



Inland Rail Business Case Briefing Paper No. 1

Strategic context and rationale

August 2020



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Introduction

This paper contains information drawn from Inland Rail's 2015 *Programme Business Case* (the Business Case). The Business Case, prepared for ARTC by PricewaterhouseCoopers, was published in 2015. Infrastructure Australia subsequently included Inland Rail as a Priority Project on the *Infrastructure Priority List*. Where available and applicable, updated information is included based on work undertaken during Inland Rail's continuing development.

The paper includes information under five headings:

1. Australia's freight challenge
2. Strategic options assessment
3. Inland Rail's service offering
4. The importance of transit time
5. Port connectivity

1 Australia's freight challenge

The Business Case noted that, at the time of its preparation, Australia's interstate freight task was projected to increase 70% to 140 billion tonne kilometres by 2030. The Melbourne to Brisbane corridor already accounts for 17% of these interstate movements.¹

As the east coast freight task grows and population growth in our capital cities continues, there will be increasing pressure on freight capacity between capital cities and from the regions as competition for scarce road space and rail network capacity increases.

The ability of existing freight transport modes to cater for growth and offer efficient, cost effective freight transport services in the north–south corridor between Melbourne and Brisbane is projected to become increasingly constrained, characterised by problems relating to capacity, productivity, society and environment, regions and growth, and resilience.

The key problems can be summarised as:

1. *Capacity*: Existing infrastructure between Melbourne and Brisbane has insufficient capacity to meet future freight demand.
2. *Productivity*: Current north–south freight infrastructure is constrained, and this will increasingly impact negatively on freight productivity.
3. *Social and Environmental*: The continued reliance on road for freight transport will result in increasing safety, environmental and community impacts with associated costs.
4. *Regional Growth*: Existing north–south freight infrastructure is impacting accessibility to supply chain networks for regional producers and industries and inhibiting the productivity and economic growth potential of regional communities.

¹ BITRE Research Report 120: *Interstate Freight in Australia, 2010*. Subsequently, the National Freight and Supply Chain Strategy adopted in August 2019 forecast a 35% increase in Australia's freight demand by 2040 (in terms of volume). Interaction with the National Freight and Supply Chain Strategy has previously been addressed in ARTC's Submission to the Senate Inquiry (Appendix A Part 4). It should be noted that the Inland Rail Business Case pre-dates the Strategy, and that accordingly the Strategy includes later data sources that were not available at the time of the Business Case. Nevertheless, the Business Case is materially consistent with the Strategy.

5. *Resilience*: Lack of resilience on existing north–south freight infrastructure exposes supply chains to disruptions and suboptimal reliability.

The potential consequences of inaction are significant. Without a decision to make a step change in rail performance, the growth in freight demand will likely see increasing pressure on road networks, increased freight costs and a loss of economic opportunity. Road will increasingly become the dominant mode with rail becoming less market relevant.

A future without Inland Rail would see:

- ▶ More trucks and a greater number of larger trucks (e.g. B-triples) mixing with passenger vehicles on major highways.
- ▶ Loss of community amenity, both in cities and the regions, from more and larger trucks sharing road networks.
- ▶ An increase in road maintenance requirements as a result of an increase in the number and size of heavy vehicles.
- ▶ Greater environmental impacts as the freight task grows, with more congestion, carbon emissions and noise.
- ▶ Lack of incentives for companies to invest in rail supply chains potentially locking them into road-based logistics options.

The continued reliance on road for freight transport will result in increasing safety, environmental and social impacts with associated costs to the community. Key roads used to transport the freight task in the north-south corridor are characterised by higher than average severity of incidents, including on the Newell and Warrego highways. This can be attributed to high speeds and a higher percentage of heavy vehicles along the highways. Road accidents causing death or serious injury are nearly three times more likely relative to rail.

The lack of resilience on existing north–south freight infrastructure exposes supply chains to disruptions and sub-optimal reliability. There are limited options for rail freight to bypass incidents on the existing Melbourne to Brisbane coastal rail corridor, which means that incidents have the potential to impact freight along the entire length of the route.

During incidents such as floods, freight operators may experience considerable delays, or must allocate freight movements to road (which may also be constrained depending on the incident). Additionally, the shared nature of the coastal rail infrastructure between passenger and freight significantly impacts on freight reliability.

2 Strategic options assessment

In developing the Business Case a strategic options assessment was undertaken to consider a range of reform and investment options consistent with Infrastructure Australia’s guidelines. A range of options was identified, including:

2.1 Reform options

These relate to regulatory reform, governance reform or better use of existing infrastructure, e.g. economic charging or demand management. While reform options may be lower in cost, they are likely to be challenging to implement and are expected to be ineffective in improving freight supply chain performance or productivity outcomes unless coupled with enhanced infrastructure capacity.

2.2 Capital investment options

Capital investments are defined by Infrastructure Australia as expansion of existing infrastructure or new infrastructure.

Options considered included:

- ▶ *Progressive road upgrades:* May be medium term solutions for freight; however, upgrades are unlikely to meet longer term needs for freight capacity, likely to be high cost, and road capacity would continue to be shared with general traffic.
- ▶ *Upgraded coastal railway:* Able to deliver improvements in capacity, performance and reliability, however structural limitations of the existing rail alignment and shared track with passenger rail in some locations will constrain future long-term capacity.
- ▶ *Inland railway bypassing Sydney:* The ability to provide dedicated freight capacity, avoid urban areas yet foster growth in regional areas and optimise environmental outcomes supports an inland railway overall.

2.3 Preferred option

- ▶ *An inland railway from Melbourne to Brisbane bypassing Sydney* is the preferred option, to service anticipated future freight demand, provide an increase in productivity, act as an enabler for regional development, and improve road safety whilst reducing congestion and environmental impacts. This represents a decisive step change in the capacity, capability and interoperability of the national freight system, supporting the backbone national freight network.

Inland Rail will address a number of deficiencies in the existing rail network. These include the fact that all standard gauge rail freight from Brisbane must currently travel through the Sydney metropolitan area, conflicting with commuter trains and specifically being affected by curfews on freight trains at peak periods. By being dual-gauged from the terminal/s in Brisbane to the QLD/NSW border, Inland Rail will shorten the rail route from Brisbane to Adelaide and Perth by 500 kilometres, it will provide connectivity with regional tracks in NSW, and connectivity in Queensland to regional lines where the rail network is narrow gauge.

The Business Case defined the following program objectives for Inland Rail:

- I. Provide a backbone rail link between Melbourne and Brisbane that is interoperable with train operations between Perth and Adelaide in order to serve future rail freight demand and stimulate growth for intercapital and regional/bulk rail freight.
- II. Provide an increase in productivity that will benefit consumers through lower freight transport costs.
- III. Provide a step-change improvement in rail service quality in the Melbourne to Brisbane corridor to deliver a freight rail service on the east coast that is competitive with road.
- IV. Improve road safety, ease congestion and reduce environmental impacts by moving freight from road to rail.
- V. Bypass bottlenecks on congested metropolitan rail networks on the east coast and free up train paths for other services on the coastal route.
- VI. Act as an enabler for regional economic development along the Inland Rail corridor.

3 Inland Rail service offering

Extensive consultation with key market participants and other industry stakeholders was undertaken to develop the service offering and scope of Inland Rail to ensure it meets market needs. This ensured that Inland Rail's scope has a customer focus as opposed simply to having an infrastructure or engineering focus.

Four key service attributes have been identified as underpinning the market requirements for improved rail freight services in the corridor, namely reliability, transit time, price and availability. Table 1 summarises the relative advantages offered by Inland Rail for each service attribute in comparison with the existing coastal route.

Table 1 Comparison of Melbourne to Brisbane coastal route and Inland Rail

SERVICE OFFERING	COASTAL RAIL 2014-15	INLAND RAIL	IMPROVEMENTS
Transit time (linehaul)	32-34 hours	Up to 24 hours	10 hours
Reliability	83%	98%	15%
Availability	61%	95%	34%
Relative price (to road)	85%	57-65%	20-28%

4 The importance of transit time and distance

As explained in some further detail in an accompanying Inland Rail Information Paper (*The Importance of Time and Distance for Inland Rail*), adopting a route that is as direct as possible has been a critical consideration in route selection. The length of the route and overall transit time between Melbourne and Brisbane drive key economic benefits that underpin the Business Case.

Transit time and distance drive rail operating costs (crew, rolling stock, fuel), which in turn determines not only the price that Inland Rail can offer against road transport but the overall competitiveness of rail compared with road for freight transport, without which there will not be the anticipated shift in freight from road to rail.

Lower transit time generates ‘value of time’ savings for freight customers: this relates to the value placed by freight customers on having time sensitive freight delivered earlier than delivery times offered by alternative options. Market consultation during both 2010 and 2014 that ultimately resulted in the Inland Rail Service Offering highlighted the need to offer a range of transit times to meet market needs, with a Melbourne-Brisbane transit time of less than 24 hours necessary to compete with road in the time sensitive express market for intercapital city freight.

Lower transit time is critical for improved reliability (allowing a buffer time between train arrival and the advertised pick-up time for freight by customers from the receiving terminal) and also improves freight availability (the range of feasible arrival and departure times for freight that meet market requirements).

5 Port connectivity

Inland Rail connects at both Acacia Ridge (Brisbane) and Tottenham (Melbourne) with existing rail links to the Port of Brisbane and to the Port of Melbourne respectively. Rail connectivity to both ports will continue to be provided from the commissioning of Inland Rail. It may be noted that there have been significant upgrades to the link between the Port of Melbourne and Tottenham under ARTC’s management.

It should be noted, however, that the major freight traffic on Inland Rail will be domestic intermodal freight (Melbourne-Brisbane, Brisbane-Adelaide / Perth), which is not destined for the ports. The Business Case forecast that by 2050, these interstate freight flows will make up 66% of the total freight carried on Inland Rail on a net tonne kilometres basis.

The Business Case forecast that only 34% of the freight task on Inland Rail by 2049-50 will be export traffic needing access to the ports (largely to the Port of Brisbane), comprising coal (accounting for 25%) and bulk goods (such as grain, cotton, chick peas etc) which either generally do not require double-stacking of containers or cannot be double-stacked (as in the case of coal). This export traffic will be able to utilise the

existing rail connections for direct train access from regional areas to the ports and will not need to be transhipped at landside intermodal terminals.

In addition to Brisbane and Melbourne, by connecting into the existing interstate and regional rail networks, Inland Rail will also provide connections to multiple ports, including Newcastle, Port Botany, Port Kembla and Geelong.

Specific issues relating to access to the Port of Brisbane are discussed in an accompanying Information Paper (*Inland Rail Connection to the Port of Brisbane*).