



RTBU

The Inland Rail Project
Learning the Lessons of the Past
Building a Railway for the Future

Rail, Tram and Bus Union Submission to the Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into the Management of the Inland Rail project by the Australian Rail Track Corporation and the Commonwealth Government

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EXECUTIVE SUMMARY

The Rail, Tram and Bus Union (RTBU) is pleased to be given this opportunity to make this submission to the Senate Inquiry into the Management of the Inland Rail project by the Australian Rail Track Corporation (ARTC) and the Commonwealth Government.

The RTBU is the principal union in the public transport and rail freight industries, with over 30,000 members around Australia. Our members work on the frontline of Australia's transport sector and bring unique insights to transport policy issues.

Our Union believes the Inland Rail project is one of the most important infrastructure projects to be undertaken in this country since the construction of the Snowy Hydro scheme. The project has the potential to revolutionise the movement of transport north-south for the eastern states, and to contribute significantly to Australia's economic growth and productivity over the next 50 years and beyond.

The RTBU argues that the Inland Rail project should be a top-tier infrastructure priority for the Federal Government, however we also believe the current proposal needs to be re-worked to ensure it delivers a world-class and long-term outcome for Australia.

The guiding principles for the delivery of Inland Rail should:

- Be treated as transformational and intergenerational nation building project, delivering 21st Century performance and productivity benefits.
- Ensure the journey-time from one end to the other should be under 20 hours, enabling a return train consist to be completed in two days.
- Be constructed to North American Class I Railroad standards rather than ARTC mainline standards in order to support modern fast, efficient, high-productivity freight trains.
- Focus on the Toowoomba to Port of Brisbane corridor – the section that will deliver the most value to the national economy.
- Provide for, from inception, passenger services from Toowoomba to Brisbane as a part of an integrated rail passenger and freight project.
- Be future proofed at the outset, by providing a dual track tunnel through the Toowoomba Range to Rosewood.
- Not be compromised by short-term budget considerations, but rather focus on the intergenerational benefit for the Australian community and economy.
- Avoid the use of a Public Private Partnership (PPP) to fund the most expensive part of the project.

INTRODUCTION

Incremental Approach

The development of Australia's rail freight network over the past 50 years has been characterised by ad hoc and incremental projects, with large-scale infrastructure projects few and far between. The construction of the Alice Springs to Darwin line in 2003 was an exception to this rule, with 1,420km of new track being built for \$1.2 billion. Albeit, initially at the lowest possible cost, that resulted in vulnerability to flooding. However, notwithstanding these infrastructure limitations, the Alice Springs to Darwin line has since proved to be a good use of taxpayer funds that contributed to modal shift from road to rail. Furthermore, new export freight tasks were generated that were not initially envisaged.

The Inland Rail project, as it has been promoted, offers a promising change to the history of incrementalism in Australian rail. However, it has to be done right. The RTBU is concerned that the preferred alignment for the project relies too heavily on existing track. While the use of existing infrastructure will undoubtedly help to minimise the overall cost of the project, there is a risk that a low-cost project will fail to deliver the level of improvement needed to make rail freight competitive with other modes over the long term.

It has been noted that the preferred alignment will significantly reduce the length of journeys between Melbourne and Brisbane by up to 10 hours, improve reliability¹ by 15 per cent, reduce rail costs for inter-capital freight travelling between Melbourne and Brisbane by \$10 per tonne, increase capacity on the transport network and reduce the rail distance between Melbourne and Brisbane by 200km.²

While these are marked improvements, they will still leave rail transport at a relative disadvantage to road transport – which can move freight door-to-door in just 22 hours. Moreover, further improvements to road infrastructure and road freight technology could result in the Inland Rail project becoming an underutilised asset, unable to compete on either price or timeliness with road transport.

If rail is to gain any sustainable competitive advantage in the Melbourne to Brisbane corridor, it needs to provide a Terminal to Terminal service under 20 hours, or even less. Rail operations within this timeframe would be able to provide a reliable “second morning delivery”, which would make them competitive with the service levels provided by road transport.

While the RTBU recognises that an entirely new alignment poses new challenges for planners and decision makers, the union nonetheless maintains that the Government should try to maximise the benefits of Inland Rail by building the best possible project, not the cheapest possible project. That means building fit-for-purpose tracks on straight, flat and direct alignments to maximise performance and facilitate modal shift wherever possible – not merely cobbling together a jigsaw of new and old sections of track.

¹ Reliability is defined as the percentage of goods delivered on time by road freight, or available to be picked up at the rail terminal or port when promised.

² *Inland Rail Programme Business Case*, 2015, Australian Rail Track Corporation

STATE OF PLAY

In order to build a railway for the future, it's important to look ahead and to predict future needs. It is also important to assess current conditions, and to learn the lessons of the past. The RTBU has concerns that the Inland Rail project, as it is currently configured, has failed to consider the future needs of the rail freight industry and failed to address the failings of past rail infrastructure projects.

Flawed assumptions

Decisions about rail infrastructure projects in Australia have consistently failed to live up to expectations over recent decades. Major rail projects have often been characterised by substantial cost overruns, construction delays and over-ambitious volume forecasts.

The RTBU contends that these problems have been caused by a reliance on flawed assumptions in the project planning stage. The continuing appearance of these flawed assumptions is an indication that project planners either have little experience with rail projects or are choosing to ignore the reality of past experiences in order to give projects a better chance of receiving government approval.

Construction in Existing Corridors

One of the most notable simplistic and flawed assumptions that occurs during the project planning stage is the contention that additional tracks can generally be constructed within an existing rail corridor land footprint. Experience shows that this simply is not the case, particularly with highly utilised single-track passenger and freight corridors. Unlike cars and trucks, trains cannot always take detours, so disruption to a corridor can have debilitating impact on rail services. It is often impractical to close these corridors for any prolonged period to allow the uninterrupted construction of the new tracks within the existing land footprint.

Moreover, upgrading existing track formation is often unsuitable for the higher axle weights required for modern efficient freight services.

Optimism Bias

Media stories about infrastructure projects suffering from “cost blow outs” or “going bust” have become commonplace – and not just in the rail sector. Research has found a tendency for the proponents of infrastructure projects, both in the bureaucracy and in the private sector, to habitually make optimistic assumptions about costs and revenues during the planning stages of infrastructure development. This phenomenon has become known as “optimism bias”.

The UK National Audit Office states that:

“Optimism bias in public sector projects is not a new phenomenon. But it is one that persists, frequently undermining projects’ value for money as time and cost are under estimated and benefits over estimated.”³

Optimism bias in infrastructure projects leads to the creation of “lowball” estimates in order to seek endorsement and commitment of decision-makers. Over time, however, the actual costs of a project tend to creep up. In response, decision makers turn to “value engineering” to keep capital

³ UK National Audit Office, *Over optimism in government projects*, <http://www.nao.org.uk/report/optimism-bias-paper>, accessed 18 June 2014.

infrastructure costs down, which in turn diminishes the capability of the asset and compromises quality and performance.

Ultimately these projects:

- fail to meet the Government's expectations for being "on time and on budget";
- fail to deliver expected benefits for industry; and
- fail to deliver expected economic and productivity benefits.

Inland Rail provides policy makers with the opportunity to learn from the mistakes of the past where project performance outcomes have been compromised in order to fit an imposed budget.

If done right, a project of this magnitude has the potential to deliver benefits for over 50 years and across generations. Therefore, it is imperative that governments avoid taking a short-term cost cutting approach, as this ultimately undermines the project's medium-long term economic and productivity benefits.

Equity Financing and Public Private Partnership (PPP)

Using a PPP to fund the most challenging and expensive part of the Inland Rail Project should be avoided.

The payment of ongoing availability charges would be required in order to provide a commercial return. It is highly likely this payment would be made to an overseas infrastructure investor who would benefit for many years regardless of the economic value. In this low interest environment, it makes sense that the Federal Government uses its borrowing power to get the best value for taxpayers over time.

Externalities

Land transport planning in Australia has consistently failed to factor in the positive externalities associated with rail infrastructure. For example, modal shift from road to rail can reduce the amount of wear and tear on the road network, thus reducing road maintenance requirements and increasing the lifespan of road infrastructure. Rail is also around 20 times safer than road transport⁴ – therefore moving more of the freight task onto rail (especially dangerous goods such as chemicals, fuel and explosives) would lead to fewer deaths and injuries on Australian roads.

Rail transport is more energy efficient and produces fewer carbon emissions than road-based transport, so it also has positive environmental externalities. For the same reason, greater use of rail can reduce our national reliance on imported oil, and therefore our national economic exposure to disruptions in the global oil supply chain.

With Australia's freight task expected to more than double by 2050, it is clear that the commercial transport sector is going to place increasing strain on the road transport system. Infrastructure will be stretched to capacity, and our urban areas will suffer from even greater levels of traffic congestion. This in turn will have a negative impact on national productivity. It is clear that rail will have to carry a greater share of the total transport task in order to minimise the future economic costs of urban

⁴ Assoc Prof Phillip Laird, *Too many loads on our roads when rail is the answer*, The Conversation, 14 March 2014.

congestion, and to protect motorists from a massive increase in the number of trucks on Australian roads.

Furthermore, optimised and premium rail corridor alignment allows for operation of higher productivity trains. High-standard, 21st century below rail infrastructure also would allow for the introduction of European low-noise and low-emission rolling stock and locomotives.

The NSW Independent Pricing and Regulatory Tribunal (IPART) examined the relative external costs associated with rail and road transport as part of its 2012 Review of access pricing on the NSW grain line network – including external costs such as air pollution, noise, greenhouse gases, water, nature and landscape, accidents and congestion. IPART estimated that the non-urban road transport has external costs of 2.79 cents per net tonne kilometre (c/ntk), while non-urban rail has external costs of just 0.24 cents per net tonne kilometre (c/ntk).⁵

Recent ARTC Experience

The recent experience of the ARTC is littered with cases of ‘optimism bias’ in project formulation and under-delivery on project outcomes.

For example, ARTC upgrades to the North-South line have failed to deliver promised improvements, and in fact have led to the need for significant additional remediation work to fix problems with the “upgraded” tracks. This occurred because much of the investment was about changing to concrete sleepers and changing rails without improving the formation or alignment, without any overall benefit to travel times. The RTBU has previously highlighted this flawed investment strategy and pointed out, that sleeper changes without formation improvements can result in numerous temporary speed restrictions.

Despite repeated closures of the North-south line due to the appearance of mudholes, ARTC was extremely reluctant to accept that its assumptions about the efficacy of the re-sleepering program were wrong. As the RTBU commented at the time -

“It’s unbelievable that it’s taken so many high-risk incidents to occur in such close succession, for someone to realise the absurdity of the situation and do something about it, particularly when you’ve had drivers and other independent experts outside of the union, telling the ARTC that the techniques they have used have problems. And we’re seeing those problems through these mudholes that occur time and again.”⁶

In general, ARTC seems to have focussed on a short-term incremental approach to corridor upgrades, prioritising maintenance reduction benefits of sleeper replacements on existing formation and alignment, ahead of quantum improvements to the quality and competitiveness of the network.

ARTC is perceived in the rail industry as primarily a track asset manager and a provider of rail access – not as an organization responsible for facilitating increased market share for rail. From our discussions with supply chain customers and above-rail operators, there is a common perception in the industry that ARTC does not have a coherent strategy for market growth or improved network performance. This is a significant concern for the RTBU, and for the industry.

⁵ NSW IPART, *Review of Access Pricing on the NSW Grain Line Network*, 2012, p35.

⁶ Former RTBU National Secretary, Bob Nanva, quoted in *Railway in poor condition*, ABC Radio’s PM Program, 26 August 2011

A road building approach compared to rail investment

In contrast to the incremental, ad hoc development of Australia's railway network, the national road network has developed through a constant pipeline of major projects. Upgrades to major national highways rarely involve a redevelopment of existing roadways – they usually involve entirely new roads built on alternative alignments, with the older infrastructure either left to decay or turned into service roads for towns and properties along the route.

Road network expansion and upgrades are based on the “predict and provide” model often at no direct cost to the users. In some instances, the road users like heavy freight vehicles derive a benefit without funding the improvement. Heavy road vehicles derive a significant benefit through reduced transit times, increased capacity, and lower grades. In turn they also derive the benefit of a reduction in fuel cost which only partially contributes to the road network upkeep. The road freight industry has also benefited by cross-subsidisation of general road users.

On the other hand, rail investment normally requires a legally binding commitment by the users to underwrite any investment in upgrading the rail network on a commercial basis. Above rail users are required to preserve access by committing to minimum usage levels and the penalty regime of the “take or pay” system, where if they do not use a contracted path they are still required to pay for access. In addition to this impost on rail there are substantial barriers to entry for an above rail operator, as the capital costs include funding of rolling stock, locomotives, fuelling and provisioning facilities, as well as the regulatory requirements.

The experience of the east-west corridor to Perth, which has achieved a modal share of 71 per cent⁷, shows that if the most direct and unconstrained corridor/path is adopted, the economies of scale and productivity will support a high adoption of rail by supply chain users.

If the government should treat the inland rail project in the same way, then the proposed alignment would be replaced with a more direct ‘greenfield’ alignment following the shortest and most efficient route. This would maximise the positive externalities related to the project, such as the reduced maintenance requirements and improved safety outcomes on the road network arising from modal shift to rail.

Toowoomba to Brisbane - the most important link

The construction of the rail alignment from Toowoomba to the Port of Brisbane will be the most technically challenging part of the Inland Rail project. This is due to the challenges of the terrain from Toowoomba to Grandchester. This section, however, also promises to provide the most “bang for your buck” in terms of national economic benefits, as it would unlock a current infrastructure bottleneck which impedes the efficiency of rail transport in and out of the Port of Brisbane.

Currently trucks between Port of Brisbane and west of Toowoomba (Charlton) take 2hrs and 20 minutes. Rail's average transit time between Port and Brisbane and west of Toowoomba (Gowrie), however, is between 6 hours and 8 hours. The section from Gowrie to Grandchester is approximately 104 route kilometres and would take over 3 hours if trains had a clear run - due to the legacy of 19th Century alignment and engineering standards (the average speed over this section is around 34 km an hour). This does not even take in to account the delays for crossing trains on single tracks. This generally means the practical safe transit time of 8hrs on the Toowoomba to Grandchester rail

⁷ National Transport Commission (NTC), *Freight and Mode Share Forecasts – A Review of 'The Future of Freight'*, March 2006, p6.

corridor – which is an uncompetitive transit time for rail for time sensitive general and agricultural freight.

An upgrade of Gowrie to Grandchester on the best-case alignment, however, would result in a route length of 67.6 km, and a transit time estimated at 67 minutes at an (conservative) average 60 kph for freight trains.

The RTBU believes the recommendations of the TMR/QR Gowrie to Grandchester (G2G) Rail Corridor Study in 2003 should be considered and adopted for the project, as it provides an immediate benefit to all existing above rail freight operators and reduces below rail maintenance costs. Furthermore, the 2003 G2G alignment was designed to allow for up to 200 kph for passenger trains with 2 tracks from Grandchester to Toowoomba (Gowrie) with a dual track tunnel. This was to accommodate both future passenger and freight growth. However, as an example of “value engineering” and compromising performance, ARTC have chosen to compromise this alignment and future-proofing objective, instead choosing the (in the short-term) lower cost option of a single track and slower alignment.

Experience has shown that the cost of rail construction within ‘brownfield’ environments is up to 200% more than the cost of construction in regional ‘greenfield’ environments. The construction of a dual gauge double track corridor with higher engineering standards (capable of accommodating double stack containers) would provide an excellent opportunity to benchmark construction risks and costs associated with construction and staging within “brownfield” and “greenfield” rail environments.

Unconstrained access from Acacia Ridge to the Port of Brisbane

The RTBU notes that the Inland Rail business case did not find a need to construct a dedicated freight link from Acacia Ridge to the Port of Brisbane as part of the Inland Rail project. Indeed, the business case does not anticipate a need for the extension until 2040-2041.⁸

In the interim and in the first 10-20 years the Federal Government should take responsibility for providing unconstrained access to the Port of Brisbane, before investment in an alternative dedicated freight connection to the Port of Brisbane can be justified.

Delivering unconstrained access between Inland Rail and the Port of Brisbane is essential to maximising the economic, social, environmental and other benefits of the project.

Currently, only 2.5 per cent of containerised freight at the Port is moved by rail. The Committee would be aware that Deloitte Access Economics recently found that increasing this modal share to 30 per cent by 2035 has the potential to:

- Remove approximately 2.4 million trucks from the road network;
- Increase gross regional product in the Port of Brisbane Catchment area by around \$5.4 billion over the period from 2018-2045;
- Free up \$155 million annually that is currently being spent on road maintenance;
- Reduce crashes involving heavy vehicles, which currently account for approximately 15 per cent of fatal crashes in Brisbane; and
- Reduce greenhouse gas emissions.⁹

⁸ *Inland Rail Programme Business Case*, 2015, Australian Rail Track Corporation.

⁹ Deloitte Access Economics, *Connecting Inland Rail to the Port of Brisbane*, September 2019.

The relationship between Inland Rail and Cross River Rail

If a connection to the Port of Brisbane is vital to ensuring Inland Rail is the best possible project, it follows that planning is required to ensure there is adequate capacity and capability for rail freight to access the Port.

A rail line between Acacia Ridge and the Port currently exists, but this is a shared network – freight and passenger services both use the line. Shared access is not sustainable with the current track infrastructure given the projected growth in South East Queensland’s population, as well as the forecast increase in the region’s freight task. For this reason, the RTBU has previously made submissions and representations to the Queensland Government about the importance of extending the Cross River Rail (CRR) project to Yeerongpilly similar to the (long-tunnel option of 2011-12), rather than to Dutton Park (short-tunnel option of 2017). The long tunnel option will enable freight and passenger rail services to be separated, guaranteeing 24/7 access to the Port of Brisbane.

If the short tunnel option proceeds as planned, there will be an immediate (and growing) increase in passenger rail services along the Dutton Park-Yeerongpilly rail corridor from 2023 onwards. This is problematic because Inland Rail is expected to start directing increased freight rail services along this same corridor from 2024.¹⁰

If capacity constraints between Acacia Ridge and the Port of Brisbane are not addressed, they will have a severe impact on rail freight and all relevant stakeholders. The RTBU strongly supports Inland Rail and CRR. It is essential that the CRR project makes adequate allowance for rail freight accessing the Port of Brisbane, or risk undermining the effectiveness the Inland Rail project. It is evident that Federal funding is required to ensure the long-tunnel CRR option proceeds. To this end, it is vital that the Federal and Queensland Governments work to integrate the planning for both projects moving forward to ensure the effective use of taxpayer money, in both the short **and long-term**.

It may be cheaper in the short-term for the Federal Government to end the Inland Rail project at Acacia Ridge and/or to avoid providing the funds to ensure delivery of the long-tunnel CRR option, but any immediate savings are far outweighed by the long-term economic, social and environmental costs associated with an increasingly congested Dutton Park-Yeerongpilly rail corridor.

Therefore, the RTBU calls on the Federal Government to provide substantial additional funding to the Queensland Government to extend the CRR tunnel to Yeerongpilly. There is the opportunity to extend the tunnel to Yeerongpilly where there is a wide corridor, which will minimise any adverse community impact. Such an arrangement would reflect the original 2011-2012 CRR project.

The Federal Government should also provide additional funding for surface tracks from Yeerongpilly to Salisbury junction, thereby creating long-term benefit for freight from Inland Rail to access the Port of Brisbane.

Furthermore, we suggest that the Federal Government provide additional funding from Dutton Park to Lytton Junction to increase rail freight capacity and create a virtually separate freight corridor to the Port of Brisbane.

Importantly, this would avoid the option of building an expensive and separate dedicated connection to the Port of Brisbane from Acacia Ridge.

¹⁰ RTBU Queensland Branch, *Submission to the Cross River Rail Request for Project Change*, February 2017

A WORLD-CLASS RAIL PROJECT

The RTBU therefore recommends that the Inland Rail project proceeds using the following guiding principles:

Transformational

Inland Rail is a transformational and intergenerational nation building project, which must deliver 21st Century performance and productivity benefits. There will be only one opportunity to get it right, so it is vital that it is not compromised by short-term financial considerations to minimise the upfront capital costs. Short-term compromises and cost reductions will not deliver a quantum shift in land transport in Australia on the north-south corridor that services the bulk of Australia's population.

Journey Time

The journey-time from one end to the other should be under 20 hours, enabling a return trip to be completed in two days. This would facilitate a high-frequency national 'conveyor belt' for freight up and down the north-south corridor along the eastern states.

Competitiveness

For a new Inland Railway to be competitive with road transport, the infrastructure should be constructed more to North American Class I Railroad standards rather than ARTC mainline standards. This would include 32 tonne axle loads, and minimum curve radii of 2200 metres, rather than the 800 metres suggested by the ARTC Inland Rail Alignment Study (IRAS) which is too tight for modern fast, efficient freight trains.

Focus on the Port of Brisbane to Toowoomba

The project should focus on the section that will deliver the most value to the economy – the Toowoomba to Port of Brisbane corridor.

This section would support export freight from west of Toowoomba to the Port of Brisbane and the economic benefit of modal shift from road to Rail from this important economic region.

The RTBU believes that the most logical stage of Inland Rail to focus on is the Toowoomba (Gowrie) to Grandchester rail upgrade. This is the most challenging and problematic section of the entire route but fixing it will bring the most immediate benefits to the industry and to national productivity.

CONCLUSION

For far too long, rail has been treated as the poor cousin of road. Road freight has benefited from political favour and cross subsidisation, however rail has had to be more self-sufficient.

Infrastructure projects – both road and rail – have proceeded on the basis of flawed assumptions, and decisions have been made without reference to the positive externalities associated with rail transport. This has led to market failures – especially in terms of increased congestion on our urban road networks, increased transport pollution, and decreased road safety. If Australia is to build the transport infrastructure of the 21st century, then it must learn from the mistakes of the past.

The current proposal for Inland Rail may be an incremental improvement compared to the coastal rail route, but coastal rail should not be the benchmark against which the merits of Inland Rail are judged. Rather, the Inland Rail project should be benchmarked against its primary competitor – road transport.

The Inland Rail is a once-in-a-generation opportunity to redress the imbalance in Australia's approach to land transport infrastructure, and to stimulate economic development along the railway route. But if we, as a country, get this project wrong, then the opportunity will be lost, and the Inland Rail project will become a "white elephant". The RTBU is a strong supporter of the Inland Rail project, however we strongly believe that the proposal should be re-worked to deliver the best possible outcome for the industry and for national productivity.

The RTBU appreciates the opportunity to make this submission. We are happy to clarify any aspects of this submission and welcome the opportunity to provide additional information to the Committee if requested.

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