PART A

Introduction, project background and description

INLAND RAIL

CHAPTER A5

Strategic context and need for the proposal

Narromine to Narrabri

Environmental Impact Statement

ARTC

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

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A5. Strategic context and need for the proposal

This chapter describes the strategic planning context, and the key issues and demands that have influenced the need for, and development of, Inland Rail together with the Narromine to Narrabri project (the proposal) as part of the overall Inland Rail programme. A summary of the need for Inland Rail and the proposal is also provided.

A5.1 Strategic planning context

A5.1.1 The existing situation

There is no direct continuous inland rail link between Melbourne and Brisbane, with interstate rail freight travelling between Melbourne and Sydney via Albury, and then between Sydney and Brisbane, generally along the coast. About 70 per cent of the freight between Melbourne and Brisbane is carried by road, principally the Newell Highway in NSW, and connecting highways in Victoria and Queensland (Transport for NSW, 2015).

The idea for extending the Australian rail network to provide an inland railway between Melbourne and Brisbane has been around for at least 100 years (Inland Rail Implementation Group, 2015). In the last decade, the concept of an inland railway between Melbourne and Brisbane has been subject to significant analysis for the following reasons (ARTC, 2020a):

- **Capacity**: existing freight infrastructure between Melbourne and Brisbane has insufficient capacity to meet future freight demand
- **Productivity**: existing north–south freight infrastructure (road and rail) is constrained by both geography (old rail lines with numerous curves and inability to take double-stacked freight trains) and the priority given to passenger rail services (particularly through the greater Sydney metropolitan area where curfews are in place on freight trains during peak commuting hours)
- **Social and environment:** the continued reliance on road for freight transport will result in increasing safety, environmental and community impacts with associated costs to the economy
- **Regional and growth:** existing north–south freight infrastructure is impacting access to efficient supply chain networks for regional producers and industries, inhibiting productivity and economic growth
- **Resilience:** lack of resilience on existing north–south freight infrastructure exposes supply chains to disruptions and greater unreliability.

Two major studies have been undertaken in relation to the development of an inland rail route between Melbourne and Brisbane. The first study, the *North–South Rail Corridor Study* (Department of Transport and Regional Services, 2006) considered potential corridors for the rail line. As an outcome of the study, the 'far-western sub-corridor', via Parkes, Moree and Toowoomba, was identified as the preferred corridor for a Melbourne–Brisbane inland railway.

In 2008, the then Minister for Infrastructure, Transport, Regional Development and Local Government announced a study to determine the optimum alignment, as well as the economic benefits and likely commercial success, of a new standard-gauge inland railway between Melbourne and Brisbane. This study, the *Melbourne–Brisbane Inland Rail Alignment Study* (ARTC, 2010) developed the concept Inland Rail alignment (shown in Figure A5.1), which has been the subject of further investigation and refinement since this time.

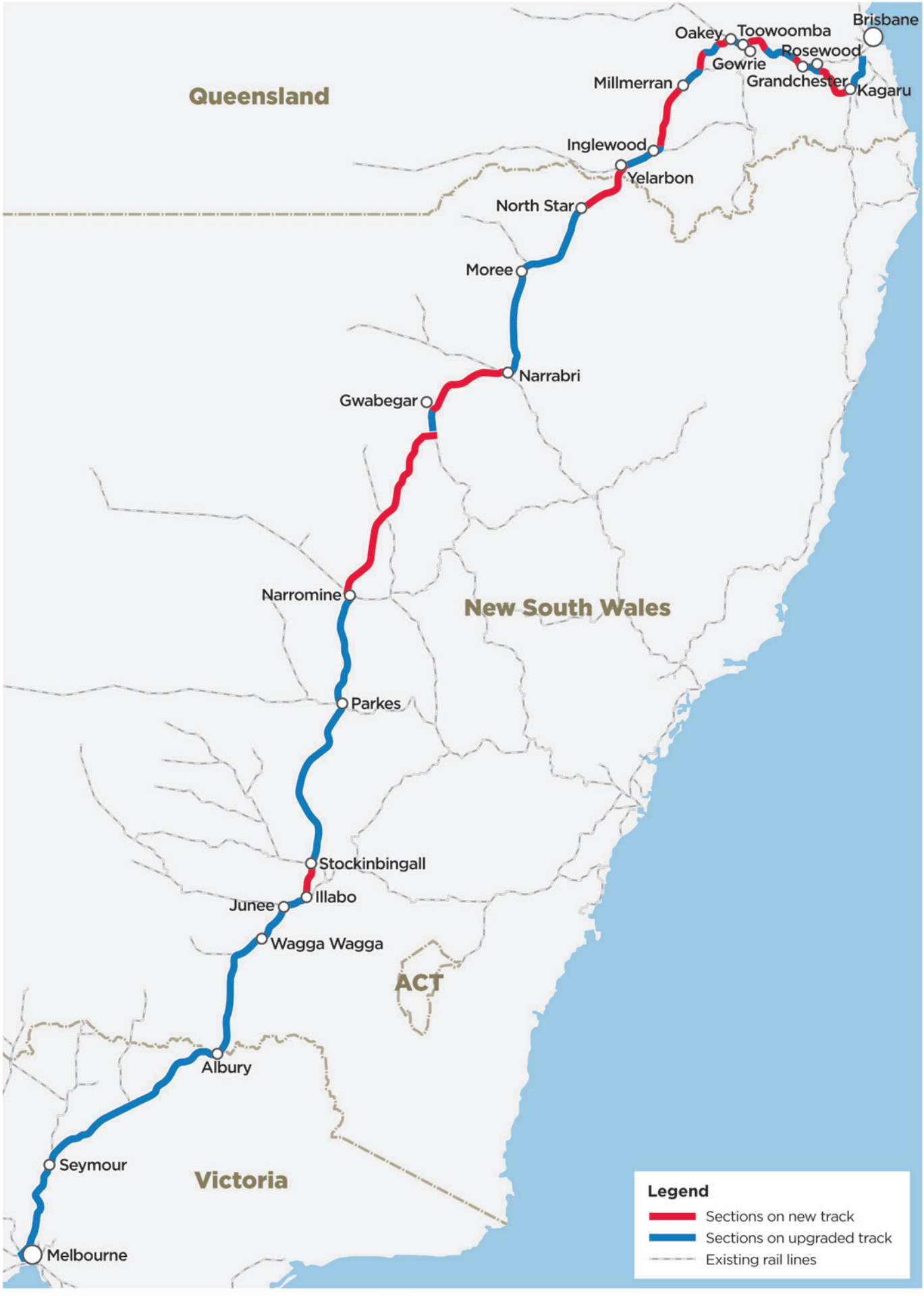

Figure A5.1 **Inland Rail alignment**

The conclusions of the *Melbourne–Brisbane Inland Rail Alignment Study* include:

- There is demand for an inland railway
- The route for an inland railway would be more than 100 kilometres (km) shorter than the existing coastal route
- The preferred alignment could achieve an average Melbourne to Brisbane transit time (terminal to terminal) of less than 24 hours, compared to a transit time on the existing coastal route of about 27 hours and 30 minutes
- The inland railway would free up rail and road capacity through Sydney
- The inland railway would achieve a positive economic net present value between 2030 and 2035, and if demand volumes grow more strongly than forecast, viability could be reached sooner.

In November 2013, the Minister for Infrastructure and Regional Development announced that the Australian Government had committed $300 million to enable the development of Inland Rail to commence, starting with pre-construction activities, such as detailed corridor planning, environmental assessments, and community consultation. The Minister also announced that a high-level Implementation Group would be formed to drive the project. The alignment identified by the Melbourne–Brisbane Inland Rail Alignment Study was endorsed by the Implementation Group as the base case for further work (Inland Rail Implementation Group, 2015).

In 2014, the Implementation Group appointed ARTC to develop a business case and a 10-year delivery plan for Inland Rail. Planning and design work for the following projects in NSW is underway:

- Narromine to Narrabri (the proposal)
- Parkes to Narromine (construction underway)
- Narrabri to North Star (proceeding in two parts—the proponent is reviewing submissions for part 1 and planning is underway for part 2)
- North Star to NSW/Qld border (planning underway)
- Illabo to Stockinbingal (planning underway).

Further information on the alternatives and options considered is provided in chapter A6.

A5.1.2 Consistency with national, state and regional strategic planning

The strategic context of Inland Rail (including the proposal) is influenced by the outcomes of a number of strategic plans for transport, development, and freight that have been prepared at the national, state and regional levels. Key national and state strategies, policies, and plans have also informed and influenced the vision, objectives, and development of Inland Rail and the proposal.

The proposal, as part of Inland Rail, is consistent with the following relevant strategies:

National

- *Australian Infrastructure Plan* (Infrastructure Australia, 2016) and the *Infrastructure Priority List* (Infrastructure Australia, 2020)
- *State of Australian Cities 2014-2015* (Department of Infrastructure and Regional Development, 2015)
- *Urban Transport Strategy* (Infrastructure Australia, 2013)
- *National Land Freight Strategy* (Standing Council on Transport and Infrastructure, 2013)
- *National Ports Strategy* (Infrastructure Australia and the National Transport Commission, 2011).

NSW

- *Building Momentum: State Infrastructure Strategy 2018-2038* (Infrastructure NSW, 2018b)
- *Future Transport Strategy 2056* (Transport for NSW, 2018a)
- *NSW Freight and Ports Plan 2018-2023* (Transport for NSW, 2018b)
- *Regional NSW Services and Infrastructure Plan* (Transport for NSW, 2018c)
- *Road Safety Plan 2021* (Transport for NSW, 2018d)
- *Newell Highway Corridor Strategy* (NSW Government, 2015a).

Regional and local

- *Central West and Orana Regional Plan 2036* (NSW Government, 2017a)
- *New England North West Regional Plan 2036* (NSW Government, 2017b)
- *Economic Development Strategy for Regional NSW* (DTIRIS, 2015)
- *NSW Central West Freight Study* (Regional Development Australia—Central West, 2014).

Further information on these strategies and their relationship to Inland Rail and the proposal is provided in Appendix E.

A5.2 Summary of key issues and demands

A summary of the key issues and demands relevant to the development of, and need for, Inland Rail (including the current proposal) is provided below. A detailed analysis of the issues and project drivers is provided in the *Inland Rail Programme Business Case* (ARTC, 2015) and in the *Inland Rail Implementation Group Report* (Inland Rail Implementation Group, 2015).

A5.2.1 Growth in freight demand

In 2011, the domestic rail freight task totaled 261.4 billion tonne km, accounting for about 46 per cent of total domestic freight. This represents an increase of 91 per cent since 2000–2001 (Infrastructure Australia, 2015).

The 2015 Australian Infrastructure Audit (Infrastructure Australia, 2015) notes that:

- The national land freight task is expected to grow by 80 per cent between 2011 and 2031
- Demand for freight rail infrastructure is projected to grow, in particular for resource bulk commodity haulage, in WA, Queensland and NSW
- Freight rail will need to play a growing role in the movement of goods between ports and inland freight terminals, and in the movement of containerised and general freight over longer distances.

The Melbourne to Brisbane corridor is one of the most important general freight routes in Australia, supporting key population and employment precincts along the east coast and inland NSW. The non-bulk and complementary volumes moving within the corridor are currently estimated at 21 million tonnes per annum. Demand for freight transport in the Melbourne to Brisbane corridor is expected to grow substantially over the coming decades, to over 40 million tonnes per annum by 2050 (Infrastructure Australia, 2016).

The east coast freight task is also predicted to grow, as shown in Figure A5.2.

The impact of not providing the required freight infrastructure along the east coast results in rail having a small market share of 26 per cent between Melbourne and Brisbane and no real capacity for long-term rail growth. The *Inland Rail Programme Business Case* forecasts that the land freight task between these two cities will increase from about 4.9 million tonnes of freight in 2016 to around 16 million tonnes by 2060 (ARTC, 2015).

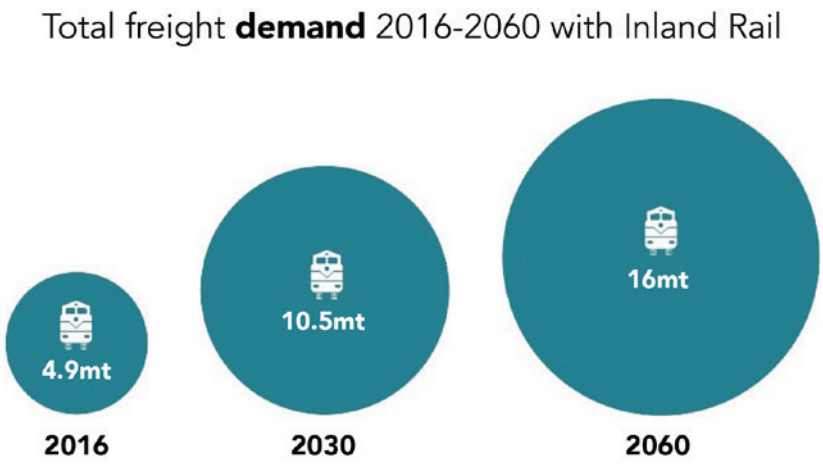

FIGURE A5.2 AUSTRALIA'S GROWING EAST COAST FREIGHT TASK

The east coast of Australia comprises 79 per cent of Australia's population and contributes 75 per cent of the nation's gross domestic product. With Australia's east coast population forecast to increase by 60 per cent over the next 40 years, there will be significant pressure on freight infrastructure. The freight task on the east coast is significant, with the interstate freight task alone projected to increase by 70 per cent by 2030, to 140 billion tonne km (Bureau of Infrastructure, Transport and Regional Economics, 2010). Currently, rail's share of freight movements along the east coast of Australia, between each capital city, from our regions and through our ports, is at low levels.

With the population of the eastern states forecast to increase by 60 per cent over the next 40 years, the need for efficient and effective freight transport will continue to increase. Strong forecast population growth, accompanied by comparable growth in employment, is likely to place significant pressure on existing infrastructure and services (ARTC, 2015).

Without the increased use of rail, the growth in freight demand is likely to result in increasing pressure on the road network and associated issues, increased freight costs, and a loss of economic opportunity.

A5.2.2 Existing freight capacity and infrastructure issues

As the demand for regional and interstate freight transport grows, rail and road infrastructure in the north–south corridor will face progressive challenges in meeting future demand. There will be increasing pressure on freight capacity between capital cities, and from the regions, to export ports and urban freight destinations.

Freight trains travelling along the Melbourne to Brisbane corridor currently travel through the Sydney metropolitan rail network, often experiencing significant delays. Travel time reliability is poor, as a result of the priority given to passenger services, freight transit curfews in the Sydney metropolitan area, and substandard rail alignments elsewhere. Limited capacity during morning and afternoon passenger peaks restricts freight movements at these times (NSW Government, 2013).

The *Australian Infrastructure Plan* (Infrastructure Australia, 2016) notes that the existing north–south rail corridor between Melbourne and Brisbane does not provide a service offering that is competitive with road transport. This is largely the result of 19th century alignments leading to low travel speeds and reliability, and major bottlenecks, most notably in the Sydney metropolitan area.

Infrastructure Australia (2016) notes that the demand for urban transport infrastructure is projected to increase significantly. Without action, the cost to the wider community of congestion on urban roads could rise to more than $50 billion each year by 2031. Demand for many key urban road and rail corridors is projected to significantly exceed current capacity by 2031. Inland Rail will encourage and facilitate the shift of more freight from road to rail as shown in Figure A5.3.

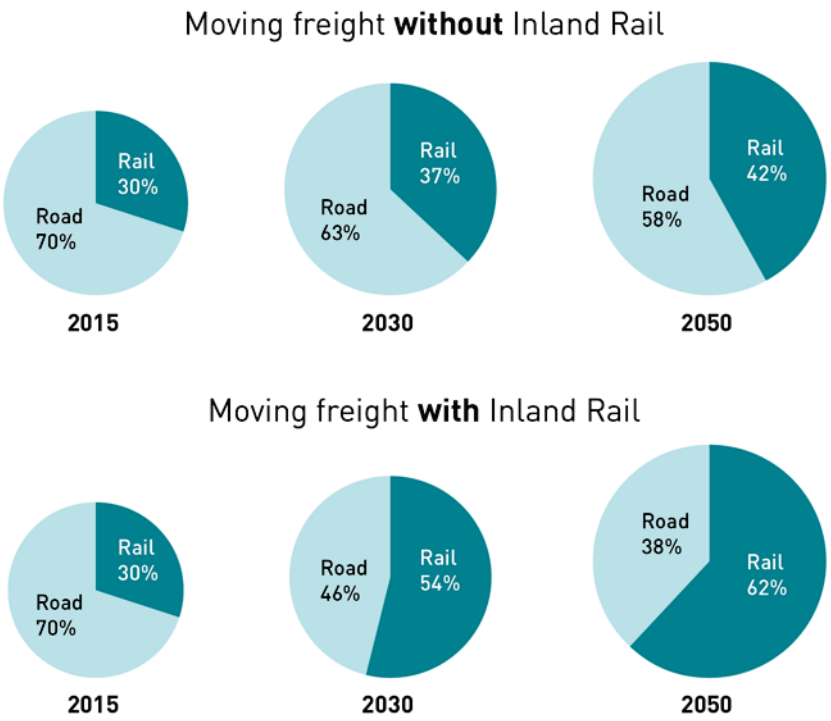

FIGURE A5.3 THE DIFFERENCE INLAND RAIL WILL MAKE TO THE MOVEMENT OF FREIGHT

The National Land Freight Strategy identifies a number of existing challenges facing road and rail freight in general, including:

- Congestion from increasing numbers of passenger vehicles, and the priority given to passenger vehicles over freight vehicles in urban transport, can adversely impact on the efficiency of freight vehicle movement
- Encroachment of urban development on freight routes and precincts as cities grow in size and density leads to an increased potential for amenity, environmental and interface issues.

The *Melbourne–Brisbane Inland Rail Alignment Study* (ARTC, 2010) notes that:

- There are likely to be capacity constraints on the existing coastal railway unless significant capital works are undertaken
- The coastal railway between Sydney and Brisbane would reach capacity around 2052.

The issues associated with the existing regional rail systems also include the fact that much of the infrastructure is old and has maintenance and renewal issues. Poor maintenance of rail lines leads to more freight being transported by road, imposing additional maintenance burdens on the affected councils (Infrastructure Australia, 2015).

A5.2.3 Assessment of demands for Inland Rail

Continued growth in freight volumes is giving rise to a range of increasingly complex challenges for government, industry and the community. Over the last four decades, the Australian freight task (that is, the amount of freight transport, usually measured in tonnes or tonne-kilometres) has quadrupled, with major increases evident in road and rail transport. Forecasts indicate that the total freight task will continue to grow and is estimated to nearly double by 2030 based on 2010 levels (Infrastructure Australia, 2012).

The *Inland Rail Programme Business Case* (ARTC, 2015) provides a detailed description of the potential demand for Inland Rail. The demand projections have been used to:

- Estimate the potential revenue of Inland Rail
- Assess the economic benefits arising from mode shift from road and the coastal route to Inland Rail
- Determine the appropriate capacity of Inland Rail

- Determine appropriate service frequency and the impact of this on capacity utilisation, railway and train operating costs.

The main categories of freight that are expected to comprise the market for Inland Rail are non-bulk manufactured products, including bulk steel, paper, coal and grain, as shown in Figure A5.4.

The demand analysis indicates that (ARTC, 2015):

- Inland Rail is expected to increase rail's share of the Melbourne to Brisbane freight market from the current 26 per cent to 62 per cent by 2049–50. Similarly, it is estimated that Inland Rail would increase rail freight's share of the Adelaide to Brisbane market by 28 per cent and Brisbane to Perth's share by 7 per cent.
- Better connections to the Port of Brisbane would result in an estimated 2 million tonnes of freight shifting from road to rail by 2049–50, particularly grain and cotton from New England, as well as grain on both rail and road from the Darling Downs to the Port of Brisbane. In NSW, a significant tonnage of grain (about 7.5 million tonnes, spread) would also use Inland Rail on its way to NSW ports.
- Inland Rail would attract induced freight, such as coal in the Surat and Clarence-Moreton Basins, which would increase from the current 8 million tonnes to 19.5 million tonnes.

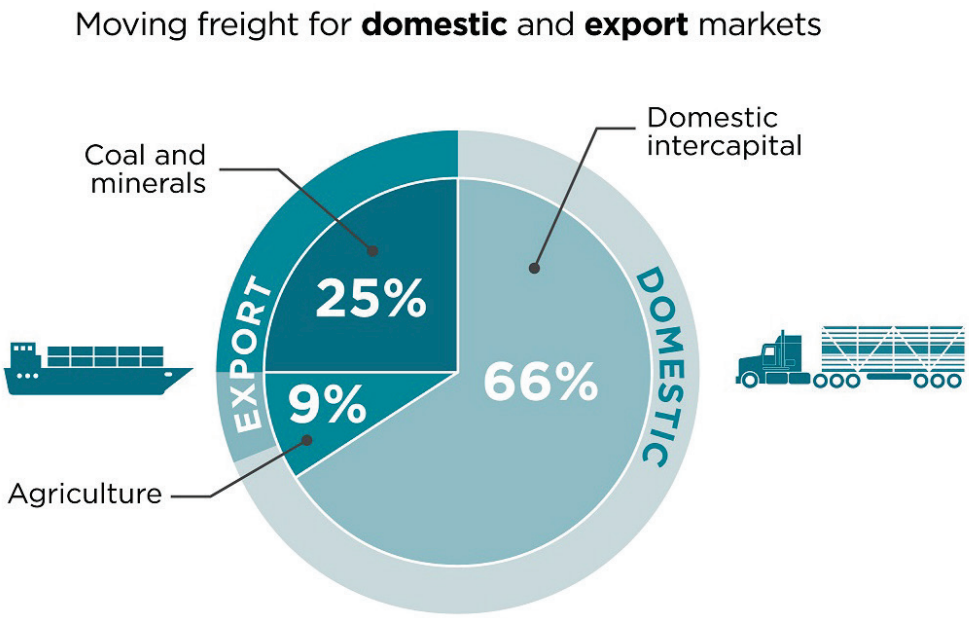

FIGURE A5.4 FREIGHT TYPES AND PERCENTAGES FORECAST AT 2050

A5.3 Need for the proposal

A5.3.1 Need for Inland Rail

The need for Inland Rail is driven by the issues and demands described above, and factors such as population growth, the economic and safety costs of road congestion, environmental considerations and the emerging imperative to build efficient supply chains to drive a more productive Australia. A modal shift of freight from road to rail has become an increasing imperative due to urban and non-urban congestion that is significantly hampering the country's economic productivity and indirectly impacting the standard of living of every Australian.

The cost of road congestion is projected to grow by $20 billion in the next decade and to between $30 billion a year (Bureau of Infrastructure, Transport and Regional Economics, 2015) and $50 billion a year (Committee for Economic Development of Australia, 2016) from 2031. Without additional investment in rail infrastructure capacity (such as Inland Rail), the repercussions of ever-increasing levels of traffic congestion will be felt at state and national levels.

Inland Rail would decrease the amount of trucks on the road by up to 200,000 per year, which would result in the safety and environmental benefits shown in Figure A5.5.

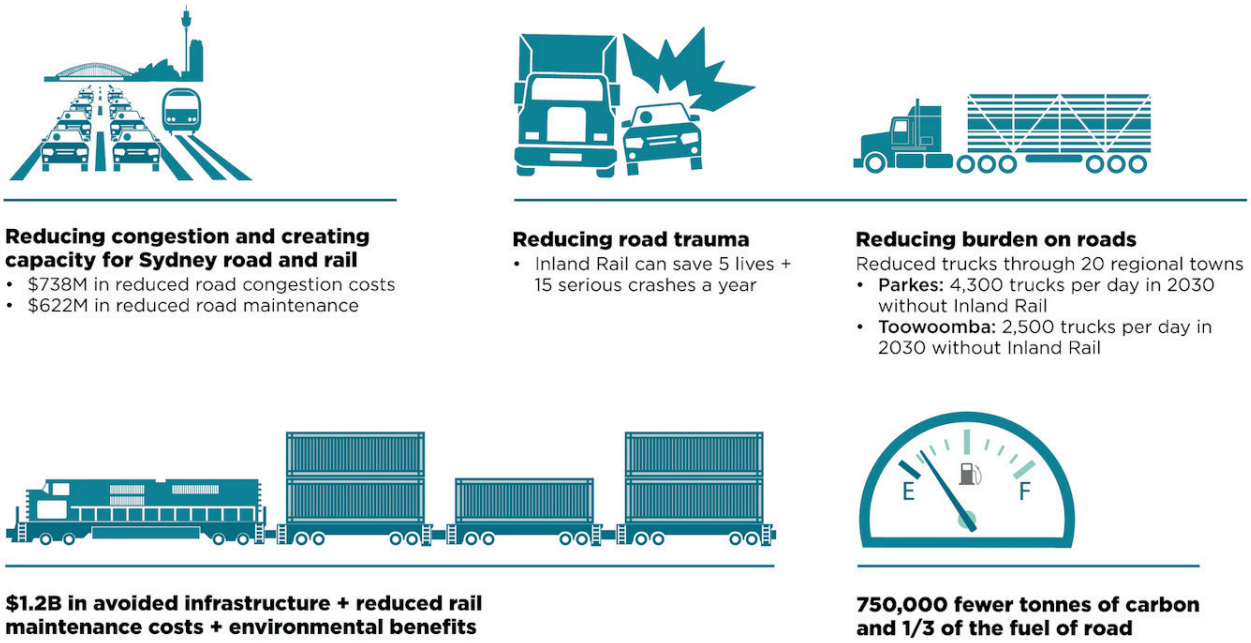

FIGURE A5.5 SAFETY AND ENVIRONMENTAL BENEFITS OF SHIFTING FREIGHT TO RAIL

Inland Rail is fundamental to the continued growth of rail freight. It is estimated that Inland Rail will shift the share of freight moved by rail between Melbourne and Brisbane from 26 to 62 per cent, so that, by 2050, about 7.9 million tonnes of inter-capital freight will be moved by rail between the two cities (ARTC, 2015). Inter-capital freight includes products such as hardware, steel, groceries and other consumer goods. It travels between major ports and capital cities before being distributed to retailers.

Inland Rail will also travel through some of Australia's richest farming regions and mining regions. It is expected to draw significant volumes of grain, cotton, chilled beef, coal and other commodities onto rail. During construction, Inland Rail is expected to be a major economic enabler in the regions, as ARTC will aim to use local procurement and employment as far as possible.

Infrastructure Australia evaluated Inland Rail and identified it as having long-term benefits to potential users and the broader economy. Infrastructure Australia also considered that, from a strategic perspective, there is merit in using rail to move substantial volumes of freight over long distances. This approach is consistent with current strategic planning principles for freight transport (see section A5.1).

The key overall benefits of Inland Rail can be summarised as:

- **Improved network efficiency and reliability**: transit time between Melbourne and Brisbane is less than 24 hours, with 98 per cent reliability, which matches current road transport levels
- **Safety improvements**: up to 15 serious crashes, involving fatalities and serious injuries, will be avoided every year. Road congestion on some of Australia's busiest highways, including the Hume, Newell and Warrego, will also be reduced.
- **Boost to the Australian economy**: Inland Rail is expected to increase Australia's GDP by $16 billion during its construction and first 50 years of operation
- **Job creation**: Inland Rail is expected to create up to 16,000 new jobs at the peak of construction, with an additional 700 long-term jobs once it is operational
- **Improved sustainability**: moving freight by rail is four times more fuel efficient than moving freight by road. Carbon emissions will be reduced by 750,000 tonnes per year and truck volumes will be reduced in more than 20 of our regional towns (based on a 2050 estimate).

Some of the other key benefits of Inland Rail to the freight industry, and its alignment with the *National Land Freight Strategy* (Standing Council on Transport and Infrastructure, 2013) are:

- **Improved access to and from regional markets**: 2 million tonnes of agricultural freight shifted from road, with a total of 8.9 million tonnes of agricultural freight more efficiently diverted to Inland Rail
- **Reduced costs for the market**: reduced rail costs for inter-capital freight travelling between Melbourne and Brisbane by $10 per tonne
- **Increased capacity of the transport network**: additional rail paths for freight (160 round trip paths per week), a 105 per cent increase on current freight paths on the coastal route alone, along with releasing capacity for passenger services in Sydney and Brisbane and removing 200,000 truck movements (5.4 billion net tonne kilometres of freight) from roads each year from 2049–50
- **Reduced distances travelled**: a 200 km reduction in rail distance between Melbourne and Brisbane, and a 500 km reduction between both Brisbane and Perth and Brisbane and Adelaide
- **Reduced travel time**: reducing the travel time for freight (mainly grain) trains from Goondiwindi to the Port of Brisbane by about 4 hours and 30 minutes compared with the current rail trip
- **Improved sustainability**: providing an alternative north–south freight path to counter weather, climactic or other disaster disruption to the transport network.

These benefits are illustrated in Figure A5.6.

Inland Rail will deliver on key national priorities for infrastructure and economic policy; and will provide a comprehensive and accessible rail transport system that links communities and strengthens industry. Better infrastructure and an effective national freight operation are key to delivering efficient supply chains, improving Australia's global competitiveness and lifting our nation's wealth and prosperity.

The Department of Infrastructure, Transport, Regional Development and Communications (DITCRD) manages the Australian Government's rail investments. The Australian Government is investigating the following infrastructure investments that will support the development of Inland Rail:

- Intermodal terminals connecting ports, regional networks and capital cities between Melbourne and Brisbane
- The Interface Improvement Program integrating regional lines into the national freight rail network.

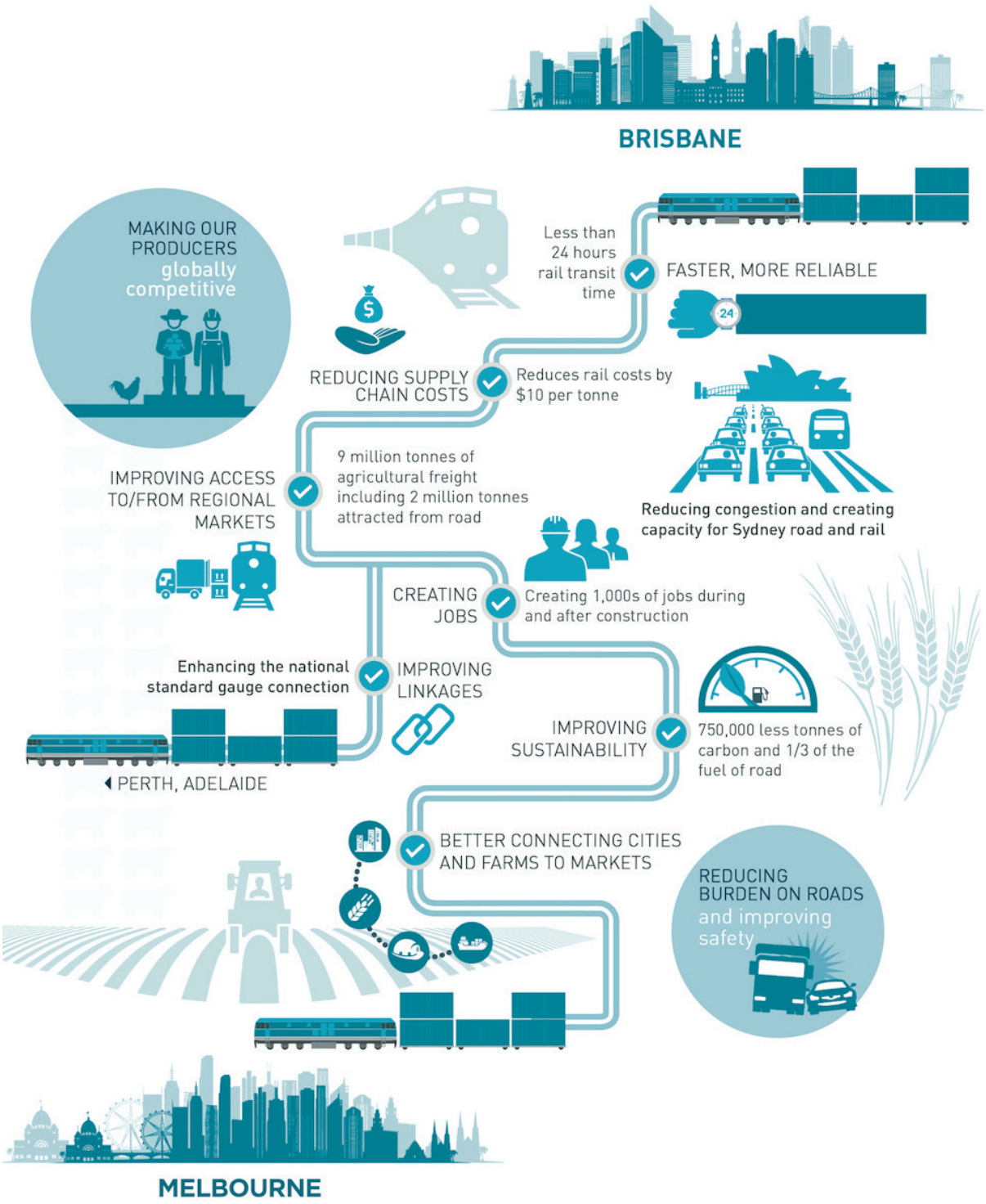

FIGURE A5.6 BENEFITS OF INLAND RAIL TO THE FREIGHT INDUSTRY

A5.3.2 Need for the proposal

Inland Rail consists of 13 geographically based projects, involving:

- Building sections of new or 'greenfield' route
- Upgrading sections of existing secondary lines to meet Inland Rail's performance specification
- Enhancing sections of existing main lines, mainly to improve vertical and horizontal clearances between infrastructure above the rail corridor and the tracks themselves, to enable trains with double-stacked containers to pass safely beneath.

The proposal involves developing a new section of rail line to connect the Parkes to Narromine and the Narrabri to North Star sections of Inland Rail. Development of the proposal is required to enable implementation of Inland Rail.