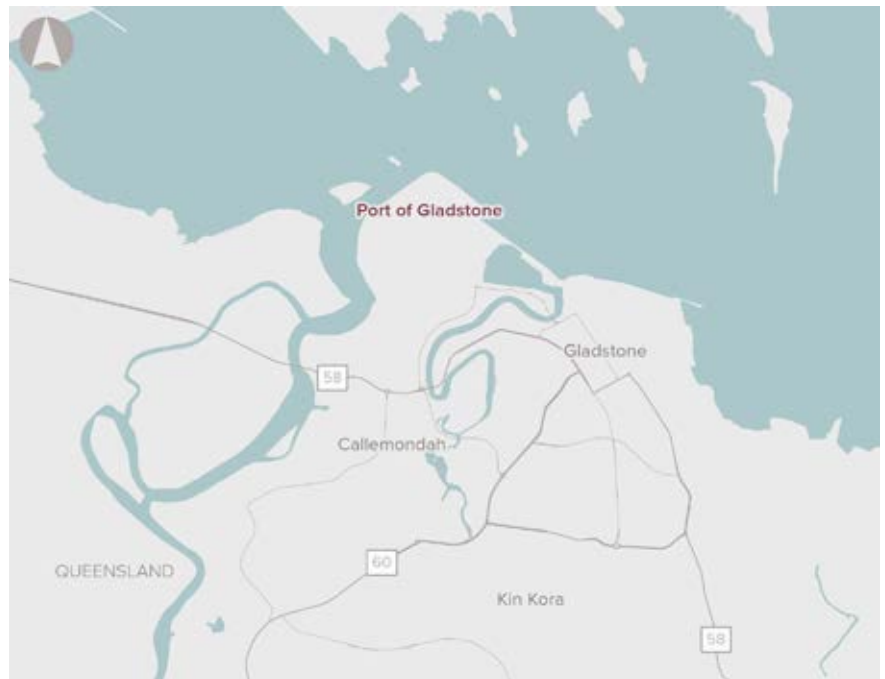
Geography
Smaller cities and regional centres

Category
National Connectivity

Problem timeframe
Medium term (5–10 years)

Proponent
Gladstone Ports Corporation

Date added to the IPL
February 2016



Problem

The 2015 *Australian Infrastructure Audit* found that growth in national mineral and gas exports will lead to significant growth in demand for regional highway, rail and port infrastructure. Improving connections to ports will be essential to supporting these industries.

The Port of Gladstone handled 121.2 million tonnes of imports and exports in 2016–17. The port's most recent 50-year plan (2012) envisages the port's capacity will ultimately grow to 250–300 million tonnes per year. The Audit noted that the Port of Gladstone handled around 7.5% of Australia's total bulk imports and exports (measured in gross mass tonnes) in 2012–13.

Gladstone Ports Corporation has referred to a recent study that identified a number of opportunities to invest in infrastructure to underpin growth in Central Queensland's mining, export and agricultural sector. These opportunities relate to land and sea access infrastructure designed to support productive supply chains to the Port of Gladstone.

Proposed initiative

The proposal covers a range of potential projects including:

- channel management to increase export capacity through the port
- upgrades to road and bridge infrastructure that services the port
- new rail infrastructure to provide direct connections from the Surat Basin to the port.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Queensland inland road network upgrade

Location
Queensland



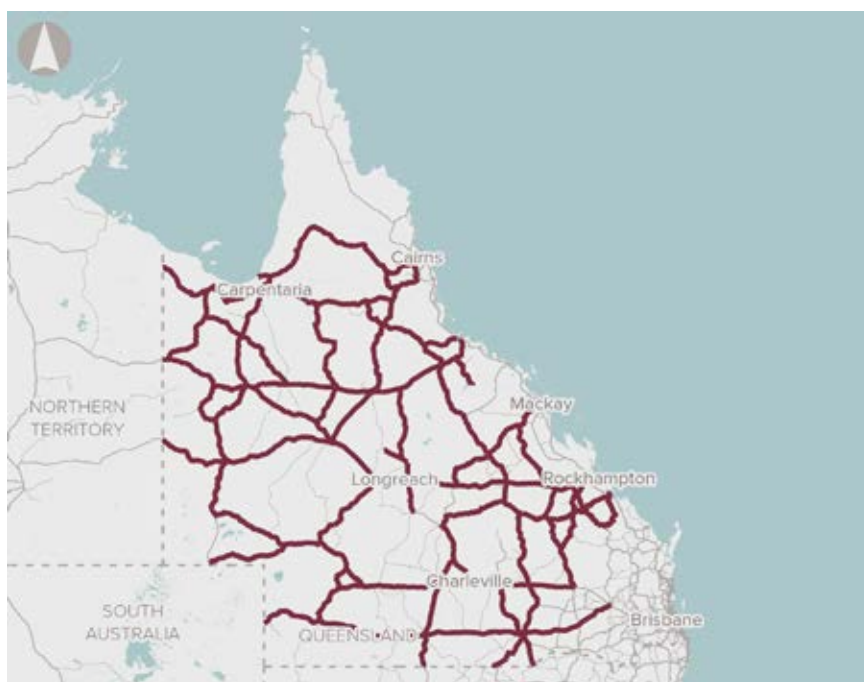
Geography
Small towns, rural communities and remote areas

Category
National Connectivity

Problem timeframe
Medium term (5–10 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2020



Problem

Deteriorating roads and bridges in regional Queensland are increasing travel times, vehicle operating costs and safety risks. Flooding is also an issue for many of these roads.

Key routes affected by these issues include:

- the Warrego, Landsborough, Flinders, Barkly, Carnarvon, Dawson, Peak Downs and Capricorn Highways
- the Kennedy Highway and Developmental Road
- the Gregory Highway and Developmental Road
- The Gulf Developmental Road.

Queensland's road freight network contains coastal and inland routes, with the inland routes being 10 times longer in total kilometres. In 2016–17, the Queensland freight task was estimated to be 170 billion tonne kilometres, with 65% moved by road. The freight task is projected to grow by 20% over the next decade.

It is likely that growth in population, employment, tourism and freight volumes will exacerbate these safety and capacity issues, resulting in nationally significant productivity losses.

Proposed initiative

The initiative proposes a strategy that prioritises investment based on the goals of improving productivity and safety on regional Queensland roads, and sustaining regional communities.

The initiative includes improvements to address safety, surface issues, flooding, bridge strength and width, road alignments, widening and pavement sealing.

This initiative originated from a detailed submission by RDA Townsville and North West Queensland, the Secretariat of the Inland Queensland Roads Action Project, on behalf of all 34 funding partners, including 28 local governments, 5 RDA Committees and the Royal Automobile Club of Queensland.

Next steps

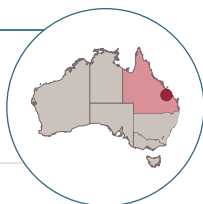
Proponent to be identified.

Priority Initiatives

Lower Fitzroy River water infrastructure development

Location

Fitzroy River,
Central Queensland



Geography

Small towns, rural communities
and remote areas

Category

Opportunity for Growth

Opportunity timeframe

Near term (0–5 years)

Proponent

SunWater Ltd

Date added to the IPL

February 2016



Opportunity

Demand for water resources in Central Queensland is predicted to rise as a result of continued industrial and urban growth in the Lower Fitzroy and Gladstone areas and potentially some agricultural development within the Fitzroy Agricultural Corridor.

Water demand projections indicate a total shortfall of high-priority water for urban and industrial needs in the Central Queensland region in the order of 41,000 megalitres per year by 2020.

Without secure access to water, further development in this high-growth region is expected to be constrained beyond 2020.

Proposed initiative

The initiative proposes increasing water storage in the region by constructing a new weir at Rookwood on the Fitzroy River.

The primary benefit of the initiative would be to provide up to 76,000 megalitres of medium- and high priority water per year. The water would be used for agricultural, industrial and urban purposes, and potentially underpin further high-value agricultural development in the region.

Next steps

The business case was evaluated by Infrastructure Australia in June 2018.

The project is proceeding to delivery with funding support from the Australian Government and Queensland Government.

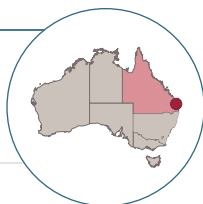
Road upgrades are underway and the Riverslea Bridge upgrade is scheduled to commence in 2020. Weir construction is scheduled to start in early 2021 and be completed by the end of 2023 (weather permitting).

Priority Initiatives

Corridor preservation for Salisbury to Beaudesert rail connection

Location

Salisbury to Beaudesert, Qld



Geography

Smaller cities and regional centres

Category

Corridor Preservation

Problem timeframe

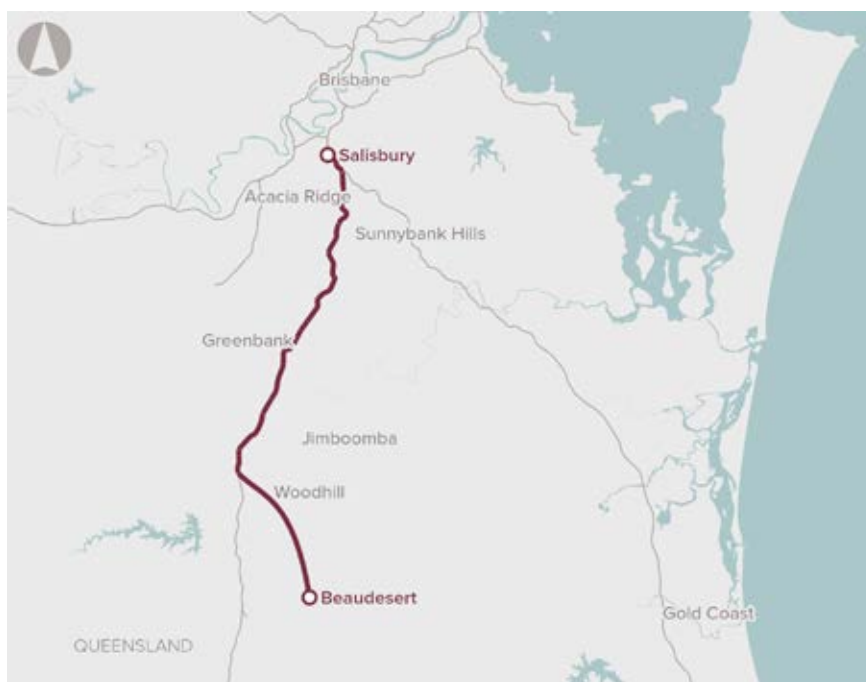
Near term (0–5 years)

Proponent

Queensland Government

Date added to the IPL

February 2017



Problem

South East Queensland's population is projected to increase by 2 million people between 2015 and 2041. Under current Queensland Government plans, much of this growth will be accommodated in the south-west of the region. The Logan Local Government Area (LGA) is expected to accommodate an additional 277,300 people by this time, and the Scenic Rim LGA is expected to accommodate an additional 22,200 people, bringing its population to 62,000. Further growth beyond 2041 is anticipated.

Without improvements to public transport, much of the associated growth in transport demand from this area will need to be accommodated on a road network that will become progressively more congested. Unless a corridor for improved rail transport is protected, opportunities to provide sufficient rail capacity could be 'built out'.

Proposed initiative

The 54 km proposed corridor would link Salisbury to Beaudesert in Brisbane's south-west region. The corridor largely aligns with the existing interstate rail line between Salisbury and Kagaru. The initiative is aimed at providing for electrified passenger rail services, with 11 new stations, and additional space for duplication of the existing interstate freight line. A cycleway is also proposed along the corridor.

The initiative is close to the alignment for a section of the proposed east coast high speed rail line (also a corridor protection initiative on the *Infrastructure Priority List*). Subject to further design development, the initiative could be adapted to provide sufficient space for a high speed rail line.

The Queensland Government is now planning for the Salisbury to Beaudesert Rail Corridor by confirming land requirements and staging to support future passenger demand and land use changes.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Armadale Road bridge

Location
Perth, WA

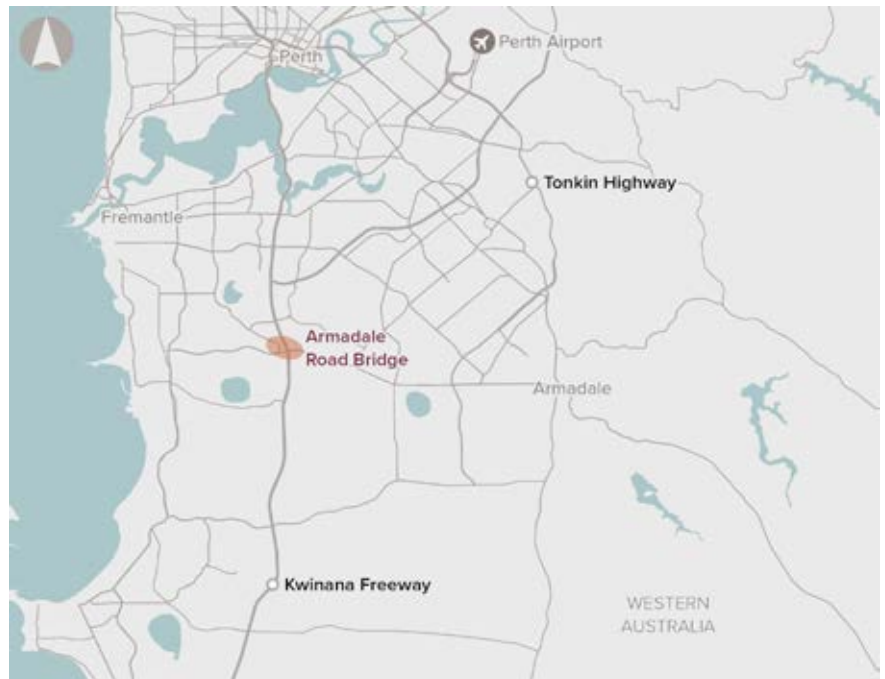
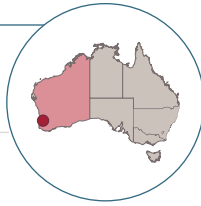
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Western Australian Government

Date added to the IPL
March 2018



Problem

Cockburn Central is an employment, activity and transport hub in south-west Perth. The key east–west route through the centre is Armadale Road and Beeliar Drive, and the major north–south link is the Kwinana Freeway. Residential, commercial and retail growth in the Cockburn Central area is increasing the volume of traffic seeking to access the area.

The existing road configuration does not separate traffic getting on and off the Kwinana Freeway from traffic seeking to access Cockburn Central. The busy and congested road network fragments the activity centre, with network impacts that affect the movement and productivity of vehicles, including general traffic, bus network access to the heavy rail connection at Cockburn Central, and freight and emergency response vehicles. As congestion in the region increases in the future, increased travel time and reduced travel time reliability will have nationally significant impacts on productivity.

Efforts to ease congestion in this area have so far focused on widening Armadale Road. Construction to convert the last remaining single carriageway section of Armadale Road to dual carriageway commenced in 2018. However, widening Armadale Road without creating additional capacity for through traffic accessing the Kwinana Freeway will exacerbate congestion at Cockburn Central.

Proposed initiative

The initiative proposes a new bridge and freeway interchange bypassing traffic around Cockburn Central, in order to provide easier access to the Kwinana Freeway and Armadale Road.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Swan River crossing capacity

Location
Perth, WA

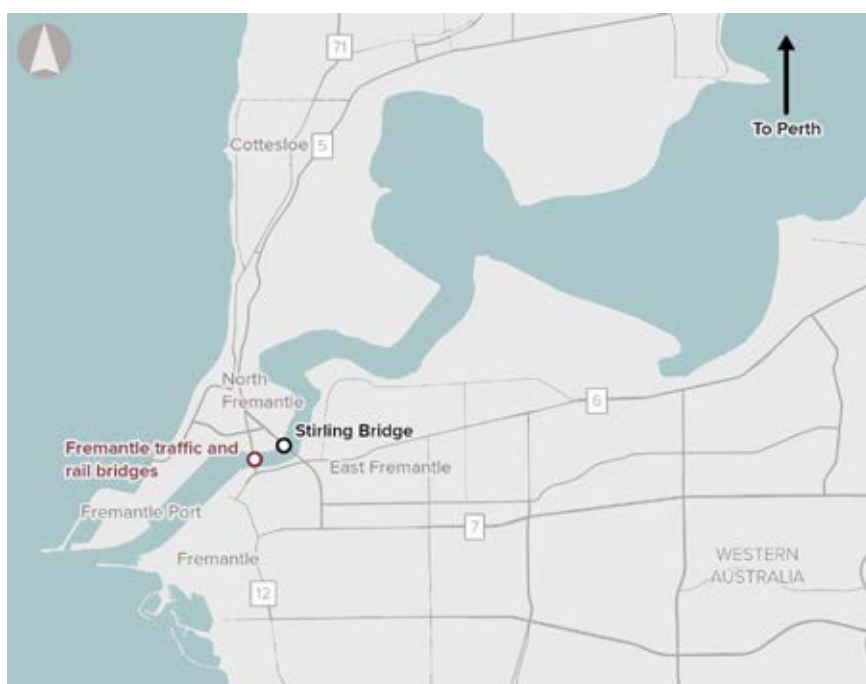
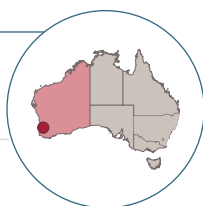
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Western Australian Government

Date added to the IPL
February 2019



Problem

The Fremantle Traffic Bridge is at the end of its useable life and is at risk of closure. Transport across the Swan River at Fremantle Harbour is currently provided by three bridges: the Stirling Bridge, the Fremantle Traffic Bridge and the Fremantle Rail Bridge (which lies to the west of the traffic bridge).

Main Roads Western Australia's current assessment of the condition of the Fremantle Traffic Bridge is that without significant remedial maintenance, (which will not extend the service life of the structure) closure will be required in the near term. This is a result of continuing deterioration of critical timber components and scouring of the bridge supports.

Closure of the bridge, without replacement, would substantially increase demand pressure on the Stirling Bridge, which would worsen travel times, reduce the resilience of the road network and impact heavy freight road access to the port.

Freight and passenger rail connectivity is also constrained due to the shared Fremantle Rail Bridge, on which passenger services are given priority. As the volume of freight increases on rail and the demand for passenger services increases, the capacity conflict will impact on the timely and efficient provision of rail services. However, it is unclear when the rail bridge will reach capacity.

Proposed initiative

The initiative involves addressing the risk of closure for the Fremantle Traffic Bridge. This could be achieved by renewing or replacing the existing bridge, or developing and improving alternative crossings and routes.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Perth rail network capacity

Location
Perth, WA

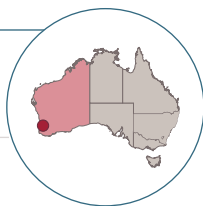
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
Western Australian Government

Date added to the IPL
March 2018



Problem

Perth's population is projected to grow from approximately 2 million people in 2016 to 2.5 million by 2026. This growth is expected to occur through the densification of existing urban areas and limited expansion of Perth's overall urban footprint.

Perth's urban rail network will play a vital role in supporting this growth. There were approximately 244,000 daily rail boardings on this network in 2015. This figure is projected to double over the next 15 years. The rail network will need additional capacity to service the city's major growth areas.

In the absence of additional public transport capacity, further strong growth in demand for travel will need to be absorbed by Perth's road network, which is already constrained in peak periods. This has the potential to exacerbate congestion, further increasing travel-time costs and resulting in nationally significant productivity losses.

Proposed initiative

Additional rail network capacity could be realised through line and station upgrades, platform extensions, line extensions, train control and signalling upgrades, level crossing removals, rolling stock upgrades, better system resilience (i.e. power and turnbacks) and improved station accessibility. These investments will need to align with broader land use and transport planning across the city to deliver an efficient and integrated transport system.

The Western Australian Government established the METRONET office in 2017 to develop business cases for a number of Perth rail network projects.

Business cases for the following projects were evaluated by Infrastructure Australia in 2018 and were previously included on the *Infrastructure Priority List*:

- Yanchep Rail Extension – as a High Priority Project.
- Thornlie-Cockburn Link – as a Priority Project.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework), and complete business case development (Stage 3 of the Framework).

Individual projects are at various stages of development.

Priority Initiatives

Transport connectivity between Morley and Ellenbrook

Location
Perth, WA

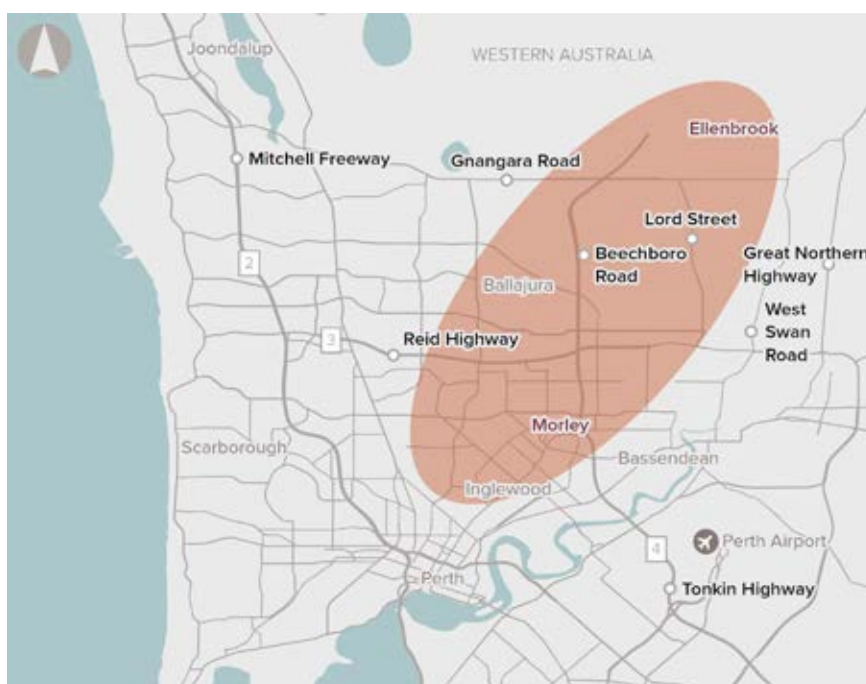
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Longer term (10–15 years)

Proponent
Western Australian Government

Date added to the IPL
February 2019



Problem

In Perth's north-eastern suburbs, users can travel between Morley and Ellenbrook by bus or car. However, low-density development in the north-east and poor bus service reliability has led to high car dependency. This causes congestion on the key routes that connect the suburbs, including Lord Street, Beechboro Road, West Swan Road and the Reid Highway.

The population of Perth's north-eastern suburbs, including the region between Morley and Ellenbrook, is estimated to grow by 2.2% per year between 2016 and 2031. Some of this growth will be met by major road upgrades currently being delivered along the corridor.

However, within the next 10–15 years, further growth in demand will cause significant congestion issues on the road network and worsen bus reliability and overcrowding. There is also an opportunity to better integrate transport and land use planning, to encourage more sustainable development and intensify development near activity centres and railway stations throughout the corridor.

Proposed initiative

Potential options to address the problem could include upgrades to the existing road network, improving bus service frequency and reliability or, if there is sufficient demand, introducing new modes such as bus rapid transit or rail.

The Western Australian Government is currently delivering upgrades to Lord Street and the NorthLink project, which links Morley to Muchea in the north. These improvements are expected to help meet demand along the corridor.

The Western Australian Government established the METRONET office in 2017 to develop business cases for a number of Perth rail network projects. This includes a potential rail line between Morley and Ellenbrook.

Next steps

The business case is currently under assessment by Infrastructure Australia (Stage 4 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Canning Bridge crossing capacity and interchange

Location
Perth, WA

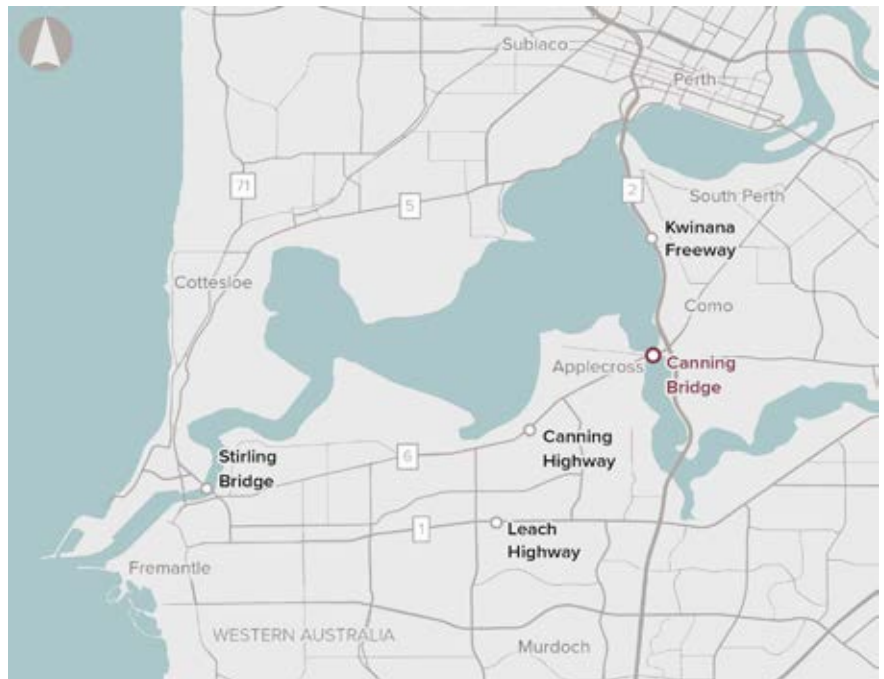
Geography
Fast-growing cities

Category
Urban Congestion

Problem timeframe
Longer term (10–15 years)

Proponent
Infrastructure Australia identified initiative

Date added to the IPL
February 2019



Problem

Canning Bridge is an important interchange for bus and rail services, which is forecast to become capacity constrained in the longer term. In March 2018, a peak month for boardings among students, there were approximately 4,000 average weekday train boardings (of whom over 2,800 transferred from buses).

The current alignment of the bus station also causes road congestion. Buses travelling east along the Canning Highway block a traffic lane when stopping at the bus station, interrupting other vehicles travelling along the Canning Highway. Similarly, buses stopping at the bus station during peak periods can block the northbound Kwinana Freeway bus lane access ramp. Along the Canning Highway, there is only one dedicated bus bay, which is in the westbound direction, close to the bus station.

Customer experience at the bus station is also poor, with limited pedestrian and cycling access from all approaches, and no dedicated parking or drop-off facilities. Some passengers are required to cross surface roads when interchanging between bus and rail, and there are no toilet facilities at the station.

To improve the road network in the near term, there are currently projects underway on the Kwinana Freeway to deliver smart freeway technology on the northbound lanes between the Canning Highway and Narrows Bridge, as well as an on ramp from Manning Road.

Proposed initiative

Improvements to station accessibility and amenity would aim to increase public transport patronage and reduce impact on the adjacent road network.

Next steps

Proponent to be identified.

Priority Initiatives

Great Northern Highway improvements

Broome to Kununurra

Location

North WA



Geography

Small towns, rural communities and remote areas

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

Western Australian Government

Date added to the IPL

February 2020



Problem

Long sections of narrow pavement and single-lane bridges create conflict between heavy vehicles and other traffic between Broome and Kununurra on the Great Northern Highway.

In the wet season, regular road closures disrupt supply chains for industry and add to the cost of operating in the Kimberley Region. These road closures mean there are unreliable connections between local communities and poor access to essential services.

The 2019 *Australian Infrastructure Audit* found that communities and businesses in remote areas are reliant on available infrastructure for their productivity and wellbeing.

The issues of flood resilience, accessibility and safety are a threat to continued economic and social growth in the northern region of Western Australia.

Proposed initiative

The initiative involves improvements to address safety, pavement and bridge strength and width, culvert rehabilitation and flooding resilience on sections of the Great Northern Highway between Broome and Kununurra.

Next steps

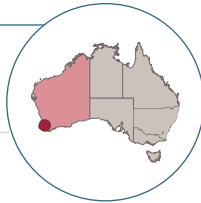
Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Wheatbelt Secondary Freight Network improvements

Location

Central South WA



Geography

Small towns, rural communities and remote areas

Category

National Connectivity

Problem timeframe

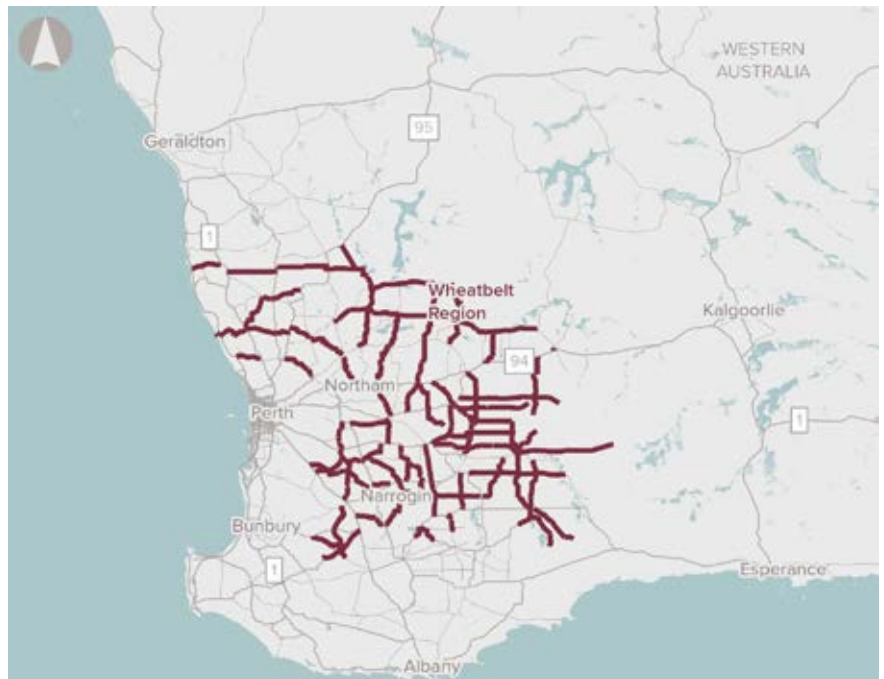
Near term (0–5 years)

Proponent

RDA Wheatbelt

Date added to the IPL

February 2020



Problem

Western Australia's freight task from the Wheatbelt Region relies heavily on the Wheatbelt Secondary Freight Network, which connects producers to the network of grain receival points, rail terminals and state highways. The network includes approximately 4,675 km of roads.

The types of freight transported across the region include grain, livestock, hay, lime and fertiliser. On average, 9 million tonnes of grain is produced in the region per year.

The Wheatbelt Secondary Freight Network faces a number of challenges, including:

- growing and changing freight task
- consolidation of grain receival facilities
- increasing use of larger vehicles
- pressure to increase supply chain productivity
- poor road safety outcomes.

Currently, the surface condition, shoulder condition and width of roads throughout the network are largely inadequate for the heavy vehicle road task. Vehicle mass limits are also inconsistent across the network, forcing many producers to use lower mass and less efficient vehicles to move freight.

Proposed initiative

The program is for assessing and prioritising sections of the Wheatbelt Secondary Freight Network.

Potential options include:

- addressing maintenance backlogs or implementing pre-emptive maintenance
- partial road upgrades, such as cross-section improvements
- full road upgrades, including geometric corrections
- provision of new routes.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Bunbury Outer Ring Road

Location

Perth, WA

Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

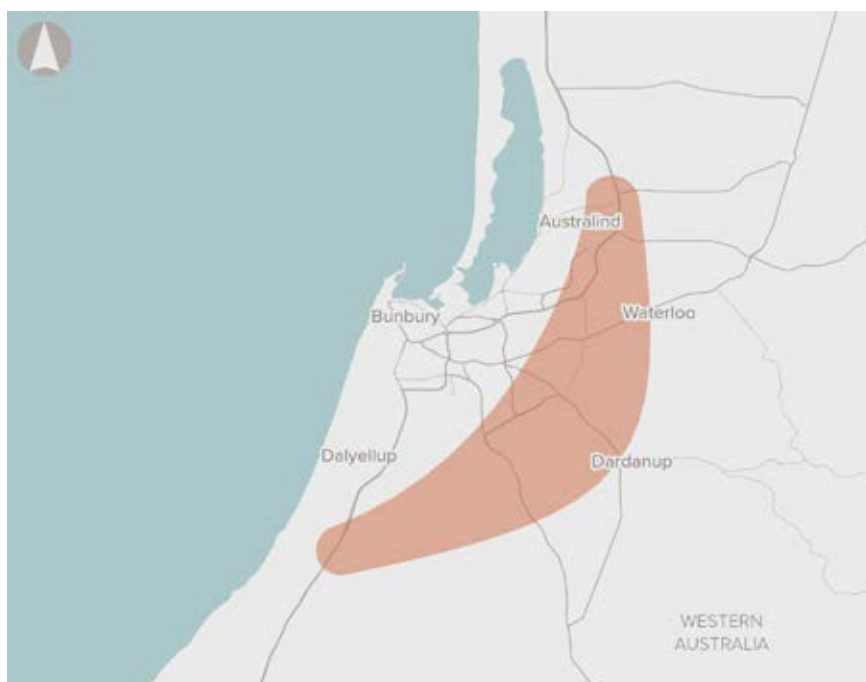
Medium term (5–10 years)

Proponent

Western Australian Government

Date added to the IPL

March 2018



Problem

Bunbury is the second-largest city in Western Australia and one of the fastest growing regional cities in Australia. The Port of Bunbury is Western Australia's fourth-largest port by throughput, accommodating export growth of 3.4% annually between 2012 and 2017.

The Port of Bunbury is located adjacent to the Bunbury CBD and is serviced by five major highways that converge on the eastern outskirts of the city. The location of the port, in combination with the layout of the road infrastructure, results in freight vehicles passing through urban areas and at-grade intersections and rail crossings.

This is leading to travel-time delays, increases in vehicle operating costs and issues with safety, noise and air pollution.

Traffic volumes are forecast to continue increasing as a result of population, commercial and industrial growth across the region. Future growth in port traffic and other traffic streams, along with increasing demand for higher-productivity and larger vehicles, will exacerbate existing inefficiencies. The resulting cost increase will result in nationally significant impacts on productivity, and potentially compromise the competitiveness of the Port and the South West region.

Proposed initiative

Development of a ring road on the outskirts of Bunbury would allow the separation of regional traffic (including vehicles accessing the Port of Bunbury) and local traffic, thereby providing road safety, travel time and freight efficiency benefits.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Perth Airport new runway

Location
Perth, WA

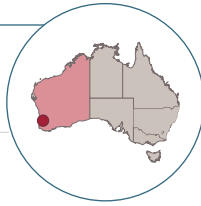
Geography
Fast-growing cities

Category
National Connectivity

Problem timeframe
Medium term (5–10 years)

Proponent
Perth Airport

Date added to the IPL
February 2016



Problem

Perth Airport is the fourth busiest in the country. The 2015 *Australian Infrastructure Audit* found Perth Airport will need additional capacity to meet projected growth in demand.

The Perth Airport Preliminary Draft Master Plan 2020 forecasts passenger throughput to increase from 14.5 million in 2018–19 to 28.5 million in 2039–40, and total aircraft movements are predicted to grow from 132,000 annually in 2018–19 to 202,000 in 2039–40.

This growth is partly driven by the airport's role as a critical fly-in fly-out transport hub for shift workers travelling to Western Australia's regional mining operations.

Passenger movements in and out of Perth Airport are concentrated around peak periods.

The high level of demand during peak periods fully utilises available runway slots, which leads to a less preferable departure or arrival time. This can lead to higher costs for business travellers and fly-in fly-out workers, reducing Australia's international competitiveness.

Proposed initiative

The initiative proposes construction of an additional runway at Perth Airport to provide the capacity needed to meet increasing demand.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

The proponent has submitted the Draft Major Development Plan for the new runway project to the Australian Government for its approval.

Priority Initiatives

South Coast Highway improvements

Albany to Esperance

Location
South Coast, WA



Geography
Small towns, rural communities and remote areas

Category
National Connectivity

Problem timeframe
Medium term (5–10 years)

Proponent
Western Australian Government

Date added to the IPL
February 2020



Problem

The South Coast Highway is a strategic freight and tourism route in the South West region of Western Australia, servicing the ports of Albany and Esperance and connecting regional towns.

However, the age, design and condition of the highway is causing significant safety issues, and high operating and maintenance costs.

Around 74% (or 348 km) of the South Coast Highway consists of pavement that is more than 40 years old. In addition, eight bridges along the highway are timber, with some being almost 60 years old.

Continued decline in road condition, with population growth and increases in freight volumes and tourism activity, will further exacerbate the effects of these problems in the future.

Proposed initiative

The initiative involves upgrades to the South Coast Highway between Albany and Esperance. This could include:

- realigning and widening of some sections of the highway
- sealing road shoulders
- constructing passing lanes
- restoring pavement or upgrading to heavy-duty pavement
- upgrading or replacing timber bridges.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Perth container terminal capacity and land transport access

Location
Perth, WA

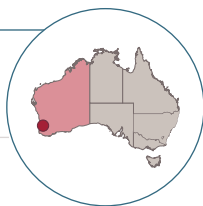
Geography
Fast-growing cities

Category
National Connectivity

Problem timeframe
Longer term (10–15 years)

Proponent
Western Australian Government

Date added to the IPL
February 2016



Problem

Fremantle Port Inner Harbour handles most of Western Australia's container trade. Throughput at the current container terminal at Fremantle Port will be limited by urban development that constrains the road and rail connections into the port.

In 2017–18, the port handled approximately 750,000 containers. This trade is expected to grow on average by 2.8% each year between 2017–18 and 2067–68. This growth could result in the current facility reaching capacity in around 15 years.

These capacity constraints will need to be addressed if the freight supply chain is to remain efficient. These issues were formerly addressed on the *Infrastructure Priority List* by the Perth Freight Link initiative, but are now included as part of this combined container terminal capacity and land transport access initiative.

Additional container terminal facilities, whether located at the current port site, or at a new Outer Harbour site south of Fremantle at Kwinana, will need to be served by road and rail connections that provide capacity for growth over the economic life of the facilities.

Proposed initiative

The initiative includes planning, and potential corridor and site preservation, for additional container terminal capacity, and road and rail access, to accommodate future demand in Perth.

In the near to medium term, there may also be an opportunity to help support growing demand with smaller scale port and transport access investments.

The Westport Taskforce was announced in September 2017 to deliver an integrated strategy to meet the future freight and trade logistics needs for Perth and surrounding regions. The strategy will consider the development and growth of the Fremantle Port at the inner and outer harbours, as well as the potential for the Port of Bunbury to contribute to the handling of the growing trade task.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Perth south-east corridor capacity improvements

Location

Perth, WA

Geography

Fast-growing cities

Category

Urban Congestion

Problem timeframe

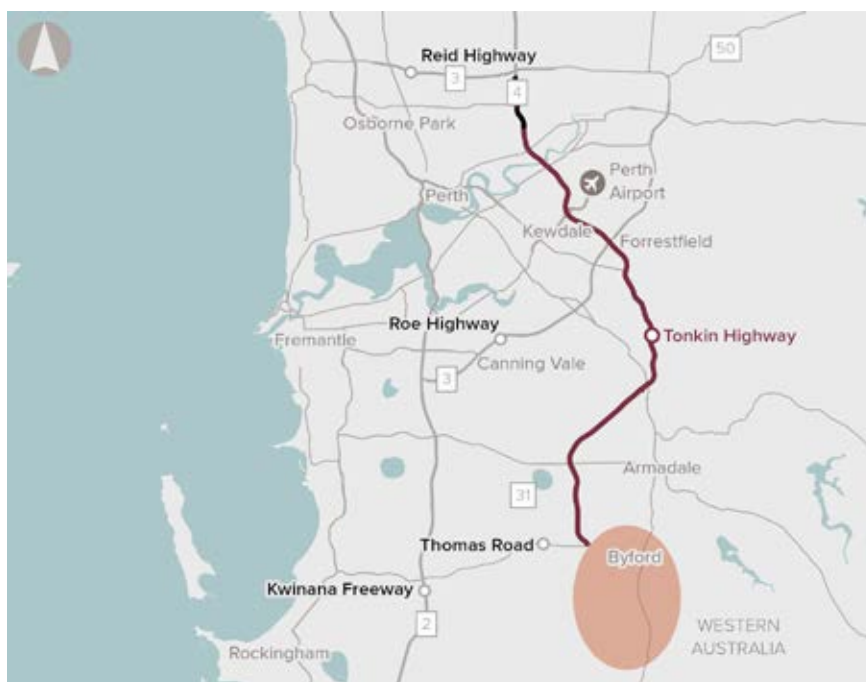
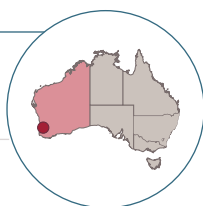
Various (0–15 years)

Proponent

Western Australian Government

Date added to the IPL

February 2019



Problem

Perth's south-east transport corridor is experiencing growing levels of congestion and road crashes as traffic volumes grow. This is being driven by population and economic growth, related to urban and industrial developments along the corridor.

The Tonkin Highway is a 44 km north–south highway and partial freeway that provides passenger and freight access to key industrial and commercial areas, including Perth Airport, the Kewdale intermodal facility, and the Kewdale, Forrestdale and Welshpool strategic industrial areas.

From 2013 to 2016, 80% of total crashes on the Tonkin Highway were rear-end incidents. This is well above Perth's metropolitan average of 45%. In 2017–18, the highway (south of Great Eastern Highway) carried over 98,000 vehicles per working weekday in both directions, 11% of which were heavy vehicles.

Continued urban and industrial growth will exacerbate the congestion and safety issues along the south-east corridor.

Some of this growth is expected to occur in Byford, at the southern end of the corridor, where the population is forecast to grow by 9% per annum to 2026.

Together, strong demand for transport and a reliance on private vehicles will increasingly strain the transport network and could lead to higher levels of congestion and poor safety outcomes.

With improved transport options, there is an opportunity for higher density and mixed-use development in these areas to serve the growing population.

Proposed initiative

Potential initiatives to reduce congestion and improve road safety include road widening, grade separations at major intersections, potentially extending the Tonkin Highway south to provide transport access to rapidly growing residential areas, and improved freight connections to Fremantle Port. It could also include extending the existing rail line to Byford to continue supporting its urban development.

The Western Australian Government is proposing a multi-modal approach to address the problems on the corridor:

- Upgrade the section of Tonkin Highway between Collier Road and Great Eastern Highway (known as the Tonkin Highway Gap).
- Construct interchanges south of Roe Highway (at Hale Road, Welshpool Road East, and Kelvin Road).
- Construct a future extension of Tonkin Highway to the Byford area in the south.
- Extend the Armadale Rail Line to service the Byford area, which is being explored through the METRONET rail program.

These potential proposals should be subject to detailed assessment of their costs and benefits, and in particular, how they work together as an integrated program.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Land transport access between Karratha and Tom Price

Location

Karratha and Tom Price, WA



Geography

Developing regions and northern Australia

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

Western Australian Government

Date added to the IPL

February 2019



Problem

The Karratha-Tom Price Road links the key activity centres of Karratha and Tom Price, and provides access and connectivity to remote communities (including local Aboriginal and Torres Strait Islander communities), tourists, and businesses in the area. The road is currently unsealed for 60% of its 276 km length. The 2015 *Northern Australia Audit* identified that the road has one of northern Western Australia's highest traffic volumes and growth rates.

The unsealed condition of the Karratha-Tom Price Road constrains mining, freight and tourism opportunities in the region, as well as contributing to a high road crash toll.

The 2019 *Australian Infrastructure Audit* noted that lower levels of infrastructure service in remote areas can reinforce social and economic inequalities.

The Audit also identified the Karratha-Tom Price Road as having double-digit growth rates over the preceding nine years. The scale of the problem could therefore be expected to increase significantly over time.

Proposed initiative

Providing a sealed road that is resistant to weather events will improve access for local/remote communities and businesses throughout the year. It will also improve the potential to develop new mines in the area and provide capacity for increased road volumes and opportunities for increased tourism activity. It would also provide a shorter connection from Paraburdoo to Karratha via Tom Price.

The *Infrastructure Priority List* also includes the need to improve road access to remote Western Australian communities as a Priority Initiative.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

South West Interconnected System transformation

Location
South West WA

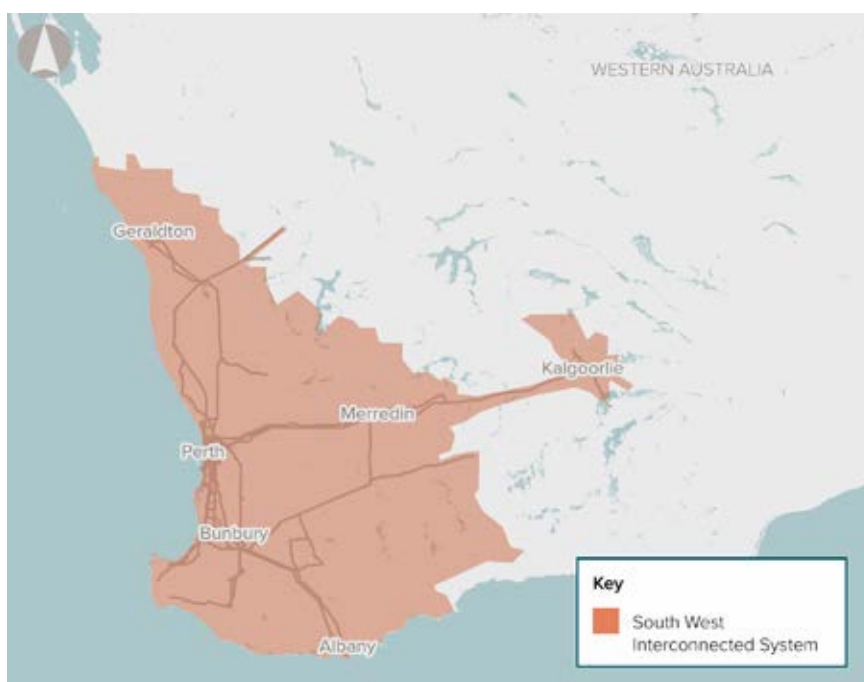
Geography
Smaller cities and regional centres

Category
Efficient Markets

Problem timeframe
Near term (0–5 years)

Proponent
Western Australian Government

Date added to the IPL
February 2020



Problem

Western Australia's main electricity network, the South West Interconnected System (SWIS), serves most of the state's population, with more than 1.1 million customers.

The SWIS is geographically and electrically isolated, with no interconnections to other transmission systems. It was planned and developed around centralised, large-scale, dispatchable generation.

Major investment in network infrastructure and firming capacity is now required to meet the challenges (and opportunities) associated with integrating significant levels of utility-scale renewables and distributed energy resources. The Australian Energy Market Operator has warned that, without planning for and responding to these challenges, the SWIS will be at risk of experiencing widespread outages within the next five years.

Proposed initiative

The initiative involves network, generation and storage investment in the SWIS, including:

- implementing energy storage and other energy-generating technologies to maintain system security
- replacing end-of-life network infrastructure in areas with low customer density
- investing in transmission infrastructure to link generation in renewable energy zones to existing demands, and support new demands and security of supply at the fringes of the grid.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Liquefied natural gas research facility

Location

Perth, WA

Geography

Fast-growing cities

Category

Opportunity for Growth

Opportunity timeframe

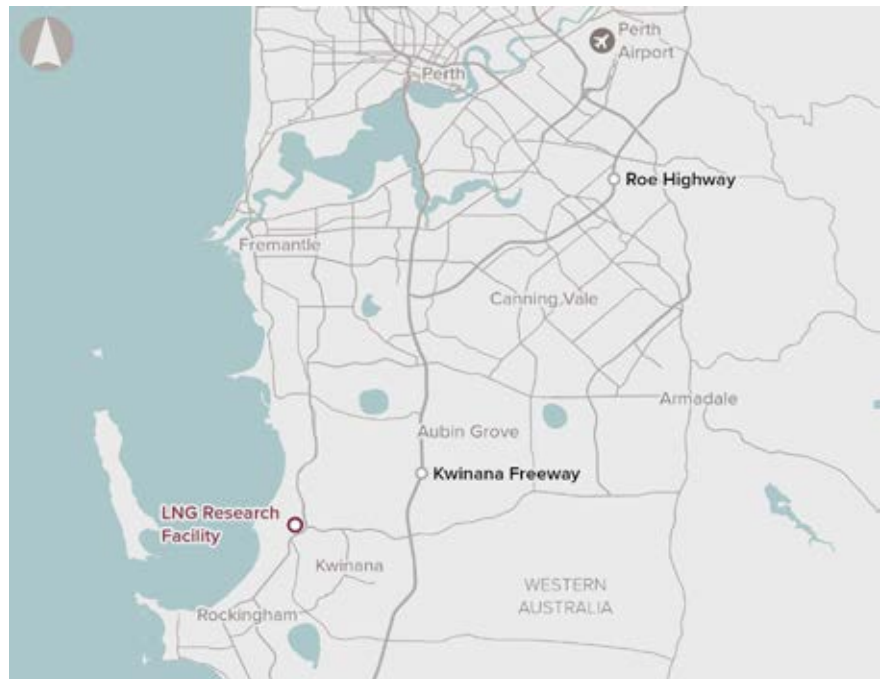
Near term (0–5 years)

Proponent

Western Australian Government

Date added to the IPL

February 2020



Opportunity

Australia is now one of the world's largest exporters of liquefied natural gas (LNG), with an estimated value of over \$50 billion in 2018–19. However, the cost of producing LNG in Australia is nearly twice that of comparable countries.

There are multiple reasons for the high production cost of Australian LNG, including remote resource locations and a relatively small population.

However, the risks of testing unproven solutions at a commercial scale within the LNG sector have contributed to persistent underinvestment in research and development, a slow rate of new technology adoption and a reliance on overseas technology providers, potentially stifling domestic innovation.

The 2019 *Australian Infrastructure Audit* found that Australia could provide global leadership and innovation in the energy sector by leveraging its natural resources and high-quality research institutions.

Proposed initiative

The initiative is for a national facility to develop and test new technologies with the potential to improve operational performance, as well as potentially increase process reliability and reduce production costs.

These improvements could have a range of benefits, including reducing methane emissions, increasing helium recovery and sales, and accelerating workforce training conducted in a live environment. The facility is likely to operate as a cooperative research centre, with potential opportunities for open-access to subject matter experts.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Port Hedland port capacity

Location
Port Hedland, WA

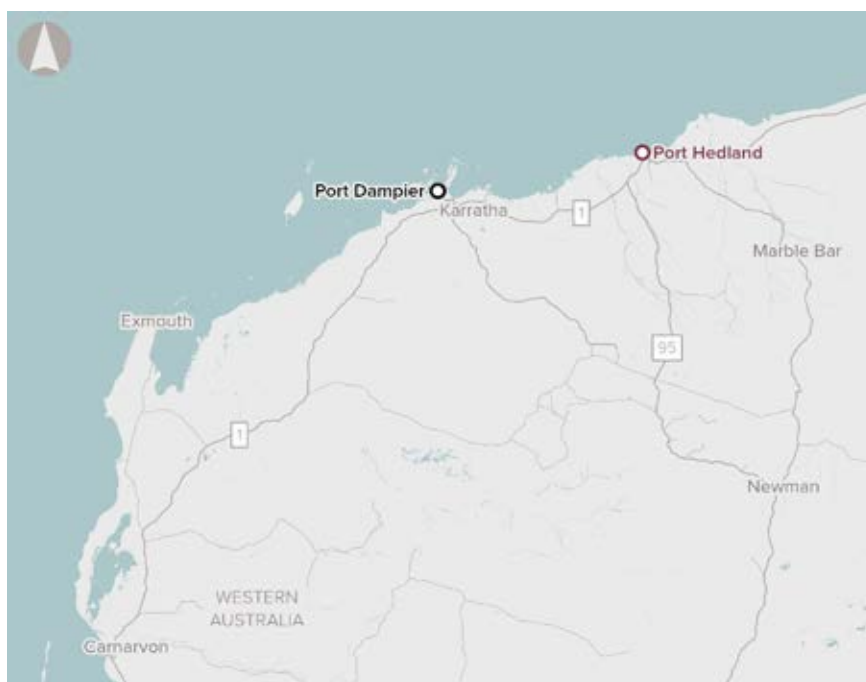
Geography
Smaller cities and regional centres

Category
Opportunity for Growth

Opportunity timeframe
Medium term (5–10 years)

Proponent
RDA Pilbara

Date added to the IPL
February 2020



Opportunity

Growing demand for lithium to meet the requirements of the consumer electronics industry, electric vehicles and energy storage industries has encouraged the development of several spodumene (lithium) projects in Western Australia's Pilbara region.

Pilbara beef and agri business industries in the region are also forecast to grow exports markets.

This growth, together with increasing general cargo demand, will cause the port of Port Hedland to approach capacity.

There is also a broader opportunity to provide more direct import and export freight facilities in the Pilbara region, rather than trucking freight to and from Perth.

The 2019 *Australian Infrastructure Audit* identifies the opportunity for further economic growth in Northern Australia through natural resources, such as rare earth materials including lithium.

Proposed initiative

The initiative is for increasing port capacity at Port Hedland, which will need to be considered in the context and system of ports in the Pilbara.

Options include making better use of the existing port infrastructure, major upgrades to port facilities or developing new port infrastructure. It could also include developing new land for port activities and landside improvements, such as a logistics hub or road access upgrades.

The role of port-user charging should be considered as part of the funding options for the initiative.

Next steps

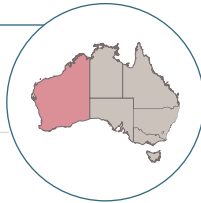
Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Road access improvements for remote WA communities

Location

Remote areas of WA



Geography

Small towns, rural communities and remote areas

Category

Remote Infrastructure

Problem timeframe

Near term (0–5 years)

Proponent

Western Australian Government

Date added to the IPL

February 2016



Problem

There are approximately 270 remote communities in Western Australia, many of which are in the Kimberley region, 2,000 km from Perth. According to the Australian Bureau of Statistics, approximately 35,000 people live in remote areas of Western Australia. Many of these areas have limited transport access and poor freight connectivity. Existing roads are generally of low quality and some freight routes are unsealed. This:

- constrains access to employment, health and education services
- presents safety issues
- increases the costs of transporting goods
- reduces resilience to flooding, particularly during the wet season.

The 2019 *Australian Infrastructure Audit* noted that lower levels of infrastructure service in remote areas can reinforce social and economic inequalities, particularly for Aboriginal communities in the area. The Audit noted that connecting remote communities to the rest of the country is vital to their lives and economies.

Proposed initiative

The initiative proposes a program of works to improve road access to remote Western Australian areas. This could consider:

- providing higher-standard gravel roads
- sealing gravel roads, such as the Karratha-Tom Price Road
- bridge and floodway improvements, such as along the Great Northern Highway and Brown's Range Access Road
- improvements to remote and regional airstrips.

The Brown's Range Access Road proposal seeks to address many of the identified problems by:

- upgrading and sealing the floodway across Sturt Creek
- upgrading the sheeting on the black soil plain sections
- upgrading of creek crossings in the Duncan Road range section.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Adelaide North–South Corridor upgrade (remaining sections)

Location
Adelaide, SA



Geography
Smaller cities and regional centres

Category
Urban Congestion

Problem timeframe
Near term (0–5 years)

Proponent
South Australian Government

Date added to the IPL
February 2016



Problem

Adelaide's 78 km North–South Corridor is a key freight and commuter route between Gawler in the north and Old Noarlunga in the south.

Sections of the North–South Corridor that have not been upgraded are subject to slow travel-times and reduced travel time reliability. The 2019 *Australian Infrastructure Audit* found that South Road, which is part of the North–South Corridor, is projected to have a delay cost of \$134 million in 2031. North–south traffic congestion is not limited to South Road – it is also evident along parallel routes, such as Marion Road (projected delay cost of \$62 million in 2031) and Goodwood Road (projected delay cost of \$36 million in 2031).

South Road is currently optimised for north–south travel in Adelaide, given its role as part of the National Land Transport Network and as a prioritised freight corridor. As such, it can impede east–west traffic movements, potentially increasing travel times in those directions.

Proposed initiative

This initiative focuses on the remaining unfunded sections of the north–south corridor, including upgrades to: Anzac Highway to Darlington; River Torrens to Anzac Highway; and Regency Park to Torrens Road.

When completed, the North–South Corridor will be the major transport spine for Adelaide's north–south traffic over a total distance of 78 km.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

AdeLINK tram network

Adelaide tram network expansion

Location

Adelaide, SA

Geography

Smaller cities and regional centres

Category

Urban Congestion

Problem timeframe

Medium term (5–10 years)

Proponent

South Australian Government

Date added to the IPL

February 2016



Problem

The 2019 *Australian Infrastructure Audit* found that the performance of urban roads and urban public transport in Adelaide is a key challenge for South Australia.

The Audit estimated that the cost of delay on Adelaide's urban transport network was \$1.4 billion in 2016 and would grow to \$2.6 billion in 2031 in the absence of investments or other changes beyond those already funded.

The major public transport destination in Adelaide is the CBD, with most public transport use being on buses. Public transport use in Adelaide is significantly lower than in Sydney, Melbourne and Brisbane. In Adelaide, the proportion of passengers using public transport for journeys to work is just under 9%, whereas it is 11.6% in Brisbane, 15.6% in Melbourne and 22.8% in Sydney.

Adelaide's recent employment growth has been centred on the inner and middle suburbs, whereas population growth has been strongest in the middle and outer suburbs. Existing public transport services do not support urban density. A continuation of existing land use patterns will result in greater reliance on and use of private passenger vehicles, in turn leading to further road congestion and delays at the expense of economic efficiency.

Proposed initiative

The initiative is a major expansion of the tram network in Adelaide, creating a tram network around the CBD and inner suburbs. The proposed link to Port Adelaide would entail conversion of existing diesel heavy rail to a modern electric light rail service, which would integrate with land use changes and facilitate increased densification.

The completed initiative would constitute tram services across inner Adelaide and the CBD, including:

- to Outer Harbour, Port Adelaide, Semaphore, Grange and West Lakes
- to Adelaide Airport and Henley Beach
- to Unley and the south
- to Norwood and Magill Campus
- to Prospect and the north
- a tram loop around the CBD.

The South Australian Government has committed to establishing the South Australian Public Transport Authority to improve public transport services. It has also committed Infrastructure SA to analysing options for extensions to tram services, especially in the Adelaide CBD.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Spencer Gulf crossing capacity

Location

Port Augusta, SA



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

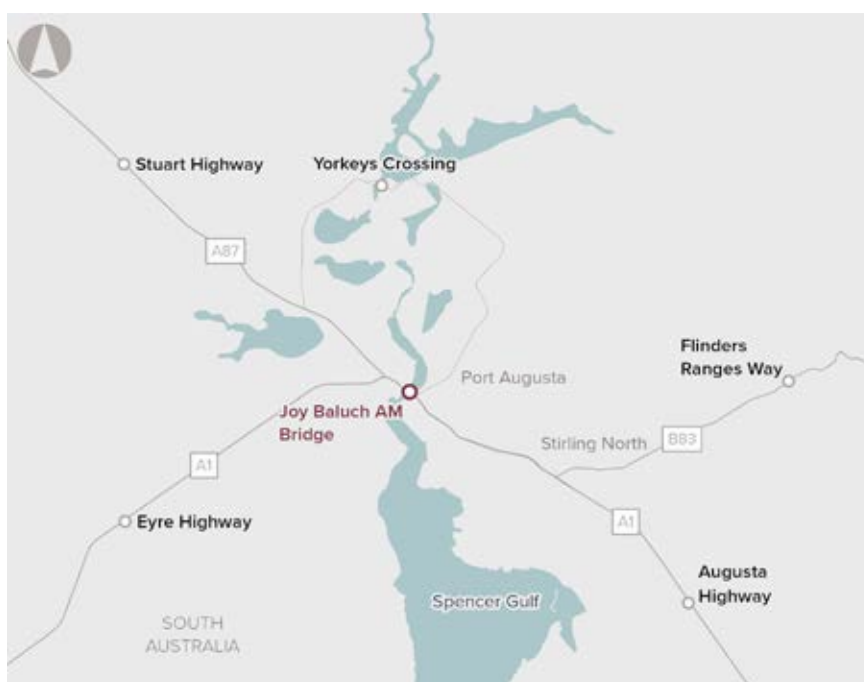
Near term (0–5 years)

Proponent

South Australian Government

Date added to the IPL

February 2019



Problem

The Joy Baluch AM Bridge crosses the northern end of the Spencer Gulf at Port Augusta and forms part of the National Land Transport Network. Constraints on the existing crossing include mass limits for commercial vehicles, poor resilience to incidents and limited throughput for vehicles. The current configuration of the bridge is one lane each way, with a speed limit of 40 km/h.

Over 17,000 vehicles use the bridge each day, including national highway traffic from south-eastern Australia to the Northern Territory and Western Australia. It also provides important heavy vehicle access to the Eyre Peninsula and western and far-north mining provinces. While Yorkeys Crossing provides an alternative route to the north, it is unsealed and can be closed in wet weather.

Addressing these deficiencies could allow High Productivity Vehicles to cross the Spencer Gulf and improve freight efficiency. It could also improve safety for pedestrians, cyclists and passenger vehicles, as well as improve traffic flows.

Proposed initiative

The initiative involves improving the crossing capacity of the Spencer Gulf at Port Augusta. This could be achieved by developing alternative routes, upgrading the existing Joy Baluch AM Bridge or by constructing a new crossing.

Next steps

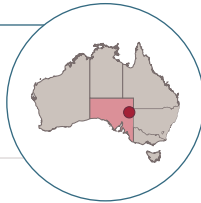
Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Strzelecki Track upgrade and mobile coverage

Location

Lyndhurst to
Innamincka, SA



Geography

Small towns, rural communities
and remote areas

Category

National Connectivity

Problem timeframe

Near term (0–5 years)

Proponent

South Australian Government

Date added to the IPL

February 2016



Problem

The Strzelecki Track was identified in the 2019 *Australian Infrastructure Audit* as a key freight route. It is the only viable land route between Adelaide and the Cooper Basin, and will be increasingly important to service the expanding oil and gas industry in the Cooper and Eromanga Basins, and the pastoral industry in the north-east of South Australia. The Audit also recognises that it is an important route for providing access for communities and tourism.

The Strzelecki Track is unsealed and suffers from potholes, corrugation and a lack of drainage. It is not sufficiently wide for triple road trains.

The road's condition and alignment reduce travel speed, damage vehicles, cause unpredictable closures due to flooding, and result in road safety risks. The road is not currently suitable for the most productive heavy vehicles.

Proposed initiative

The initiative proposes to upgrade 426 km of the Strzelecki Track between Lyndhurst and Innamincka, and 26 km of the Nappa Merrie Access Road. This will provide an upgraded connection between South Australia and Queensland. Improvements to mobile phone coverage along the route are also proposed.

Next steps

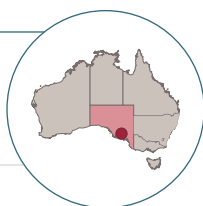
Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

South Australian regional bulk port development⁴

Location

Spencer Gulf region,
SA



Geography

Small towns, rural communities
and remote areas

Category

National Connectivity

Problem timeframe

Medium term (5–10 years)

Proponent

South Australian Government

Date added to the IPL

February 2016



Problem

To date, South Australian bulk export volumes, including grain, mining and resource operations have been accommodated within existing ports and landside transport infrastructure. The 2015 *Australian Infrastructure Audit* noted that expansion of a number of regional ports, as well as development of new high-capacity ports, could support further increases in exports, especially of mineral resources and agricultural products.

For mineral producers, there is a particular requirement to develop deep water ports with the capacity to accommodate the 'capesize' vessels that are essential to compete in global iron ore markets.

The lack of a clear path to market (including high capacity, deep ports) can be a barrier to attracting capital to new mining projects or agricultural production. However, it is difficult to attract capital for new port projects without committed export demand from new projects.

Proposed initiative

The initiative would consider options for the development of bulk commodity port capacity in the Spencer Gulf region. There are a range of sites for ports and associated investment/operating models that could meet potential demand:

- The existing Whyalla port in the northern Spencer Gulf.
- The proposed Cape Hardy port on the central eastern Eyre Peninsula, proposed to be developed by Iron Road Limited.
- The proposed Port Spencer on the central eastern Eyre Peninsula.
- The existing Port Bonython in the northern Spencer Gulf.
- The proposed Myponie Point Bulk Commodity export facility on the northern Yorke Peninsula.
- Other shallow harbour ports and trans-shipment vessels can also be used to move bulk commodities, such as grain, to larger vessels anchored in deeper waters off the Spencer Gulf.

Next steps

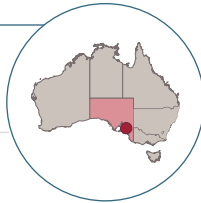
Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

⁴ This initiative was previously referred to as 'South Australian regional mineral port development' but expanded in February 2019.

Priority Initiatives

Sturt Highway High Productivity Vehicle capacity enhancement, including Truro bypass

Location
Truro, SA



Geography
Small towns, rural communities and remote areas

Category
National Connectivity

Problem timeframe
Medium term (5–10 years)

Proponent
South Australian Government

Date added to the IPL
February 2016



Problem

The road transport system is the only means of transporting goods in most regional areas of South Australia. However, the existing road network does not allow for the use of High Productivity Vehicles. The absence of a fully developed High Productivity Vehicle network is constraining productivity and the realisation of opportunities in the South Australian economy.

High Productivity Vehicles have the potential to carry over 30% more freight per vehicle, resulting in fewer vehicles required to move the same freight task. This reduces the costs to transport operators and end users, and reduces the number of heavy vehicles on the road, improving the safety, capacity and efficiency of transport services.

The Sturt Highway is part of the National Land Transport Network, providing the main route between Adelaide and Sydney. Freight growth on the Sturt Highway is expected to increase at 1.6% per year. Increases in freight vehicle numbers will reduce the capacity of the Sturt Highway, resulting in increased travel time and costs. This negatively affects business competitiveness and productivity.

Proposed initiative

Realignment of the Sturt Highway through the Truro Hills, including a bypass of the town of Truro, to improve safety and allow use of High Productivity Vehicles on the highway.

Next steps

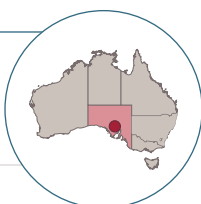
Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Gawler Craton rail access

Location

Gawler Craton minerals region, SA



Geography

Developing regions and northern Australia

Category

National Connectivity

Problem timeframe

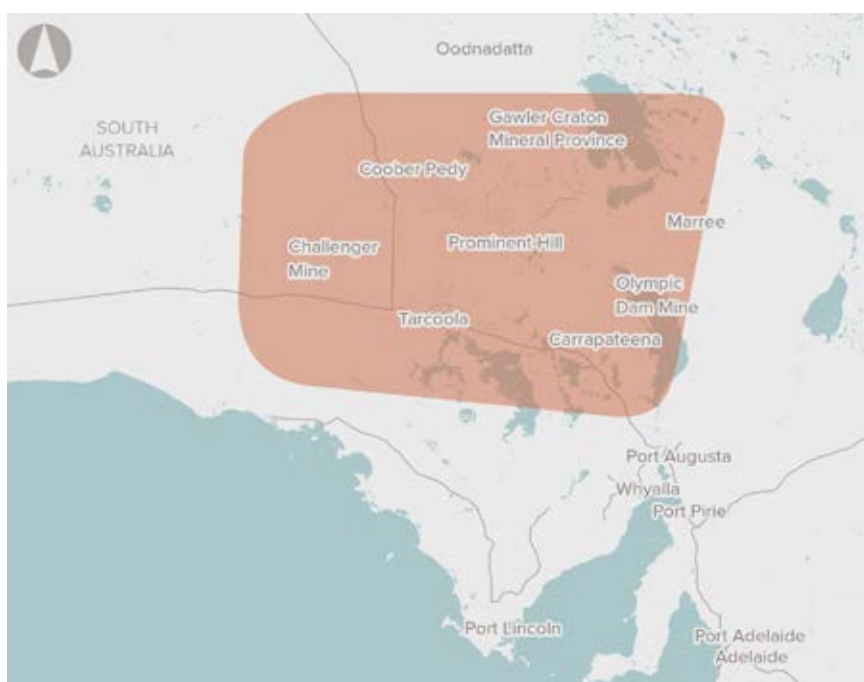
Longer term (10–15 years)

Proponent

South Australian Government

Date added to the IPL

February 2016



Problem

The Gawler Craton area is a remote mineral region north-west of the Eyre Peninsula in South Australia. The region, which extends into the Woomera Prohibited Area, contains extensive copper, gold, silver and iron ore deposits.

The remoteness of the mineral deposits within the northern part of South Australia is a challenge for exploration and development. Development of a railway could provide a significant transport connection to the Prominent Hill, Olympic Dam and Carrapateena mines, and open up other potential reserves in the area, including Wirrda Well, Acropolis, Vulcan, Titan and Millers Creek.

Geological surveys have indicated that potential deposits in the Woomera Prohibited Area and its surrounds are valued at up to \$35 billion, indicating that a significant uplift in the region's mineral exports could be attainable.

Proposed initiative

The initiative proposes that a third party builds, owns and operates a 350 km railway in the Gawler Craton province, linking to the existing interstate rail network. Future connections to other potential mining projects will be possible.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Derwent River crossing capacity

Location

Bridgewater, Tas

Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

Medium term (5–10 years)

Proponent

Tasmanian Government

Date added to the IPL

February 2016



Problem

The Bridgewater Bridge, which is part of the National Land Transport Network, does not meet contemporary loading and design standards. The bridge provides a single lane in each direction, and has a posted speed limit of 60 km/h.

The existing bridge and causeway are near the end of their serviceable lives. The bridge has high maintenance costs due to its age, and future refurbishments will be increasingly costly and limited in effect.

Proposed initiative

The initiative involves the development of an alternative Derwent River crossing.

Next steps

The business case was evaluated by Infrastructure Australia in June 2019.

The project is undergoing further planning and assessment with support from the Australian Government and Tasmanian Government.

Priority Initiatives

Burnie to Hobart freight corridor improvement

Location

Burnie to Hobart, Tas



Geography

Smaller cities and regional centres

Category

National Connectivity

Problem timeframe

Medium term (5–10 years)

Proponent

Tasmanian Government

Date added to the IPL

February 2016



Problem

The road and rail corridor connecting Burnie and Hobart is part of the National Land Transport Network. It connects regional producers to a number of Tasmania's ports, and producers depend on it to bring goods to market at competitive prices. The corridor is forecast to carry 35% more freight by 2034–35, compared to 2014–15 volumes.

Given the corridor's importance to Tasmania's transport network, there is a need to ensure its future efficiency and reliability.

In 2017, the Tasmanian Government released the Burnie to Hobart Freight Corridor Strategy to guide future planning and investment along the corridor, and to ensure freight performance standards are maintained and enhanced over the long term, in line with freight demand, user needs and emerging challenges.

Proposed initiative

The program initiative involves a range of road and rail improvements to the corridor, such as intersection upgrades or lane duplications. The Tasmanian Government is prioritising and preparing business cases for these investments, which would support the key outcomes of the Strategy. Those outcomes are to develop a freight corridor that:

- is planned, managed and delivered to support broader freight system and supply chain outcomes
- supports efficiency, access and modal choice for freight users
- responds to and appropriately manages freight demand, considering freight volumes, user needs and the ability of road and rail to cost-effectively support a freight task
- is based on transparent investment frameworks and project business cases, supporting a coordinated evaluation of freight investment across the corridor
- reflects contemporary freight analysis and information, including from key freight users.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Tasmanian sewerage infrastructure upgrades

Location

Hobart, Launceston and Devonport, Tas



Geography

Smaller cities and regional centres

Category

Efficient Markets

Problem timeframe

Near term (0–5 years)

Proponent

Tasmanian Government

Date added to the IPL

February 2016



Problem

The major population centres of Hobart, Launceston and Devonport are serviced by a large number of poorly performing sewage treatment plants, a legacy of past ownership and delivery arrangements.

Non-compliant and ageing infrastructure is contributing to public health and environmental outcomes that do not meet contemporary standards. These outcomes present a threat to Tasmania's status as a 'clean green state' renowned for its natural resources and as a preferred tourist destination. Furthermore, a number of sewage treatment plants are located on prime waterfront land in densely populated areas.

The 2019 *Australian Infrastructure Audit* notes imminent renewals of ageing assets bring an opportunity to rethink how water and wastewater services are delivered, and to use technology to improve efficiency and levels of service. Renewals could help to avoid over-investment in large, long-lived traditional water and sewerage assets, and make the system more adaptable to future trends and shocks.

Proposed initiative

The initiative proposes to rationalise existing sewage treatment plants and upgrade and operate a reduced number of sewage treatment plants in Hobart, Launceston and Devonport. This would provide adequate treatment capacity for future growth, minimise environmental regulatory breaches, increase levels of service and improve operational efficiencies.

TasWater has released its Long Term Strategic Plan for the period 2018–2037, which includes rationalisation of treatment plants in Launceston and Devonport. The Plan considers individual plant upgrades or optimisation projects for Hobart.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Tasmanian irrigation schemes

Tranche 3

Location

North Tasmania



Geography

Small towns, rural communities and remote areas

Category

Opportunity for Growth

Opportunity timeframe

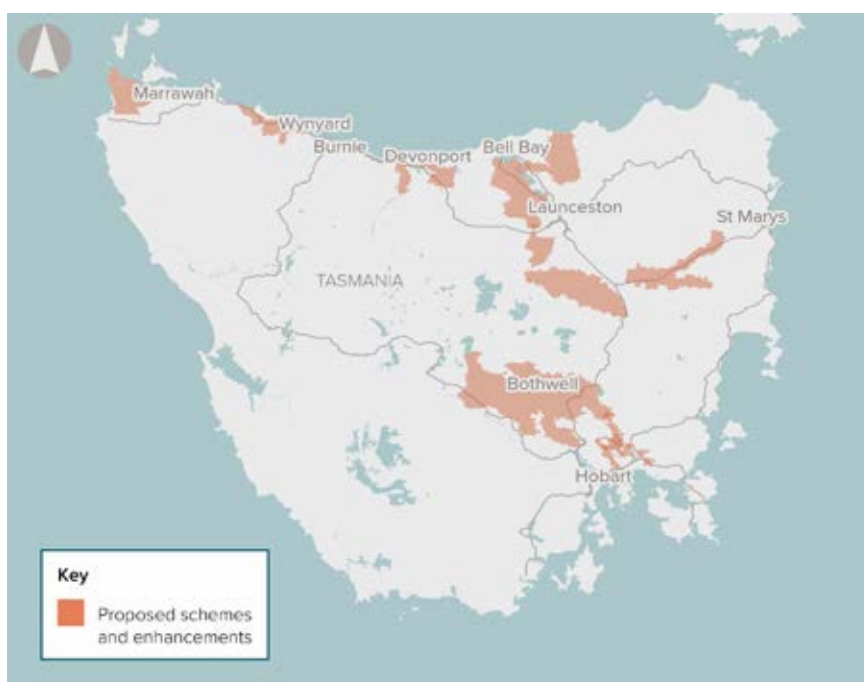
Medium term (5–10 years)

Proponent

Tasmanian Government

Date added to the IPL

February 2019



Opportunity

Water resources in Tasmania are not distributed seasonally or geographically as required for productive agricultural purposes.

The development of sustainable and well-managed water capture and distribution for use in irrigated agriculture provides the opportunity for dryland farms and landholders to expand and diversify their businesses by switching from dry-land, lower-value enterprises to higher-value enterprises such as fruit or viticulture. This can improve both the operational performance and efficiency of existing irrigation and the productive capacity of Tasmania's agriculture sector more broadly.

Proposed initiative

This program initiative is for a potential range of improvements to enable the expansion of the irrigable area of Tasmania and support the distribution of water to the highest productive use. These include constructing additional irrigation schemes and connecting, augmenting and enhancing existing irrigation schemes.

The individual components of the program are still subject to investigation, including their costs and benefits, through business case development.

The second tranche of Tasmanian irrigation schemes were previously identified as a Priority Initiative on the *Infrastructure Priority List*, and are currently under delivery.

Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Canberra public transport improvements

Location

Belconnen, Queanbeyan to central Canberra, ACT

Geography

Smaller cities and regional centres

Category

Urban Congestion

Problem timeframe

Medium term (5–10 years)

Proponent

Australian Capital Territory Government

Date added to the IPL

February 2016



Problem

Canberra’s limited public transport network capacity, coupled with high rates of private vehicle reliance, is causing the transport network to suffer from increasing congestion. Congestion is likely to be exacerbated by projected significant population growth. This congestion results in adverse economic impacts through increased travel times and higher vehicle operating costs.

Proposed initiative

The initiative proposes to develop bus transit corridors connecting Belconnen and Queanbeyan to central Canberra. These corridors will provide an integrated transport solution, reducing traffic congestion and providing transport network capacity for future economic development in the region.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia’s Assessment Framework).

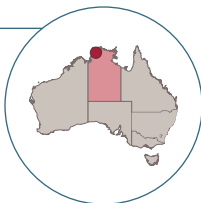
Priority Initiatives

Enabling infrastructure and essential services for remote NT communities

Wadeye, Tiwi Islands, Jabiru

Location

Remote locations in the Northern Territory: Jabiru region/Arnhem Highway, Wadeye region/Port Keats Road, Tiwi Islands



Geography

Small towns, rural communities and remotes areas

Category

Remote Infrastructure

Problem timeframe

Near term (0–5 years)

Proponent

Northern Territory Government

Date added to the IPL

February 2016



Problem

This initiative addresses infrastructure problems in three remote regions of the Northern Territory:

- Jabiru, and the Arnhem Highway, which connects Jabiru to Darwin
- Wadeye (Port Keats) and other nearby remote communities, and the Port Keats Road, which connects Wadeye to Darwin
- The Tiwi Islands.

These remote communities lack the infrastructure required for sustainable economic and social development. For example:

- key road corridors, such as the Arnhem Highway and the Daly River Road, can be severely impacted by floods during the wet season, severing land transport access for remote communities for extended periods of time
- essential services infrastructure, such as water storage and sewerage management, is not always adequate for the population it supports
- demand for community infrastructure, such as youth centres and public housing, can often outstrip the available supply.

These infrastructure deficiencies constrain the economic development of these remote regions and can impose significant social costs on the local populations.

Proposed initiative

This initiative proposes a portfolio of upgrades to road infrastructure, as well as a range of essential services and community infrastructure upgrades to support economic and social development:

- road upgrades to improve the accessibility and flood resilience of key road networks
- upgrades to provide new or improved water storage facilities and wastewater management facilities in a number of remote population centres
- upgrades to provide additional public housing and upgrades to social infrastructure, such as community centres and youth centres.

The Adelaide River Floodplain upgrade on the Arnhem Highway is under delivery.

Next steps

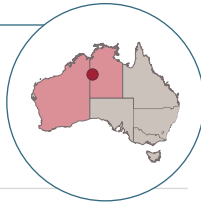
Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Tanami Road upgrade

Location

Tanami Road links the Stuart Highway in the NT to the Great Northern Highway in WA



Geography

Small towns, rural communities and remotes areas

Category

Remote Infrastructure

Problem timeframe

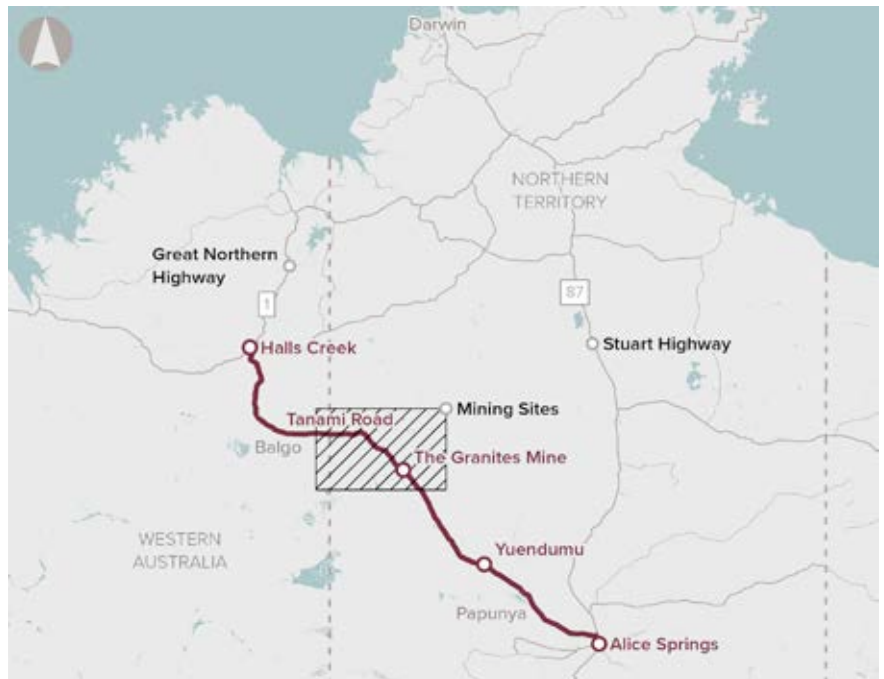
Near term (0–5 years)

Proponent

Northern Territory Government

Date added to the IPL

February 2016



Problem

The key problems identified in the region include:

- limited economic opportunities for communities in the region, including Aboriginal and Torres Strait Islander communities
- reduced opportunities for employment in remote areas
- reduced access to essential services for the Aboriginal and Torres Strait Islander communities
- limitations to development in mining, tourism and pastoral operations
- high vehicle operating costs
- poor flood immunity resulting in lengthy road closures
- broader risks to health and safety for road users arising from poor road alignments, excessive corrugations and poor visibility.

A key cause of these problems is the poor quality of the road. Over two-thirds of Tanami Road is unsealed with substantial sections being unformed. This surface has led to the development of significant ruts and corrugations from heavy vehicles.

This initiative aligns with the findings from the 2019 *Australian Infrastructure Audit*, as well as with other government priorities, such as *Closing the Gap* policies. Further, the initiative was identified as an infrastructure gap in the 2015 *Northern Australia Audit*.

Proposed initiative

Upgrade and improve flood immunity and resilience for the Tanami Road between the Stuart Highway north of Alice Springs, and the Great Northern Highway at Halls Creek.

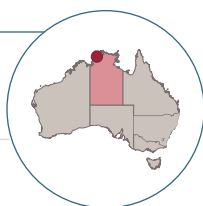
Next steps

Proponent to complete business case development (Stage 3 of Infrastructure Australia's Assessment Framework).

Priority Initiatives

Darwin region water supply infrastructure upgrades

Location
Darwin, NT



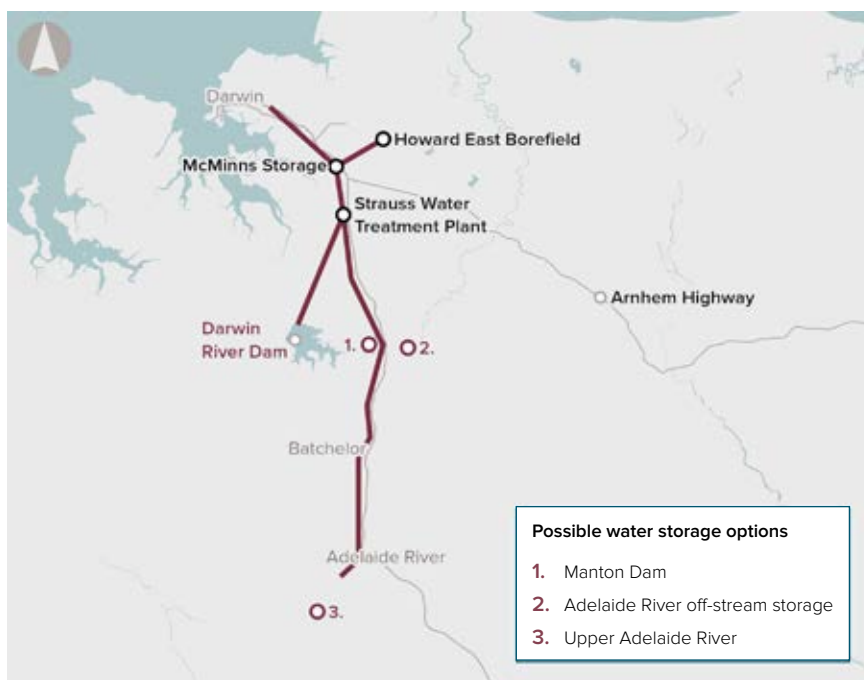
Geography
Smaller cities and regional centres

Category
Resilience

Problem timeframe
Medium term (5–10 years)

Proponent
Northern Territory Government

Date added to the IPL
February 2016



Problem

Population growth and industrial development is driving increases in demand for water in the Darwin region.

The 2015 *Northern Australia Audit* found that an additional water source for Darwin is essential to support further growth of the city. At the same time, climate change is forecast to impact on supply by increasing evaporation and transpiration, which will lead to reduced inflows to reservoirs and decreasing yields.

Failure to expand Darwin's water supply will increasingly constrain population and economic growth. It is also likely to impact on business and investor confidence.

Proposed initiative

The Darwin Region Water Supply Strategy details the Northern Territory Government's plan to balance demand for water with supply capacity over time. In the near to medium term (0–10 years), the Strategy identifies the return to service of Manton Dam as an operational source of drinking water for the Darwin region water supply. In the subsequent period (10–20 years), the Adelaide River off-stream storage scheme will be developed to meet future growth.

This initiative should be considered as part of the National Water Reform Plan recommended in the 2016 *Australian Infrastructure Plan*. It is indicative of the requirement to ensure secure water supply to support further urban, industrial and/or agricultural development in some parts of the country – including in response to increasing water demand associated with population and economic growth, and increasing variability in water supply.

Next steps

Proponent to identify initiatives and develop options (Stage 2 of Infrastructure Australia's Assessment Framework).

Appendices

Appendix A

Projects under construction or complete

The following projects were previously listed on the *Infrastructure Priority List*. They graduated from the Priority List as construction on the project began or because all major construction contracts were awarded.

State	Project	Year removed from list
New South Wales	The Northern Road Upgrade	2020
	WestConnex	2019
	Moorebank Intermodal Terminal	2017
	Bringelly Road Upgrade Stage 2	2017
	NorthConnex	2016
	Bringelly Road Upgrade Stage 1	2016
Victoria	Monash Freeway Upgrade Stage 2	2020
	Ballarat Line Upgrade	2020
	Murray Basin Rail Project	2017
	Melbourne Metro	2017
	CityLink Tullamarine Widening Project	2016
Queensland	M1 Pacific Motorway – Mudgeeraba to Varsity Lakes	2018
	M1 Pacific Motorway – Gateway Motorway merge upgrade	2017
	Ipswich Motorway Rocklea–Darra Stage 1C	2017
	Bruce Highway Upgrade – Mackay Ring Road Stage 1	2017
	Bruce Highway Upgrade – Cooroy to Curra Section C	2017
	Bruce Highway Upgrade – Caloundra Road to Sunshine Motorway	2017
	Gateway Motorway Upgrade North	2016

State	Project	Year removed from list
Western Australia	METRONET – Thornlie-Cockburn Link	2020
	METRONET – Yanchep Rail Extension	2020
	Forrestfield Airport Link	2017
	Armadale Road Upgrade	2017
	Mitchell Freeway extension – Burns Beach Road to Hester Avenue	2016
South Australia	Gawler Rail Line Electrification and Modernisation Project	2020
	Adelaide's North–South Corridor – Regency Road to Pym Street	2020
	North–South Corridor – Darlington Upgrade Project 2017	2017
	Adelaide–Tarcoola Rail Upgrade Acceleration	2017

Appendix B

Business cases under assessment

Jurisdiction	Business case
New South Wales	Port Botany Rail Line Duplication (including Cabramatta Passing Loop) ¹
	More Trains More Services Stage 2
Victoria	Gippsland rail corridor upgrade
Queensland	Haughton River Pipeline Stage 2
	Bruce Highway – Townsville Ring Road Stage 5
Western Australia	METRONET – High Capacity Signalling Project
	METRONET – Morley-Ellenbrook Line

¹ Proponent is Australian Rail Track Corporation

This information is correct as at 3 February 2020.

For up-to-date information on business cases under assessment, please see the Infrastructure Australia website: www.infrastructureaustralia.gov.au

Appendix C

Submissions relating to program initiatives

Submissions received in relation to *Town and city water security*

Proponent	Submission name	Year of first submission
New South Wales		
Tweed Shire Council	Raising Clarrie Hall Dam	2020
NSW Government	Water supply and drought security	2020
NSW Government	Gwydir regional water security	2018
NSW Government	Lachlan regional water security	2018
NSW Government	Macquarie regional water security	2018
NSW Government	Albert Priest pipeline	2018
NSW Government	Water security for Cobar	2016
Queensland		
Cairns Regional Council	Cairns region water security	2020
Southern Downs Regional Council	Diversion of Clarence River to Condamine River	2020
Southern Downs Regional Council	Stanthorpe wastewater treatment plant	2020
Southern Downs Regional Council	Potable water pipeline from Toowoomba to Warwick	2020
Qld Government	Nullinga Dam	2018
South Australia		
SA Government	Water security for Indigenous communities	2016

Submissions received in relation to *Network Optimisation Program – Rail*

Proponent	Submission name	Year of first submission
Victoria		
RDA Barwon South West Region	Maroona to Portland rail line upgrade	2020
Queensland		
Qld Government	North Coast Rail Line Action Plan	2017
South Australia		
SA Government	Integrated Public Transport Programme	2017

Submissions received in relation to *Network Optimisation Program – Roads*

Proponent	Submission name	Year of first submission
New South Wales		
Freight on Rail Group	Sydney – Cootamundra double stacking	2017
NSW Government	Easing Sydney's congestion Tranche 2	2017
NSW Government	Pinch Point Program	2015
NSW Government	Smart Motorways – Southern Cross Drive and General Holmes Drive	2015
Queensland		
Royal Automotive Club Queensland	Level crossing removal program	2018
Qld Government	Smart Mobility for South East Queensland	2015
Western Australia		
Royal Automotive Club WA (RACWA)	Grade separations of major highways & level crossing removals	2020
RACWA	Smart transport technologies	2017
South Australia		
Master Builders	Level crossing removals	2020
SA Government	Integrated Public Transport Programme	2017
SA Government	Network optimisation of the Adelaide arterial road network	2017
SA Government	Network optimisation program, including use of Intelligent Transport Systems (ITS), better use of existing infrastructure	2015
SA Government	Targeted upgrades to key intersections and roads, including inner and outer ring routes and Main North Road	2015

Submissions received in relation to the *National Freight and Supply Chain Strategy*

Proponent	Submission name	Year of first submission
National		
RDA Ipswich & West Moreton	NSW/QLD cross border transport route development	2020
Freight on Rail Group	Melbourne – Adelaide double-stacking	2017
Phillip Laird	Strengthening and straightening of ARTC interstate freight track – East–West Corridor (Melbourne to Perth) and North–South Corridor (Melbourne to Brisbane) with other gauge standardisation	2015

Proponent	Submission name	Year of first submission
New South Wales		
Newcastle City Council	Lower Hunter Freight Corridor	2020
Newcastle City Council	Multi-purpose deepwater terminal (Newcastle Container Terminal)	2020
NSW Government	Parkes Special Activation Precinct	2020
Shoalhaven City Council	Beyond Nerriga	2020
Shoalhaven City Council	Freight access to Bomaderry by rail	2020
NSW Government	Foreshore Road capacity upgrades	2017
NSW Government	Sydney to Central West/Orana – road and rail corridors	2017
NSW Government	Western Sydney Freight Line construction	2017
NSW Government	Barton Highway safety improvements	2015
NSW Government	Fixing country rail	2015
NSW Government	NSW Grain Lines Upgrade Program	2015
NSW Government	Princes Motorway M1 Improvements – Bulli Tops to Picton Road, Stage 2	2015
NSW Government	Sydney Roads Freight and Growth Package	2015
Victoria		
Mitchell Shire Council	Beveridge Intermodal Freight Terminal	2020
City of Wyndham	Western Intermodal-Interstate Freight Terminal	2017
Freight on Rail Group	Port of Melbourne holding roads	2017
Royal Automobile Club of Victoria (RACV)	Completion of the duplication of the Princes Highway East to Sale	2015
RACV	Completion of the duplication of the Princes Highway West to Colac	2015
RACV	Completion of the duplication of the Western Highway to Stawell, to provide a minimum 4-star highway	2015
RACV	Shepparton Bypass, to provide at least a 4-star bypass on the major highway route between Melbourne and Brisbane	2015
RACV	Traralgon Bypass, to a 4-star standard as part of the ongoing upgrade of Princes Highway East	2015
Vic Government	High Productivity Freight Vehicles – bridge strengthening	2015

Proponent	Submission name	Year of first submission
Queensland		
Qld Government	Inland freight route	2020
Southern Downs Regional Council	Warwick Heavy Vehicle Bypass	2020
Freight on Rail Group	Mount Lindesay Road upgrade	2017
Freight on Rail Group	North Coast Line crossing loop extensions	2017
Freight on Rail Group	North Coast Line flood resilience	2017
Freight on Rail Group	Northern Brisbane freight corridor planning and corridor preservation	2017
Freight on Rail Group	Rockhampton and Bundaberg deviations	2017
Qld Government	Warrego Highway upgrade (Ipswich to Charleville)	2017
Qld Government	Flinders and Barkly highway upgrades	2016
Western Australia		
City of Kalgoorlie-Boulder	Kalgoorlie freight rail realignment and intermodal terminal	2020
CBH Group	WA Grain Freight Rail Network	2017
City of Swan	EastLink WA (also known as the 'Orange Route')	2017
City of Swan	Hazelmere industrial area upgrades (including interchange upgrades on the Great Eastern Highway Bypass, and the Lloyd Street Bridge over Helena River)	2017
City of Swan	Midland Freight rail realignment	2017
Freight on Rail Group	Perth Metro freight rail duplication	2017
Bunbury Wellington Economic Alliance; Royal Automotive Club WA	Complete road and freight linkages to Bunbury Port	2015
South West Group	Latitude 32 Intermodal Terminal.	2015
South West Group	Rail upgrades Fremantle Port to Kewdale	2015
South Australia		
SA Government	Road and bridge upgrades to expand High Productivity Vehicle (HPV) access by addressing gaps in the road network and 'first/last mile' issues	2015
Tasmania		
Tas Government	Burnie Port Precinct Plan	2015
Australian Capital Territory		
ACT Government	ACT East-West Regional Freight Network	2020

Glossary

Term	Definition
Agglomeration	The benefits of clustering or high concentration of businesses and economic activity in a relatively small geographic area.
Appraisal	The process of determining impacts and overall merit of a proposal, including the presentation of relevant information for consideration by the decision-maker.
Appraisal period	The number of years over which the benefits and costs of an infrastructure proposal are assessed in a cost-benefit analysis. A default value of 30 operational years plus construction time is generally used for transport proposals.
Assessment Framework	<p>A publicly available document that details how Infrastructure Australia evaluates initiatives and business cases for inclusion in the <i>Infrastructure Priority List</i>. It provides structure to the identification, analysis, appraisal, and selection of initiatives and projects and advises proponents how to progress through the following five stages:</p> <ul style="list-style-type: none"> • Stage 1: Problem Identification and Prioritisation • Stage 2: Initiative Identification and Options Development • Stage 3: Business Case Development • Stage 4: Business Case Assessment • Stage 5: Post Completion Review.
Australian Infrastructure Audit	Published in August 2019, the Audit is developed by Infrastructure Australia to provide a strategic assessment of Australia's infrastructure needs over the next 15 years. It examines the drivers of future infrastructure demand, particularly population and economic growth. Data from the Audit is an evidence base for the <i>Infrastructure Priority List</i> .
Australian Infrastructure Plan	Published in February 2016, the Plan provides a positive reform and investment roadmap for Australia. Building off the evidence base of the Audit (see Australian Infrastructure Audit), the Plan sets out solutions to the infrastructure challenges and opportunities Australia faces over the next 15 years, to drive productivity growth, maintain and enhance our standard of living, and ensure our cities remain world class. The <i>Infrastructure Priority List</i> performs part of this function, highlighting the investment solutions that support the Plan. The next Plan will be published in 2021.
Base case	The state of the world without the proposed initiative or project. A cost-benefit analysis compares the base case with the project case, which is the state of the world <i>with</i> the proposed initiative or project, to determine the net impacts. (See cost-benefit analysis).
Base year	The year to which all values are discounted when determining a present value. (See discounting and discount rate).
Benefit-cost ratio (BCR)	For a proposed initiative or project, this is the ratio of the present value of economic benefits to the present value of economic costs. It is an indicator of the economic merit of a proposal presented at the completion of a cost-benefit analysis. It is commonly used to aid comparison of proposals competing for limited funds. (See cost-benefit analysis).
Business case	A document that brings together the results of all the assessments of a infrastructure proposal. It is the formal means of presenting information about a proposal to aid decision-making. It includes all information needed to support a decision to proceed with the proposal and to secure necessary approvals from the relevant government agency.
Capital cost	The initial fixed costs required to create or upgrade an economic asset and bring it into operation. This includes expenses such as the procurement of land, buildings, construction, labour and equipment.

Term	Definition
Central Business District (CBD)	The commercial and business centre of a city.
Cost-benefit analysis (CBA)	An economic analysis technique for assessing the economic merit of an infrastructure proposal by assessing the benefits, costs, and net benefits to society it would deliver. It aims to attach a monetary value to the benefits and costs wherever possible and provide a summary indication of the net benefit. (See benefit-cost ratio).
Demand management	Deliberately managing the rate of use of an infrastructure network to improve its efficiency. This can be done through a variety of methods, such as structuring pricing for electricity consumption around peak periods or promoting water reuse.
Discount rate	The interest rate at which future dollar values are adjusted to represent their present value (that is, in today's dollars). This adjustment is made to account for the fact that money today is more valuable than money in the future. Cost-benefit analysis should use real social discount rates.
Discounting	The process of converting money values that occur in different years to a common year. This is done to convert the dollars in each year to present value dollars. (See discount rate).
Evaluation summary	Infrastructure Australia's published assessment of a proponent's business case. It summarises our review of the business case in accordance with the Assessment Framework and identifies whether or not it has been included as a project on the <i>Infrastructure Priority List</i> . (See Assessment Framework).
Firming capacity	Guaranteeing supply from other energy generation sources to support intermittent power output from renewable power generation (such as wind and solar power). ¹
Financial analysis	The evaluation of the benefits and costs, measured in financial cash-flow terms, to a single entity (that is, not the community or the economy).
Gross domestic product (GDP)	A monetary measure of the market value of all the final goods and services produced in a period of time, often annually or quarterly.
High Productivity Vehicles (HPVs)	<p>A generic term used for all Performance-Based Standards (PBS) vehicles, as defined by the National Heavy Vehicle Regulator:</p> <p>'vehicles ... designed to perform their tasks as productively, safely and sustainably as possible, and to operate on networks that are appropriate for their level of performance'.²</p> <p>Various regulations apply to HPVs, depending on their PBS level (which reflects their configuration, length, and mass limits), including which roads they can access and driver licence requirements.</p>
Impact	A generic term to describe any specific effect of an initiative or project. Impacts can be positive (a benefit) or negative (a cost).
Impact timeframe	For initiatives , this indicates when the problem or opportunity is likely to have a material impact on our cities and regions.
Indicative Delivery Timeframe	For projects, this provides the proponent's indication of when the project is likely to be delivered and operational.
Infrastructure operating costs	The costs of providing the infrastructure after the project has commenced operation (for example, maintenance and administration costs of a facility).
Initiative	Potential infrastructure problems or 'early-stage' solutions for which a business case has not yet been completed. Initiatives are identified through a collaborative process between proponents and Infrastructure Australia, using the <i>Australian Infrastructure Audit</i> and other data as evidence of infrastructure needs.
Intelligent Transport Systems (ITS)	<p>ITS-Australia defines Intelligent Transport Systems as:</p> <p>'The application of modern computer and communication technologies to transport systems, to increase efficiency, reduce pollution and other environmental effects of transport and to increase the safety of the travelling public.'</p>

Term	Definition
Land use impacts	A change in the types of activities that occur in a section of land, or the intensity of those activities. Changes in activity may be caused by a change in use of the existing built form or a change in the built form itself. For example, an increase in the amount of high-density housing in the area around train station.
Maintenance	Incremental work to repair or restore infrastructure to an earlier condition or to slow the rate of deterioration. This is distinct from construction and upgrading, which seeks to extend infrastructure beyond its original condition.
Managed motorway	See smart freeway / smart motorway .
Mode share	Passengers using a particular type of transport as a percentage of all passengers in the network or region. For example, the rail mode share would be the percentage of passengers who use rail services to travel.
Nationally significant problem or opportunity	<p>The <i>Infrastructure Australia Act 2008</i> defines nationally significant infrastructure as infrastructure ‘in which investment or further investment will materially improve national productivity’.</p> <p>An infrastructure investment is nationally significant if, based on the evidence presented, the Infrastructure Australia Board is of the opinion that the investment is expected to have a material impact on national output by:</p> <ol style="list-style-type: none"> 1. addressing a problem that would otherwise impose economic, social, and/or environmental costs; or 2. providing an opportunity for realising economic, social, or environmental benefits; or 3. both addressing a problem and providing an opportunity. <p>As a guide, for the purposes of assessing submissions to the <i>Infrastructure Priority List</i>, Infrastructure Australia has applied a threshold value of \$30 million per annum (nominal, undiscounted) in measuring material net benefit, taking potential unquantified quality-of-life considerations into account. Infrastructure Australia expects potential impacts cited in submissions to be quantified and supported by evidence, but recognises that some types of social and environmental impacts may not be readily quantifiable. (See nominal prices and discounting).</p>
Net present value (NPV)	The monetary value of benefits minus the monetary value of costs over the appraisal period, with discount rates applied (See discount rates and appraisal period).
Network	<p>Infrastructure networks are the physical assets that enable the provision of services such as transport connectivity, power, water and internet.</p> <p>In the context of the transport sector, a network refers to a collection of routes that provide interconnected pathways between multiple locations for similar traffic. This can be uni-modal (supporting one type of transport, for example, a rail network) or multi-modal (supporting multiple types of transport, for example, a road network).</p>
Network optimisation (transport)	Making better use of existing infrastructure assets and improving performance through low or non-capital cost actions. For example, using technology to improve corridor management, reallocating road space between modes of transport, or encouraging users to shift from congested modes and routes to those with more capacity.
Nominal prices	A value or price at a given time. Nominal prices rise with inflation. In contrast, real prices are prices after the effect of inflation has been removed. (See real prices).
Non-infrastructure options/solutions	Initiatives that avoid the need for significant expenditure on new or upgraded infrastructure. For example, changes to pricing or reforms to regulations.
Opportunity cost	<p>The value lost to society from using a resource in its next best alternative use, represented in dollars. Synonymous with ‘resource cost’ and ‘social cost’.</p> <p>This cost reflects market prices where there is an absence of market failure. Where market failure exists, appropriate adjustments are required to estimate the true opportunity cost.</p>
Option	Possible solution to a problem, including base case options such as ‘do nothing’ or ‘do minimum’. (See base case).

Term	Definition
Options assessment	The assessment of alternative options for solving an identified problem. (See option).
Post-completion review	A review of a completed set of actions to determine whether the desired objectives and/or forecast benefits and costs have been realised, and to explain the reasons for any differences between the expected and actual outcomes. The aim is to draw appropriate lessons for future project identification and assessment. A post-completion review is sometimes referred to as an 'ex-post evaluation'.
Priority or High Priority	Initiatives and projects are listed on the <i>Infrastructure Priority List</i> as either Priority or High Priority to indicate the comparative significance of the problems or opportunities they address. We use these categories in order to direct decision maker's attention to the most critical issues, while also offering a comprehensive view of all nationally significant problems and opportunities. Infrastructure Australia considers a range of factors in classifying a project or initiative as High Priority, including the scale of national productivity benefits the proposal will deliver – considering its economic, social and environmental value – and its strategic significance within networks.
Productivity	The efficiency with which industry and the economy as a whole convert inputs (labour, capital, and raw materials) into output. National productivity is commonly measured as Gross Domestic Product (GDP) per capita. (See Gross Domestic Product).
Project	In the context of this document, this is a solution to a defined problem or opportunity for which a full business case has been completed by the proponent and positively assessed by Infrastructure Australia.
Program	A suite of related initiatives to be delivered in a coordinated manner to obtain benefits not achievable from delivering them individually.
Proponent	A jurisdiction or private sector organisation that makes an initiative or project business case submission to Infrastructure Australia. To be a proponent of a business case, the organisation must be capable of delivering that proposal.
P50 cost	An estimate of project costs based on a 50% probability that the cost estimate will not be exceeded. Commonly known as the 'expected cost' of a project.
P90 cost	An estimate of project costs based on a 90% probability that the cost estimate will not be exceeded.
Real prices	Prices that have been adjusted to remove the effects of inflation. They must be stated for a specific base year, for example '2016 prices'. (See base year).
Smart freeway / Smart motorway	Smart motorways comprise an integrated package of Intelligent Transport Systems (ITS) interventions. This includes coordinated ramp signalling, speed and lane use management, traveller information (using variable message signs) and network intelligence (such as from vehicle detection equipment). ³ (See Intelligent Transport Systems).
Social cost	See opportunity cost .
Social outcomes	An impact from a project or initiative that will change the quality of life of Australians. For example, health and wellbeing benefits that result from improved access to healthcare services and improved air quality.
Strategic merit	Evidence that the proposed initiative addresses a problem and/or opportunity of national significance and would deliver outcomes consistent with other government priorities and commitments.
Travel time savings	The benefit of less time spent travelling as a result of a project. The number of hours saved is typically modelled for both personal and business travel across a network, then converted to a monetary value for use in cost-benefit analysis (see cost-benefit analysis).

Term	Definition
Twenty-Foot Equivalent Units (TEUs)	An inexact unit of cargo capacity often used to describe the capacity of container ships and container terminals. It is based on the volume of a 20 foot long (6.1 m) intermodal container, a standard-sized metal box that can be easily transferred between different modes of transportation, such as ships, trains and trucks.
Urban renewal	The Victorian Planning Authority defines urban renewal as: ‘...unlocking under-utilised areas for jobs, investment, and housing. It can often involve rezoning land, improving an area’s amenity and identifying transport and infrastructure needs.’
Vehicle operating costs	The costs associated with owning, driving and maintaining a vehicle. This includes the costs of fuel consumption, oil and lubrication, tire wear, repair and maintenance, depreciation, and license and insurance.
Wider economic benefits (WEBs)	Improvements in economic welfare from agglomeration, imperfect competition and labour supply effects that are acknowledged, but have not been typically captured in traditional cost-benefit analysis. (See cost-benefit analysis).

1 <https://www.energycouncil.com.au/analysis/firming-renewables-the-market-delivers/>

2 National Heavy Vehicle Regulator 2018, NHVR, Fortitude Valley, www.nhvr.gov.au/road-access/performance-based-standards

3 <https://austroads.com.au/publications/traffic-management/agsm>

Infrastructure Australia is an independent statutory body that is the key source of research and advice for governments, industry and the community on nationally significant infrastructure needs.

It leads reform on key issues including means of financing, delivering and operating infrastructure and how to better plan and utilise infrastructure networks.

Infrastructure Australia has responsibility to strategically audit Australia's nationally significant infrastructure, and develop 15-year rolling infrastructure plans that specify national and state level priorities.

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The bottom of the page features a large, abstract graphic composed of several overlapping geometric shapes. On the left, there is a large red trapezoidal shape. To its right, a dark blue triangle points upwards. Further right, a teal-colored trapezoidal shape is visible. These shapes overlap to create a modern, geometric design at the bottom of the document.