Northern Australia Transport Study



Study Report

July 2018



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Business Stakeholder Group

This Study benefited from the valuable input and guidance of members and proxies of the Northern Australia Transport Study Business Stakeholder Group. The Group comprises a broad range of members from across the aviation and maritime industries as well as a number of representatives from the business community.

Business Stakeholder Group Membership

Mr John Borghetti, Chief Executive Officer, Virgin Australia Mr Daniel Bowden, Chief Executive Officer, Airnorth Mr Norris Carter, Chief Executive Officer, North Queensland Airports Mr Alan Joyce, Chief Executive Officer, Qantas Airways Ltd Ms Patricia O'Callaghan, Chief Executive Office, Townsville Enterprise Mr Peter Renton, Director, Queensland Trucking Association Mr Troy Setter, Chief Executive Officer, Consolidated Pastoral Company Mr John Sharp, Deputy Chairman, Regional Express Holdings Ltd Mr David Crombie, Chairman, GrowNORTH Ms Ranee Crosby, Chief Executive Officer, Port of Townsville Mr Keith Price, Consultant, McAleese Transport Mr Michael McConachy, Chairperson, Kimberley Development Corporation Mr Denis Pierce, Chairman, Australian Tourism Export Council The Hon Shane Stone, Former NT Chief Minister Mr Michael Thinee, Chief Executive Officer, West Wing Aviation

(Note: Titles are as of the formation of the Group and may not be current)

The Study also benefited from the valuable input of Maritime Industry Australia Limited.



Executive Summary

The Northern Australia Transport Study (the Study) is an initiative of the *Our North, Our Future: White Paper on Developing Northern Australia* (the White Paper). The Study considers key challenges for aviation and maritime transport in Northern Australia, and provides analysis that will assist industry, governments and other stakeholders to develop solutions to those challenges. The Study has been informed by the White Paper and the Transport and Infrastructure Council's *National Remote and Regional Transport Strategy.*

The transport industry is vital to the long-term development of Northern Australia, due to its role as an enabling industry that links the region's dispersed and remote populations, while supporting the growth of other essential industries such as resources, agribusiness and tourism.

<u>Aviation</u>

Given the vast scale and scattered populations of Northern Australia, aviation plays a crucial role in connecting communities. It also provides significant economic opportunities to leverage the region's proximity to Asia through improved air transport links.

Aviation in Northern Australia represents 11.8 per cent of Australia's domestic passenger movements and 2.6 per cent of our international passenger movements. Traffic varies across Northern Australia and is concentrated in a limited number of airports – for example, Cairns and Darwin receive the overwhelming majority of international passenger movements. Subdued passenger demand will continue to act as a reflexive constraint on aviation infrastructure investment, as lack of demand may continue to dampen appetite for investment.

This study identifies a range of aviation opportunities, including:

- Infrastructure proponents taking advantage of modern and innovative strategies for infrastructure financing, including the Northern Australia Infrastructure Facility and the Building Better Regions Fund to stimulate investment;
- Businesses exploring innovative business partnerships to share risk and support airline efforts to stimulate the market with lower fares and more services;
- Businesses continuing to explore options to 'hub' aviation traffic through Northern Australia enroute to Asian destinations; and
- Businesses capitalising on Australia's liberal approach to negotiating bilateral air services arrangements.

Any initiative to expand tourism-focused aviation services will need be developed in conjunction with local councils, local business and with relevant tourism organisations to ensure attractions and services are available, and are of suitable quality to maximise demand and sustainability.

Cost continues to be a significant impediment to the growth of aviation in Northern Australia. The business stakeholder group identified the particular impact of airport and security charges, the Passenger Movement Charge, Border Agency costs and fuel.



While the case for increased airfreight exports from Northern Australia is intuitively compelling, various interrelated issues present significant challenges to growth. Given the scale and diversity of Northern Australia, transport providers are likely to be best placed to address issues on a caseby-case basis, which takes the growth requirements of individual communities and regions into account.

<u>Maritime</u>

Australia's isolated status as an island continent ensures that the movement of goods by sea will continue to be essential to the economy. Over 99 per cent of national exports by volume, and around 80 per cent by value are transported by sea. The five largest Northern Australian ports handle approximately over 40 per cent of our international maritime exports in value terms.

The maritime industry in Northern Australia can be divided into a number of sectors, each facing specific operational challenges. These sectors include charter (which primarily export bulk commodities and agricultural goods) and scheduled liner shipping services for containerised and breakbulk cargo. Ports also provide transhipment and domestic distribution transport services, and facilities for the oil and gas industry.

The maritime tourism industry also has significant potential for growth in Northern Australia. The cruise sector is the fastest-growing sector with 14.8 per cent growth recorded in 2015, while superyachts are a growing industry that could provide some economic benefits to the region if the right conditions are put in place.

This study identifies a range of maritime opportunities, including:

- infrastructure proponents taking advantage of modern and innovative strategies for infrastructure financing, including the Northern Australia Infrastructure Facility and the Building Better Regions Fund to stimulate investment;
- the Australian Government's commitment to revisit the legislative framework of coastal shipping to reduce regulatory burden on the shipping industry, thereby improving national prosperity; and
- growth in the cruising industry and supporting the emerging superyacht sector.

However, the available opportunities must be situated within the context of global challenges to maritime growth, which may have a disproportionate effect on Northern Australia due to its isolation and marginal profit profile. Constraints faced by the industry include ensuring that adequate infrastructure is available to support growth; the impact of oversupply in the global liner trade and the effect of global market fluctuations on costs; and the limitations on year-round operations imposed by a tropical monsoon climate.

Chapter 1: Context

1.1 Background

The Northern Australia Transport Study (the Study) is a measure set out in *Our North, Our Future: White Paper on Developing Northern Australia* (the White Paper). The Study considers key transport challenges for Australia's North, and identifies strategic opportunities to improve transport connections. The Study is based on analysis of available data, and guidance from a panel of key industry experts.

The analysis in the Study provides a basis for considering Northern Australia's complex transport challenges. As acknowledging cost and risk are an inevitable part of doing business in the North, the panel of experts agreed the Report should focus on exploring opportunities and reducing costs where possible.

The expert panel also acknowledge that many of the opportunities and suggested strategies identified in this Study are already understood, and are being implemented by certain businesses or in particular contexts. The panel also acknowledges in the ongoing implementation of government initiatives in Northern Australia aiming to address some of the issues identified in this Study. Nevertheless, the panel recognise the value in collating and sharing these strategies through the Study for the benefit of all stakeholders.

1.1.1 The White Paper on Developing Northern Australia

The Australian Government released *Our North, Our Future: White Paper on Developing Northern Australia* (the White Paper) on 18 June 2015. The White Paper acknowledged the untapped potential of Northern Australia – encompassing all of the Northern Territory and those parts of Western Australia and Queensland above the Tropic of Capricorn – and stressed the importance of ensuring government has the right policy settings in place to create successful business environments and unlock this potential. This included policy initiatives to:

- Harness opportunities to capitalise on the region's strengths, including ways to advance trade, cultural and investment links with the Asia Pacific region and provide a regulatory and economic environment that is conducive to business investment, competitiveness and competition;
- Manage impediments to growth, including from regulatory frameworks, land access arrangements, environmental constraints, the lack of coordinated planning; and
- Create the right conditions for private sector investment, innovation, enterprise growth and business formation.

In order to realise the Australian Government's vision for the North, the White Paper outlined some key themes to help guide action, including:

- Making it easier to use natural assets;
- Providing a more welcoming investment environment;
- Investing in infrastructure to lower business and household costs;



- Reducing barriers to employment; and
- Improving governance.

The White Paper identified 51 measures and initiatives to guide the future of the North, covering: the management of water and land resources; reducing red tape and other barriers to greater investment; providing funding and loans for infrastructure investment; creating a more flexible labour market system and measures to addressing shortages where it is difficult to source Australian labour; and establishing a transparent and accountable framework for measuring progress on commitments.

Transport was identified as a critical sector in the long-term development of Northern Australia given its role as an enabling industry, linking the region's dispersed and remote populations as well as supporting the growth of the five main industry pillars identified in the White Paper, being:

- Food and agribusiness;
- Resources and energy;
- Tourism and hospitality;
- International education; and
- Healthcare, medical research and aged care.

In response to the White Paper, the Government has made a number of commitments, Including:

- In recognition of the centrality of transport to the region, in the 2015 White Paper the Australian Government made a number of commitments to improve transport links, including \$600 million over five years for the Northern Australia Roads Programme (NARP); the \$100 million Northern Australia Beef Roads Programme; and \$5 million to undertake freight rail feasibility studies in northern Australia as part of the 2015 Northern Australia White Paper.
- Transport infrastructure projects (including road, rail, ports and airports) are also expected to benefit from the Australian Government's \$5 billion Northern Australia Infrastructure Facility (NAIF) as well as initiatives for the better use of existing infrastructure and improving cattle supply chains.
- The White Paper noted aviation's importance for connecting communities in the region, particularly during the wet season, and the vast trade and tourism opportunities that could stem from greater aviation links to Asia. The Australian Government committed \$39.6 million for airstrip upgrades and air services under the Regional Aviation Access Program to help provide essential support to regional and remote communities. Funding was also provided to establish a permanent border agency presence at Townsville to help grow their international footprint.
- For the maritime sector, the Australian Government noted its proposed reforms to improve the viability and efficiency in the maritime industry, in order to increase coastal trade between Northern Australia and the southern regions and stimulate further growth in the lucrative cruising and superyacht markets.



1.1.2 COAG Transport and Infrastructure Council

The Council of Australian Governments (COAG) Transport and Infrastructure Council (the Council) brings together Commonwealth, State, Territory and New Zealand Ministers with responsibility for transport and infrastructure issues, as well as the Australian Local Government Association. The Council's reform priorities include:¹

- Sustainable funding for transport and infrastructure;
- Embracing innovation and technology in transport and infrastructure;
- Productive and liveable cities and regions; and
- Maximising freight productivity.

The Council has oversight of key transport and infrastructure strategies, and endorsed the National Remote and Regional Transport Strategy (the Transport Strategy) in 2015, the National Land Freight Strategy (the Land Freight Strategy) in 2013, and the National Port Strategy (the Port Strategy) in 2012.

1.1.2.1 The National Remote and Regional Transport Strategy

The Transport Strategy outlines the transport challenges faced in regional and remote Australia and high level actions to address those challenges. The Transport Strategy was also designed to align with the White Paper and initiatives to improve transport connections in Northern Australia.

The Transport Strategy was informed by consultation between governments and key stakeholders as part of the 2014 National Remote and Regional Transport Services Forum and written submissions to the consultation draft of the Transport Strategy, released in May 2015. A copy of the final Transport Strategy is available from Council's website at: www.transportinfrastructurecouncil.gov.au.

1.1.3 The National Freight and Supply Chain Strategy

In November 2016, the Australian Government announced the development of a national freight and supply chain strategy (the Freight Strategy). The Freight Strategy will be developed to respond to Infrastructure Australia's Australian Infrastructure Plan released on 17 February 2016, and will be informed by the establishment of a comprehensive, independent inquiry to determine how to lift the productivity and efficiency of Australia's freight supply chain (the Inquiry).

The Inquiry will examine regulatory and investment barriers as well as opportunities to improve freight capacity and reduce business costs. Once complete in the first quarter of 2018, the Inquiry will be a key input to ensure the Freight Strategy is comprehensive, and articulates areas of reform and investment in Australia.

The Inquiry will draw on both industry stakeholder input and data and research generated through government agencies such as the Australian Bureau of Statistics, the Department of Infrastructure

¹ transportinfrastructurecouncil.gov.au/about/files/2017_Transport_and_Infrastructure_Council_Terms_of_Reference.pdf



and Regional Development's Bureau of Infrastructure, Transport and Regional Economics (BITRE), CSIRO's Data61, as well as the work of the Transport and Infrastructure Council's Heavy Vehicle Road Reform work program.

The Freight Strategy was a key recommendation of Infrastructure Australia, and will build on the existing work of the Council of Australian Governments (COAG), including the National Land Freight Strategy agreed to in 2013, and the 2012 National Port Strategy.

1.1.4 Regional Airfare Inquiries

In response to community interest, a number of inquiries have been established to consider the cost of regional airfares.

- The WA Legislative Assembly, Economics and Industry Standing Committee recently completed an inquiry, *Perceptions and Realities of Regional Airfare Prices in WA*. The final report was published on 1 December 2017. The report included 48 findings and made 13 recommendations.
- On 16 November 2017, the Senate moved that the Rural and Regional Affairs and Transport References Committee establish an inquiry into the operation, regulation and funding of air route service delivery to rural, regional and remote communities. The committee is scheduled to report by 10 September 2018.

1.1.5 Regions 2030: Unlocking Opportunity

Regions 2030 is the Government's comprehensive plan to unlock the vast wealth of opportunities across regional Australia. The Regions 2030 agenda encompasses the five key focus areas of Jobs and Economic Development, Infrastructure, Health, Education and Communications to guide the future direction of regional development in Australia. The Regions 2030 agenda operates alongside the Regional Australia Ministerial Taskforce and complements a number of White Papers on regional development in Australia.

1.2 Study Process

The Study has been developed through close cooperation with a panel of industry experts selected by former Deputy Prime Minister, the Hon Warren Truss MP and known as the Business Stakeholder Group. The process below was followed to produce the Study:

- 1. The Business Stakeholder Group was invited by the former Deputy Prime Minister to guide the study. Members were selected based on their strong knowledge and leadership in relevant sectors.
- 2. A context paper was developed and circulated to inform discussion. This paper drew together a range of relevant data on topical Northern Australian transport issues.
- 3. The Business Stakeholder Group met, under the direction of the former Deputy Prime Minister, identifying issues, considering opportunities and setting the direction for the study.



- 4. Data and research was drawn together and a study developed based on the initiatives and themes identified by the Business Stakeholder Group.
- 5. This Study was then redistributed and endorsed by the Business Stakeholder Group.

Note: In many cases, detailed data on regional aviation and maritime trends was not available. The Study provides analysis of key trends and issues on the basis of available data, acknowledging these limits may have impacted upon the Study's findings.

1.3 Scope

This study considers Aviation and Maritime transport in Northern Australia. It is focused on identifying strategic opportunities to improve transport connections for the future. It does not include road or rail transport, except where specific issues were identified by Business Stakeholder Group members in the interaction of these modes with Maritime or Aviation transport – other White Paper initiatives consider issues facing other modes.

While the purpose of this Study is to focus on aviation and maritime transport issues, road and rail connectivity are important considerations in the context of ports and airports, due to their role in connecting their hinterlands with maritime and aviation transport: This cannot occur without effective supply chains. Breakdowns in these supply chains can have a significant impact on port efficiency, as well as the broader economy.

The geographic scope of this study is consistent with the Infrastructure Australia, Northern Australia Audit released in January 2015.² It includes the entirety of the Northern Territory, those parts of Western Australia and Queensland above the tropic of Capricorn and ABS Statistical Area Level 2 boundaries (SA2)³ through which the Tropic of Capricorn passes, with some adjustments.

 ² Infrastructure Australia, 'Northern Australia Audit–Infrastructure for a Developing North', Sydney, 2015 ('Northern Australia Audit').
 ³ See Data Notes



Chapter 2: Opportunities and Strategies - Overview

Since a paper entitled 'Some problems of Northern Australia' was presented to the Royal Geographical Society in 1907 by the Bishop of Carpentaria, the key challenges of development in Northern Australia have been identified in many forums - but the path to a sustainable solution has been less clear. Northern Australia faces different climactic, demographic and economic conditions to the Southern states and identification of opportunities for development must take account of these factors to be sustainable over the long term.

Transport services play a fundamental role in addressing the isolation of Northern Australian communities, but the factors affecting development also pose significant challenges for transport providers: low populations, large travel distances and limited demand make delivering efficient and affordable transport difficult to achieve. However, while policy responses to the problems faced by Northern Australia have historically struggled to gain leverage, transport stakeholders, including communities, businesses, governments and transport providers can realise gains for the communities and economies they work within by being innovative in their responses to these challenges, working collaboratively to reduce and manage risk, and to seize opportunities as they arise.

Growth in Asian markets is expected to continue to drive national growth in both aviation and maritime industry demand over the coming years. Capturing a proportionate share of this demand is likely to be a key challenge for Northern Australia, particularly for aviation and non-bulk maritime transport sectors. Expanding trade links with the Asia-Pacific region presents opportunity for increased movement of both people and goods, providing access to global markets and value chains.

Harnessing the opportunities of the future will not be easy.

2.1 Aviation

For aviation, the geographic and economic challenges are exacerbated by limited scalability of infrastructure (e.g. runways, terminals, plant and equipment) and operational needs (e.g. border agencies, security, fuel), increasing unit costs for transport. To counter these factors, aviation stakeholders may consider a range of strategies to improve outcomes. This includes strategies to concentrate demand, implement innovative financing options, diversify revenue streams and seek out new business partnerships.

Innovative business partnerships provide an opportunity to grow the aviation sector in Northern Australia, increasing downstream benefits for the broader community. Risk is a key factor that can keep airfares high on thin and/or marginal air routes. Stakeholders, including the downstream business community, should work with the aviation sector to identify options to share downside risk and reduce airfares. By sharing risk in a collaborative manner, travel costs and tourism barriers can be reduced, to the benefit of local economies more broadly.



Any initiative to expand tourism-focused aviation services will need be developed in conjunction with local councils, local business and with relevant tourism organisations to ensure attractions, accommodation and services are available, and are of suitable quality to maximise demand and sustainability.

Concentrating demand is a key strategy for reducing unit costs of air transport, making aviation more affordable and accessible. Establishing passenger hubs to concentrate passenger movements may present an opportunity to reduce unit costs and make air transport more affordable. Transport to other areas could feed into this hub by spoke transport. This hub-and-spoke model also avoids unnecessary duplication of infrastructure and services, reducing overall capital and operational costs.

Establishing airfreight hubs is another option considered by many communities as a means of creating economic opportunity, providing direct access key overseas markets. However, there are significant economic factors working against the long-term success of airfreight hubs, making them unlikely to be viable in many circumstances. Rather than moving towards dedicated airfreight hubs, a greater focus on moving goods in the cargo holds of passenger aircraft may present a more significant opportunity for regional communities. The relative abundance of passenger aircraft hold capacity means regional communities have a largely underutilised channel available into lucrative global markets. This also presents an opportunity for airlines to diversify their revenue streams.

Financing costs present a substantial challenge for regional airports in particular. Innovative financing options such as those provided through Government initiatives, such as the Northern Australia Infrastructure Facility (NAIF) and the Building Better Regions Fund (BBRF), provide opportunities to finance projects that would otherwise struggle to attract traditional finance. By increasing financing options, these initiatives create opportunities for communities to put the infrastructure in place required to facilitate future growth.

2.2 Maritime

Northern Australia will continue to be reliant on maritime transport for the movement of goods into the foreseeable future. Furthermore, the growth in global demand for goods, combined with the expected significant expansion in the national freight task, can be seen as positive trends. How these trends affect the maritime sector will depend on a range of factors, including transport policy settings.

The need to manage infrastructure investment will continue to be a key theme for the maritime industry. This sector is typified by large, long-term investments and significant infrastructure demands. Large up-front capital costs and investment risks such as sometimes-volatile markets, land tenure issues, and urban encroachment, create significant challenges for businesses and communities to overcome. Ongoing stakeholder engagement, and adopting innovative business practices will help maritime industry members and stakeholders face the challenges of the future.



As with aviation, collaboration between port authorities, communities and port users are invited to collaborate to manage risk and achieve mutually beneficial outcomes. Long-term issues such as securing land tenure and protecting access corridors, requires engagement and agreement between stakeholders. With these longer-term risks adequately managed, ports and their surrounding communities can be better placed to take advantage of future opportunities.

Financing the infrastructure requirements of maritime facilities is also a significant challenge for port operators. As with aviation, innovative financing options such as the NAIF and BBRF provide opportunities for investment that would be unavailable otherwise. These innovative financing options, combined with managing risk through broader collaboration, can make a significant difference to port investment and the opportunities available for communities.

Diversification of activities may be an option to improve benefits for both port operators and broader communities. This includes finding secondary or alternative uses for existing facilities, such as using existing berths for cruise ship arrivals. For commodity ports, in the long-term, diversification may also help reduce exposure to the risks of being reliant on a small numbers of commodities or exporters.

For shipping users, particularly those utilising container services, opportunities exist in importing goods into Northern Australia. Unlike the rest of Australia, the North is a net exporter of full containers, requiring the expensive importation of empty containers to meet demand. This may present an opportunity for businesses to import goods into Northern Australia on commercially advantageous terms. Interestingly, when considered against the significant availability of hold capacity on passenger aircraft, there may be some unique opportunities for businesses to use a mixture of modes for the movement of goods. Flexible and adaptable businesses may be able to generate new economic opportunities by moving inputs by sea and outputs by air.

While growth in the maritime industry is welcomed, it also brings with it some key challenges. Larger vessels create even greater infrastructure demands, particularly for channels and port infrastructure such as cranes, as well as linkages through the port into hinterlands. The rapid cycle of global vessel construction and obsolescence is expected to continue to push ever-larger vessels into lower volume routes. When combined with the growing local freight task, managing vessel size growth will be a key challenge for industry stakeholders. This will require careful forward planning, as well as ongoing engagement between all parties to ensure communities are not over-serviced by vessels too large for the market.

In addition to traditional goods shipping, industry has suggested that the movement of passengers through cruise shipping and the emerging superyacht market may present a significant opportunity for Northern Australia. While these markets are comparatively small, they present an opportunity for benefits for the broader community. By adopting a consultative, coordinated approach to supporting these industries, communities can foster this important trade.

While there are great challenges facing transport in Northern Australia, there are also significant opportunities. Businesses, communities and governments alike will need to be flexible and



adaptable to take full advantage and grow transport in Northern Australia. The Australian Government continues to work with international partners to grow opportunities for trade and transport, and to reduce red tape for business, to ensure the Northern Australian economy can take full advantage of available opportunities.



Chapter 3: Aviation Transport Issues Analysis

Aviation is essential in Northern Australia due to the vast distances and sparsely distributed population centres, driving economic activity and facilitating stronger business and tourism connections, while also enabling the delivery of basic goods and services to remote communities.

3.1 Trends and Developments

Northern Australia represents a small proportion of the overall national aviation market, and has a population that is dispersed across a large geographical area. Northern aviation represents 11.8 per cent of Australia's domestic passenger movements and 2.6 per cent of international passenger movements. This relatively small proportion of aviation activity is distributed across the approximately 870 airports or airfields in Northern Australia.

While there are a large number of airports servicing the North, only 75 of these airports received more than 100 regular scheduled flights in 2016, and even fewer received substantial numbers of passengers. Some larger regional communities have runway, terminal and associated facilities to receive a range of jet aircraft, with 17 airports in Northern Australia having received B737/A320 (or larger) domestic operations in the last five years. This pattern can be summarised as a limited number of larger airports serving the majority of activity, with a large number of very small, dispersed airports sharing the balance. This mixed, distributed market presents unique challenges and opportunities for the sector.

Except for of the twenty-one federally leased airports (of which Darwin, Townsville and Alice Springs are in the North), and Defence facilities, airports in Australia are predominantly owned by local authorities (e.g. local councils), and only a limited number of public aerodromes are operated by the private sector. The pattern of small, distributed airports, owned by local authorities, affects infrastructure investment decisions, often made in the context of other competing financial demands.

The map below shows the location of a selection of key Northern Australian airports. A list of Australian airports receiving Regular Passenger Transport flights is attached.



Map 3.1 Selected Northern Australian Airports



3.1.2 Passenger Movements

As seen in the tables below, eight of the twenty busiest airports in the country are located in Northern Australia, accounting for 9.0 per cent of the total domestic passenger movements and all of Northern Australia's international passenger movements (2.6 per cent of the national total) for the year ending December 2016.

3.1.2.1 Domestic Passenger Movements

Over the past five years, domestic passenger movement trends at the major Northern airports have varied, with Cairns and Darwin being the only airports to record positive growth in each year. Darwin and Hamilton Island airport recorded the strongest positive growth in the latest year while Karratha, Mackay and Rockhampton airports have recorded negative growth over the past four years. These trends are shown in **Table 3.1** below. By way of comparison, the national average annual growth rate for all domestic passenger movements in Australia over the last five years was 1.8 per cent.



| able 3.1 Domestic Passenger Movements and Growth – Selected Ports | | | | |
|---|--|-------------------------------------|--|--|
| Airport | Domestic Passenger Movements (2016) | Domestic Growth 2011 to 2016 (%) | Avg. Annual Domestic Growth 2011 to 2016 (%) | |
| Alice Springs | 612,174 | 2.2 | 0.4 | |
| Cairns | 4,208,221 | 25.2 | 4.6 | |
| Darwin | 1,803,129 | 15.6 | 2.9 | |
| Hamilton Island | 549,822 | 21.5 | 4.0 | |
| Karratha | 494,894 | -33.2 | -7.7 | |
| Mackay | 767,653 | -29.1 | -6.6 | |
| Rockhampton | 584,247 | -16.7 | -3.6 | |
| Townsville | 1,487,948 | -7.4 | -1.5 | |

(BITRE)

Table 3.2 presents data for the nine busiest domestic routes that involve a Northern Australian airport. Seven of these routes involve destinations in Queensland, with five connecting to the nearest major Southern capital of Brisbane.

Services from Cairns have the highest seat utilisation factors, reflecting strong and sustained demand, particularly from leisure travellers. Routes supporting the resources sector have some of the lowest seat utilisation factors, with traffic levels also currently well below levels recorded in previous years.

| able 3.2 Seat Utilisation Factors and Domestic Growth – Selected Routes | | | | | |
|---|--|---|--|--|--|
| Domestic Passengers 2016 | Seat Utilisation Factor (%) | Domestic Growth 2011 to 2016 (%) | | | |
| 1,346,922 | 82.7 | 21.6 | | | |
| 1,115,255 | 83.6 | 24.7 | | | |
| 976,573 | 74.3 | -0.4 | | | |
| 823,392 | 83.4 | 63.1 | | | |
| 678,478 | 74.3 | -25.4 | | | |
| 563,779 | 73.0 | -7.0 | | | |
| 490,644 | 57.9 | -27.8 | | | |
| | Domestic Passengers 2016 1,346,922 1,115,255 976,573 976,573 823,392 678,478 563,779 490,644 | Domestic Passengers 2016Seat Utilisation Factor (%)1,346,92282.71,115,25583.6976,57374.3823,39283.4678,47874.3563,77973.0490,64457.9 | | | |



| City Pair | Domestic Passengers 2016 | Seat Utilisation Factor (%) | Domestic Growth 2011 to 2016 (%) |
|----------------------|--------------------------------|--------------------------------|-------------------------------------|
| Brisbane - Darwin | 407,688 | 78.6 | 11.3 |
| Perth – Port Hedland | 339,107 | 55.2 | -8.4 |
| | | | (BITRE) |

Case Study: Demand changes in the Perth-Karratha Route

The Perth-Karratha route has seen significant variation in passenger volumes over recent years, driven by fluctuations in demand from the resources sector. In the period December 2008 to December 2009, passenger numbers grew by 445 per cent from approximately 116 thousand passengers to nearly 520 thousand. Passenger numbers continued to grow at a rate of over ten per cent for a number of years, reaching over 646 thousand in the year ending December 2011.⁴

Changes in resources sector demand, driven by changes to operations, as well as a move from development to production phases, saw passenger demand decrease significantly. In the period 2011 to 2016, passenger numbers on the route reduced by nearly 30 per cent. These significant fluctuations highlight the different factors driving demand for aviation services supporting the resources sector.

Three of Australia's fastest-growing routes between 2011 and 2016 serviced Northern Australia. **Table 3.3** shows routes that either originate or terminate in a Northern Australian airport for which data was published in 2011 and in 2016.

| City Pair | Passengers (2015-16) | Growth 2010-11 to 2015-16 (%) |
|------------------------|----------------------|-------------------------------|
| Cairns-Melbourne | 802,231 | 60.4 |
| Brisbane-Gladstone | 367,934 | 56.1 |
| Newman-Perth | 319,450 | 45.5 |
| Ayers Rock-Sydney | 170,972 | 40.8 |
| Hamilton Island-Sydney | 249,173 | 38.3 |

Table 3.3Fastest Growing Routes 2010-11 to 2015-16

(BITRE)

⁴ Bureau of Infrastructure, Transport and Regional Economics (BITRE), 'Statistical report, Domestic Airline Activity Annuals 2009-2011', Canberra, 2009-11



3.1.2.2 International Passenger Movements

While domestic tourism is the largest segment of Australia's tourism industry, Tourism Research Australia predicts that the inbound tourism market will continue to grow at a robust pace.

Asian markets are expected to continue driving growth in the next few years led by China (up 18.5 per cent in 2016–17 and 13.3 per cent in 2017–18) and India (up 9.4 per cent and 9.7 per cent, respectively). Despite a slowing of the transitioning Chinese economy, Tourism Research Australia predicts that China will overtake New Zealand in 2017-18 to become our largest inbound source market. Indonesia, Malaysia, Hong Kong, Japan, and South Korea are also expected to experience solid growth, as are our traditional markets of New Zealand and the USA. This reflects the rise of the middle class in the Asia-Pacific, increased connectivity in global markets, and the ageing demographic profile of many nations, which will see international tourists travelling for longer and spending more.⁵

As outlined in the White Paper, in 2013-14 Northern Australia was the destination of choice for 15.9 per cent of international overnight visitors.⁶ Capturing a proportionate share of this growing market is likely to be a key challenge for the Northern Australian tourism industry.

Four Northern Australian airports received international services in 2016 – Cairns, Darwin, Port Hedland and Townsville. Scheduled international air services between Port Hedland and Denpasar recommenced in April 2015 and scheduled air services between Townsville and Denpasar recommenced in September 2015.⁷ Traffic at Cairns in 2016 is well below the peak recorded in 2005 (at over 862,000 passengers) while traffic at Darwin peaked in 2013 (at approximately 333,000).

⁵ Tourism Research Australia, 'Tourism Forecasts 2016', 2016.

⁶ Commonwealth of Australia, 'Our North, Our Future: White Paper on Developing Northern Australia', 2015. Original citation draws on unpublished data from Tourism Research Australia, 2014.

⁷ Jetstar's Townsville – Denpasar service has since been withdrawn.



| Table 3.4 Interr | rnational Airline Revenue Passengers – Northern Airports (2016 Totals) ⁸ | | | | |
|------------------|---|---|---|--------------|--|
| Airport | International Passenger Movements (2016) | International Growth 2011 to 2016 (%) | Avg. Annual International Growth 2011 to 2016 (%) | Airport | |
| Cairns | 642,293 | 27.4 | 5.0 | Cairns | |
| Darwin | 272,069 | -16.8 | -3.6 | Darwin | |
| Port Hedland | 8,521 | | | Port Hedland | |
| Townsville | 41,479 | | | Townsville | |

(BITRE – Airport Traffic Data)

One of the key factors often identified as an opportunity for Northern Australia is its proximity with Asia. Travel distances to Asia are significantly lower for Northern airports when compared to key Southern destinations. However, travel distances are nonetheless significant, often requiring the use of wide-bodied aircraft, which currently dilutes the benefits of proximity to the Asia-Pacific Region to some extent. An example of approximate travel distances to Singapore and Hong Kong from key Northern and major gateway airports is below:

Table 3.5 Approximate Air Distances to South-East Asian Aviation Hubs

| Airport | Approximate air distance to Singapore (km) | Approximate air distance to Hong Kong (km) |
|--------------|---|---|
| Port Hedland | 2900 | 4800 |
| Darwin | 3300 | 4300 |
| Perth | 3800 | 6000 |
| Cairns | 5000 | 5600 |
| Townsville | 5200 | 5800 |
| Adelaide | 5300 | 6900 |
| Melbourne | 6000 | 7400 |

Despite its close proximity, most narrow-body aircraft (e.g. A320, B737) typically do not have sufficient range to reach Northern Australian airports as part of an economically viable direct service from many of the more popular and populous destinations in Asia. The additional capacity

⁸ Note: no growth figures are shown for Port Hedland and Townsville as international services at both airports only operated during part of 2011.



and costs of operating wide-body jets, which do have the necessary range, means services using these aircraft have an even higher demand threshold to operate profitably.

However, the introduction of new generation narrow-body passenger aircraft such as the A320neo and B737 MAX range may have a significant impact on the commercial viability of Northern Australian routes. These aircraft have increased fuel burn efficiency and up to 926km (500nm) of increased range. As **Table 3.5** above indicates, planes with increased range may help to address the current need for wide-body aircraft to fly to key destinations in Northern Australia, potentially improving yield and profit margins for air operators and encouraging Asian airlines to consider more services to Northern Australian destinations.

Several Asian and Australian operators currently have orders placed with Boeing for 737-MAX variants (e.g. Virgin Australia and SilkAir) and Airbus (Jetstar, Air Asia and HK Express have placed firm A320neo orders) which will be delivered over the next five to ten years. Additional improvements to the newer variants are ongoing: In 2015, Airbus launched the A321LR with a 926km (500nm) improvement on the range of the A321ceo to 7,400km in total, while Boeing plans to add average additional range improvement for the 737-MAX variants of 159km by 2021.

The increased range and efficiency of these new narrow body aircraft, as well as the introduction of modern wide bodies (e.g. A350s and 787-9s) may have significant ramifications for the Asia-Pacific market, particularly as airlines take the opportunity to re-evaluate medium-long haul routes from Australia to major Asian cities like Hong Kong. As the specifications of the new aircraft are accounted for in route development and pricing, it is foreseeable that new narrow-body aircraft could substantially improve the commercial viability of Northern Australian routes.

3.1.3 Airfares

Collection of airfare data is limited to the top 70 routes in Australia and only 29 of these routes include a Northern Australian destination. Meaningful comparison of airfare data is difficult as there is a multitude of factors which determine an airfare.

3.1.3.1 Distance Travelled

Distance travelled, and associated consumables costs, is one of the drivers of airfares. **Table 3.6** provides a breakdown of airfares of selected Northern Australia routes on a per kilometre basis (average fares are from January to December 2016).



| Table 3.6 | Average A | ir Fares | lanuary_ | December | 2016 |
|-----------|-----------|----------|----------|----------|------|
| | Average A | | January | December | 2010 |

| City Pair | Avg. Business Fare | \$/km | Avg. Restricted Economy Fare | \$/km |
|--------------------------|-----------------------|-------|---------------------------------|-------|
| Cairns-Townsville | - | - | \$381 | 1.34 |
| Brisbane-Gladstone9 | - | - | \$405 | 0.93 |
| Brisbane-Moranbah | - | - | \$598 | 0.77 |
| Perth-Newman | \$1,029 | 1.01 | \$645 | 0.63 |
| Brisbane-Emerald | - | - | \$387 | 0.59 |
| Paraburdoo-Perth | - | - | \$540 | 0.55 |
| Karratha-Perth | \$1,139 | 0.91 | \$669 | 0.54 |
| Perth-Port Hedland | \$1,178 | 0.90 | \$657 | 0.50 |
| Brisbane-Rockhampton | - | - | \$237 | 0.46 |
| Brisbane-Mackay | \$719 | 0.90 | \$309 | 0.39 |
| Alice Springs-Darwin | \$1,099 | 0.84 | \$483 | 0.37 |
| Broome-Perth | \$1,211 | 0.72 | \$616 | 0.37 |
| Brisbane-Mount Isa | \$1,145 | 0.73 | \$569 | 0.36 |
| Brisbane-Hamilton Island | \$599 | 0.67 | \$302 | 0.34 |
| Brisbane-Proserpine | - | - | \$242 | 0.27 |
| Brisbane-Townsville | \$739 | 0.66 | \$292 | 0.26 |
| Alice Springs-Sydney | \$1,475 | 0.73 | \$512 | 0.25 |
| Hamilton Island-Sydney | \$861 | 0.56 | \$331 | 0.22 |
| Brisbane-Cairns | \$599 | 0.43 | \$282 | 0.20 |
| Ayers Rock-Sydney | \$959 | 0.44 | \$437 | 0.20 |
| Cairns-Gold Coast | - | - | \$286 | 0.19 |
| Sydney-Townsville | \$1,079 | 0.64 | \$323 | 0.19 |
| Darwin-Perth | \$1,099 | 0.41 | \$500 | 0.19 |
| Cairns-Melbourne | \$1,043 | 0.45 | \$384 | 0.17 |

⁹ Note: while Gladstone Airport is below the Tropic of Capricorn, it services regions above the Tropic of Capricorn and is within the scope of this study.



| City Pair | Avg. Business Fare | \$/km | Avg. Restricted Economy Fare | \$/km |
|------------------|-----------------------|-------|---------------------------------|-------|
| Cairns-Sydney | \$895 | 0.45 | \$315 | 0.16 |
| Adelaide-Darwin | \$1,750 | 0.67 | \$405 | 0.15 |
| Darwin-Melbourne | \$1,070 | 0.34 | \$464 | 0.15 |
| Brisbane-Darwin | \$1,079 | 0.38 | \$416 | 0.15 |
| Darwin-Sydney | \$1,139 | 0.36 | \$438 | 0.14 |

(BITRE)

While data is limited, it should be noted the intra-Northern Australia route *Cairns-Townsville* has the highest cost per kilometre (\$1.34) for Restricted Economy airfares (for routes with a connection in Northern Australia). Of interest, the other Northern routes with high airfares in terms of cost per kilometre are almost all for destinations supporting the resources sector.

When compared with similar sized routes in Southern Australia, the costs per kilometre of some Northern Australia routes are comparable, and even favourable in some circumstances (particularly on non-resources sector routes).

For Restricted Economy airfares at routes of around 500 kilometres, the *Brisbane-Rockhampton* route at a cost per kilometre of \$0.46 is comparable with the *Gold Coast-Newcastle* route at \$0.44. For routes around 1,000 kilometres, the *Brisbane-Townsville* route at \$0.26 is comparable with the *Adelaide-Sydney* route at \$0.25.

For routes around 2,000 kilometres, the *Cairns-Sydney* route at \$0.16 compares favourably to the *Adelaide-Perth* route at \$0.19. For ultra-long routes, the *Brisbane-Darwin* route at \$0.15 compares favourably to the *Melbourne-Perth* route at \$0.16.

3.1.3.2 Seat Utilisation and Yield Management

Seat utilisation at Northern Australian airports for scheduled domestic services averaged 67.7 per cent in 2016 compared to 77.6 per cent for other airports. Of the busiest Northern Australian airports, Cairns recorded 77.5 percent seat utilisation, Darwin 71.1 per cent and Townsville 67.7 per cent.

The Cairns-Townsville route, which had the highest cost per kilometre of the routes involving Northern Australia, had a seat utilisation factor of just 47.4 per cent in 2016 and is one of the shortest routes for which airfares are collected. The other intra-Northern Australia route for which data is available (Alice Springs-Darwin) had a seat utilisation factor of 54.4 per cent in 2016. The resources sector routes Brisbane-Gladstone, Brisbane-Moranbah, Perth-Newman and Brisbane-Emerald all recorded seat utilisation of less than 60 per cent.

International services to Darwin and Cairns have significantly lower seat utilisation than the average for all international airports, as shown in **Table 3.7** below.



Some stakeholders suggest relatively low load factors are evidence that consumers are charged too much for travel in Northern Australia, and that lower fares would fill more seats. However, this is an over-simplification of the relationship between price, demand and revenue.

The price of an airfare is determined by a number of interlocking factors. One of the most important is airline yield management, or the system of setting – and adjusting – different airfares across various flights to maximise overall revenue. By controlling the mix and volume of fares sold on a particular flight, an airline endeavours to maximise the revenue from each flight.

In practical terms, this means airlines find a balance between selling more discounted tickets to ensure the aircraft is completely filled, and selling more tickets at full price but having a partly empty aircraft. However yield management also requires the establishment of a differential fare structure (e.g. higher fares for increased flexibility in tickets, lower fares for flights booked in advance), as well as adapting to market forces by making different fares available for sale at different times.

This approach means lower load factors do not necessarily indicate cheap fares are unavailable, noting for example Jetstar's international services typically operate with lower load factors than Qantas.

It is worth noting yield management strategies and load factors are only part of a wide range of factors influencing the cost of a ticket. Variations in operating cost and broader market dynamics will often have a more significant impact. In 2014, the global average return fare fell 3 per cent on the previous year, despite overall seat utilisation increasing by just 0.7 per cent. Instead, the lower average fares were largely due to a fall in aviation fuel costs along with intensified competition in certain markets.¹⁰

While load factors are a useful measure of overall commercial demand for a service, it is difficult to draw broader conclusions about the relationship between load factors and ticket prices on particular Northern Australia flights.

| international rassenger bervices | | | | | |
|----------------------------------|------|----------------|------------------------|-----------|-------------------------|
| Airport | Year | No. of Flights | Passenger Movements | Seats | Seat Utilisation (%) |
| Adelaide | 2015 | 4,278 | 871,388 | 1,066,949 | 81.7 |
| | 2016 | 4,643 | 924,179 | 1,157,569 | 79.8 |
| Brisbane | 2015 | 27,856 | 5,392,288 | 6,864,383 | 78.6 |
| | 2016 | 29,034 | 5,565,869 | 7,111,989 | 78.3 |

Table 3.7 Passenger Movements, Flights and Seats at Australian International Airports – Scheduled International Passenger Services

¹⁰ Bureau of Infrastructure, Transport and Regional Economics (BITRE), 'International airline activity 2015', Canberra, 2015; International Air Transport Association (IATA), 'IATA Annual Review 2015', Geneva, 2015.



(Source - BITRE)

3.1.4 Air Cargo

While air transport provides unique access to overseas markets, it comes at a significant premium: airfreight is substantially more expensive on a per kilogram basis relative to other transport modes. Due to the high cost, air transport is primarily used for cargoes where speed to market is of value.

Perishable products make up a significant proportion of goods transported by air, as air transport allows these goods to be shipped into markets where other transport modes would take too long. Time is also critical for the movement of spare parts, with shipping by air minimising downtime of critical equipment. In addition to time-sensitive products, high value products are also often shipped by air to minimise time to market.



3.1.4.1 Passenger vs Freighter Aircraft

The overwhelming majority of Australian air cargo is carried in the holds of regular passenger aircraft. In 2016, 82.2 per cent of international air cargo was carried aboard passenger aircraft.¹¹

Specific data on hold capacity utilisation is limited; however, analysis of the amount of cargo carried aboard international flights from Northern Australia, compared to passenger numbers, provides a strong indication of very low cargo capacity utilisation rates:

 Table 3.8
 Total 2016 International Outbound Passengers and Cargo – Northern Airports

| City | Passengers Carried | Cargo (Tonnes) |
|--------------|--------------------|-----------------|
| Cairns | 328,719 | 3,021 |
| Darwin | 137,586 | 139 |
| Port Hedland | 4,224 | 0 ¹² |
| Townsville | 21,070 | 0 ¹³ |

(Source: BITRE, International Airline Activity)

The total cargo carrying capacity of an aircraft will depend on a range of factors, including passenger load and sector length (i.e. fuel load). By way of example, the maximum cargo capacity of a typical Airbus A320 with a passenger configuration is 16.6 tonnes, with 150 passengers onboard. However, on many Australian routes, a maximum of two tonnes of cargo would be more typical. Even with this significantly smaller amount of cargo, it is clear there is significant underutilisation of passenger aircraft hold capacity, particularly from Darwin.

The extent to which cargo can be carried efficiently on passenger aircraft is largely dependent on aircraft type. Narrow body aircraft, which operate on the majority of domestic and a limited number of international services (primarily to Darwin), have more limited capacity for containerised cargo, with cargo often having to be loaded as less efficient breakbulk (separate boxes and cartons). While the A320 can carry some containerised cargo, the B737 typically does not.^{14,15}

The abundance of available hold capacity in passenger aircraft has a significant impact on the economics of shipping goods by air.¹⁶ Low hold capacity utilisation and marginal cost pricing drives low freight rates, making it economical to export lower value, higher volume goods than would otherwise be economical to send by air. This is clearly demonstrated in the profile of Australia's exports, with a large proportion of high-volume, low-value goods, such as horticultural products.

¹¹ BITRE, 'International Airline Activity 2016', Canberra, 2016.

¹² Nil reported.

¹³ Nil reported

¹⁴ www.airbus.com .

¹⁵ www.boeing.com

¹⁶ Also noted in Infrastructure Australia, 'Northern Australia Audit–Infrastructure for a Developing North', Sydney, 2015 ('Northern Australia Audit').



3.1.4.2 Air Export Profile

A wide range of goods is exported by air, with "Meat and meat preparations", "Vegetables and fruit", "Miscellaneous edible products and preparations" and "Fish (including crustaceans, molluscs and aquatic invertebrates, and preparations thereof)" categories accounting for 54 per cent of total national exports by weight. In Northern Australia, the "Fish (including crustaceans, molluscs and aquatic invertebrates, and preparations thereof)" category accounted for 34 per cent of exports by weight. The "Vegetables and fruit" category was the next largest category of perishable exports with 12 per cent of exports by weight. However when compared to the data for national air exports, 'meat and meat preparations' does not feature in the top ten export categories for Northern Australia. The tables below show the breakdown of the types of goods exported by air in 2015-16 based on customs declarations.

Table 3.9 National Air Exports by Weight – Top Ten Categories 2015-16

| Commodity Type | Value(\$) | Weight (tonnes) | Share |
|---|----------------|-----------------|-------|
| Meat and meat preparations | 944,230,137 | 95,087.0 | 17% |
| Vegetables and fruit | 363,362,344 | 92,907.0 | 17% |
| Special transactions and commodities not classified according to kind | 956,478,505 | 86,781.1 | 16% |
| Miscellaneous edible products and preparations | 1,257,269,905 | 76,060.4 | 14% |
| Fish (excl. marine mammals) crustaceans, molluscs and aquatic invertebrates, and preparations thereof | | | |
| (excl. extracts and juices of fish, crustaceans, molluscs or other aquatic invertebrates, prepared or | | | |
| preserved of SITC 01710) | 1,046,824,713 | 28,283.2 | 5% |
| Dairy products and birds eggs | 93,315,644 | 15,292.1 | 3% |
| Miscellaneous manufactured articles, nes | 2,125,724,188 | 12,267.9 | 2% |
| Medicinal and pharmaceutical products | 1,854,766,097 | 12,234.0 | 2% |
| Commodities and transactions not included in Merchandise Trade | 14,929,099,684 | 12,019.8 | 2% |
| Iron and steel | 21,332,177 | 11,441.3 | 2% |
| Other | 29,462,585,894 | 103,337.3 | 19% |
| | | | |
| Total | 53,054,989,288 | 545,711.3 | |
| | | | |

(Source: BITRE based on ABS, 2016, Customised report based on International Merchandise Trade data See Data Notes)

Table 3.10 Northern Australia Air Exports by Weight – Top Ten Categories 2015-16

| Commodity Type | Value(\$) | Weight (tonnes) | Share |
|---|-------------|-----------------|-------|
| Fish (excl. marine mammals) crustaceans, molluscs and aquatic invertebrates, and preparations thereof | | | |
| (excl. extracts and juices of fish, crustaceans, molluscs or other aquatic invertebrates, prepared or | | | |
| preserved of SITC 01710) | 60,712,753 | 2,122.1 | 34% |
| Special transactions and commodities not classified according to kind | 8,964,521 | 1,053.1 | 17% |
| Commodities and transactions not included in Merchandise Trade | 632,359,646 | 1,000.5 | 16% |
| Vegetables and fruit | 3,909,064 | 727.2 | 12% |
| Manufactures of metals, nes | 2,426,300 | 372.6 | 6% |
| Miscellaneous manufactured articles, nes | 4,229,771 | 152.7 | 2% |
| Paper, paperboard and articles of paper pulp, of paper or of paperboard | 444,729 | 137.6 | 2% |
| Crude animal and vegetable materials, nes | 1,558,756 | 98.9 | 2% |
| Machinery specialized for particular industries | 11,619,062 | 97.4 | 2% |
| Transport equipment (excl. road vehicles) | 49,073,298 | 97.1 | 2% |
| Other | 77,830,981 | 330.9 | 5% |
| | | | |
| Total | 853,128,881 | 6,190.3 | |

(Source: BITRE based on ABS, 2016, Customised report based on International Merchandise Trade data See Data Notes)



Figures for Northern Australia are an aggregation of Broome, Cairns, Darwin, Port Hedland and Townsville ports with goods processed through Cairns accounting for 84 per cent of the weight of goods processed in Northern Australia.

The "Special transactions and commodities not classified according to kind" and "Commodities and transactions not included in Merchandise Trade" categories account for a large proportion of goods processed through Northern Australia ports. These categories include items exported on a temporary basis, Australian Defence Force items and items re-exported from Australia after being imported for repair. Support for resources operations in Papua New Guinea and Australian Defence Force activity could account for a large portion of these categories. If these two categories are excluded, the "Fish (including crustaceans, molluscs and aquatic invertebrates, and preparations thereof)" category accounts for 51 per cent of all exports from Northern Australia in terms of weight. The majority of this is exports from Cairns to Hong Kong.

Tables 3.11 and **3.12** outline the value, weight and overall proportion (by weight) of export commodity groups nationally and from Northern Australia.

| Commodity Type | Value(\$) | Weight (tonnes) | Share |
|---|----------------|-----------------|-------|
| Gold, non-monetary (excl. gold ores and concentrates) | 16,585,053,727 | 348.2 | 31% |
| Commodities and transactions not included in Merchandise Trade | 14,929,099,684 | 12,019.8 | 28% |
| Miscellaneous manufactured articles, nes | 2,125,724,188 | 12,267.9 | 4% |
| Medicinal and pharmaceutical products | 1,854,766,097 | 12,234.0 | 3% |
| Professional, scientific and controlling instruments and apparatus, nes | 1,694,905,446 | 5,425.2 | 3% |
| Telecommunications and sound recording and reproducing apparatus and equipment | 1,631,228,587 | 4,213.6 | 3% |
| Transport equipment (excl. road vehicles) | 1,557,283,749 | 2,274.3 | 3% |
| Office machines and automatic data processing machines | 1,319,732,173 | 5,865.5 | 2% |
| Miscellaneous edible products and preparations | 1,257,269,905 | 76,060.4 | 2% |
| Fish (excl. marine mammals) crustaceans, molluscs and aquatic invertebrates, and preparations thereof | | | |
| (excl. extracts and juices of fish, crustaceans, molluscs or other aquatic invertebrates, prepared or | | | |
| preserved of SITC 01710) | 1,046,824,713 | 28,283.2 | 2% |
| Other | 9,053,101,019 | 386,719.2 | 17% |
| | | | |
| Total | 53.054.989.288 | 545,711,3 | |

Table 3.11National Air Exports by Value – Top Ten Categories 2015-16

(Source BITRE based on ABS, 2016, Customised report based on International Merchandise Trade data See Data Notes)

Table 3.12 Northern Australia Air Exports by Value – Top Ten Categories 2015-16

| Commodity Type | Value(\$) | Weight (tonnes) | Share |
|---|-------------|-----------------|-------|
| Commodities and transactions not included in Merchandise Trade | 632,359,646 | 1,000.5 | 74% |
| Fish (excl. marine mammals) crustaceans, molluscs and aquatic invertebrates, and preparations thereof | | | |
| (excl. extracts and juices of fish, crustaceans, molluscs or other aquatic invertebrates, prepared or | | | |
| preserved of SITC 01710) | 60,712,753 | 2,122.1 | 7% |
| Transport equipment (excl. road vehicles) | 49,073,298 | 97.1 | 6% |
| Hides, skins and furskins, raw | 23,565,278 | 71.6 | 3% |
| General industrial machinery and equipment, nes, and machine parts, nes | 16,272,008 | 76.4 | 2% |
| Machinery specialized for particular industries | 11,619,062 | 97.4 | 1% |
| Professional, scientific and controlling instruments and apparatus, nes | 10,706,224 | 9.7 | 1% |
| Special transactions and commodities not classified according to kind | 8,964,521 | 1,053.1 | 1% |
| Power generating machinery and equipment | 8,233,388 | 24.6 | 1% |
| Non-metallic mineral manufactures, nes | 5,178,739 | 13.3 | 1% |
| Other | 26,443,964 | 1,624.3 | 3% |
| | | | |
| Total | 853,128,881 | 6,190.3 | |

(Source BITRE based on ABS, 2016, Customised report based on International Merchandise Trade data See Data Notes)



In addition to the goods represented in the tables above, there has been significant growth in parcels moved by air. This increase is associated with the consumer shift to online shopping. Due to the lower unit-value of these shipments, many of these parcels are not necessarily subject to customs reporting requirements, and so may be under-represented in the International Cargo Statistics from Australian Bureau of Statistics.

3.1.4.2.2 Air Cargo Destinations

Air cargo exports from Northern Australia are dominated by exports from Cairns to Hong Kong, accounting for nearly 70 per cent of all international cargo handled in the North. Other key destinations include Singapore, Tokyo, Port Moresby and Osaka. With the exception of Port Moresby, these destinations serve as international hubs and also have substantial local markets. Meanwhile the tourist destination of Denpasar received almost no cargo. A breakdown of cargo movements between city pairs is below:

| Australian Port | Foreign Port | Cargo Imports (t) | Cargo Exports (t) | Total Intl. Cargo (t) |
|-----------------|--------------|----------------------|----------------------|--------------------------|
| Cairns | Auckland | 42 | 18 | 60 |
| | Denpasar | 0 | 0 | 0 |
| | Hong Kong | 208 | 2659 | 2867 |
| | Manila | 16 | 1 | 18 |
| | Osaka | 36 | 86 | 122 |
| | Port Moresby | 65 | 98 | 162 |
| | Seoul | 1 | 31 | 32 |
| | Shanghai | 26 | 0 | 26 |
| | Singapore | 17 | 1 | 18 |
| | Tokyo | 51 | 126 | 177 |
| Darwin | Denpasar | 5 | 1 | 6 |
| | Kuala Lumpur | 20 | 1 | 21 |
| | Manila | 36 | 7 | 43 |
| | Singapore | 222 | 130 | 352 |
| Port Headland | Denpasar | 0 | 0 | 0 |
| Townsville | Denpasar | 0 | 0 | 0 |

| Table 3 13 | Northern | Australian | International | Cargo | Movements | ov Cit | v Pair | 2016 |
|------------|----------|------------|---------------|-------|------------|--------|--------|------|
| | NOTUTOTT | Australian | mematoria | Gargo | MOVCHICING | Jy On | yran | 2010 |

(Source - BITRE, International Airline Activity, City Pairs Data - Passengers, Freight and Mail, 2009-Current)



3.1.4.3 Domestic Air Cargo

Limited data is available on domestic cargo movements. It is understood domestic cargo movements largely comprise goods requiring urgent delivery, international connections and goods being transported to rural and remote communities. A key difference to the market dynamic for domestic cargo movement when compared to the international market stems from the threat of modal substitution. Air transport is generally the only option for prompt international delivery; however, domestic shippers can often consider road transport available as a lower cost alternative.

3.1.4.4 Remote Air Cargo Services

Cargo services are also used to provide support to remote and regional communities that cannot be accessed by other modes of transport due to lack of infrastructure or weather. This also affects the composition of cargo on these services – which are not only limited to high value goods but also include fresh food, educational materials, medicines and other urgent supplies. The Australian Government's Remote Air Services Subsidy Scheme provides funding to support the carriage of both passengers and cargo to many remote communities in Northern Australia. During the 2015-16 financial year, the Scheme carried 239,656 kilograms of mail and other cargo nationally.¹⁷

3.1.5 Route Regulation

The Australian Government does not regulate domestic airline routes.

Some intra-state routes are subject to state government regulation (including subsidies and protection from competition) in order to encourage stability, route development and continuity of services.

In Western Australia, the current intrastate aviation framework regulates air services to 14 regional airports and monitors air services to 11 deregulated airports. Of these only the Perth-Exmouth (Learmonth) and Broome-Derby-Fitzroy Crossing-Halls Creek routes are in Northern Australia.¹⁸

In Queensland seven regulated routes are operated, as listed below.

| Table 3.14 | Queensland Regulated Routes |
|------------|--|
| Route | Destinations |
| Central 1 | Brisbane – Roma – Charleville |
| Central 2 | Brisbane-Barcaldine/Blackall-Longreach |
| Western 1 | Brisbane-Toowoomba-St George-Cunnamulla-Thargomindah |
| Western 2 | Brisbane-Toowoomba-Charleville-Quilpie-Windorah-Birdsville-Bedourie-Boulia-Mount Isa |
| Northern 1 | Townsville-Winton-Longreach |

¹⁷ **Note:** 200 of the 260 RASS ports are located in Northern Australia, although a specific Northern Australia breakdown is not available. ¹⁸ www.transport.wa.gov.au/aviation/intrastate-air-services.asp .



| Northern 2 | Townsville-Hughenden-Richmond-Julia Creek-Mount Isa |
|------------|--|
| Gulf | Cairns-Normanton-Mornington Island-Burketown-Doomadgee-Mount Isa |

(Source: www.tmr.qld.gov.au/regionalconnect)

International services must be operated in accordance with the relevant capacity entitlement negotiated in a bilateral agreement by the Australian Government.

Australia has negotiated the 'Regional Package' with most countries, which provides for open access to all international airports in Northern Australia. There are no restrictions on the growth of services by international airlines into and out of Northern Australia.

The Australian Government has also looked to promote services to regional airports by looking to include an incentive in air service arrangements, which allow a foreign airline to operate to/from a regional airport as part of its service to one of Australia's four major gateways without the service being counted against the capacity cap for the major gateways.

Cargo arrangements are even more liberal and for many years, the Australian Government has pursued the most open cargo rights possible as part of its negotiations. Australia has unrestricted rights for cargo services to/from overseas points with most major export markets. Seventh freedom rights are also regularly negotiated for cargo. This allows foreign airlines to carry cargo between Australia and another country without passing through the carrier's home country.

3.1.6 Cabotage

Aviation cabotage is the transport of domestic passengers (or cargo) by a foreign airline.

At present, the Australian Government only allows cabotage services by New Zealand airlines, as these carriers are permitted to conduct domestic services under the 'Single Aviation Market' arrangements between Australia and New Zealand. Cabotage by all other foreign airlines is permitted in exceptional circumstances (usually when a particular demand exists that no Australian airline is able to meet).

However, Australia has one of the most liberal domestic aviation markets in the world. Australian Government policy allows for 'investment cabotage' – this means that a foreign airline or investor is able to establish an Australian-based subsidiary to operate domestic air services. Providing the subsidiary meets the requirements of the Foreign Investment Review Board and all applicable Australian regulations governing the operation of domestic flights, it can be 100 per cent foreign owned, and can enjoy unrestricted access to the domestic aviation market.

Australia's bilateral air services arrangements also generally permit the carriage of 'own-stopover' traffic on international services; this allows foreign airlines to fly international passengers to an Australian destination and then (after a stopover) carry the same traffic to a second point in Australia. So far, few airlines have taken up these rights because of limited commercial value.

Recent years have seen the emergence of community debate about the economic viability of removing cabotage restrictions on routes involving a Northern Australian destination. The



Australian Government does not have immediate plans to ease aviation cabotage arrangements; however any proposal for a cabotage arrangement is considered on a case-by-case basis, taking into account the broader national interest.

One of the key considerations in assessing such proposals is that foreign airlines would need to be able to meet Australia's regulatory safety and security standards for domestic aviation, as well as observing any applicable quarantine procedures. Depending on the kind of routes involved, cabotage arrangements could also require additional resources (to establish quarantine points etc.) at Australian airports that do not currently service international flights.

There has also been interest in the easing of restrictions to support additional services in the Indian Ocean Territories (i.e. between Christmas Island and the Cocos (Keeling) Islands). This is largely a function of geography, with these territories being much closer to Indonesia, Malaysia and Singapore than major mainland Australian airports. The Government is considering the regulatory implications of this proposal.

The Government is continuing to examine options that could reduce costs for aviation passengers nationally – and in the North in particular – and remove impediments to increasing services in the region. The challenge for government and industry is to make domestic air travel in Northern Australia more efficient and economical generally.

3.2 Challenges

Encouraging a strong and competitive Northern Australian aviation sector is essential to facilitating economic growth while connecting Australia's North to the rest of the country and the world.

The vast distances and small, disparate populations of Northern Australia present unique and varied challenges to developing a vibrant aviation industry.

3.2.1 Passenger Demand

Ticket prices and the availability of services are a direct function of the size of the market and passenger demand.

The geographic distribution and small population of Northern Australia results in low passenger demand; this is a major constraint for the aviation market.

Previous review and reform processes, including the White Paper on Developing Northern Australia and state government aviation strategies, have identified a range of recurring issues linked to limited demand.

- <u>Airfares</u> consumers argue the cost of airfares in Northern Australia, particularly between Northern Australian destinations or services connecting resources towns, are restrictively high and prevent greater uptake. Consumers often note the comparative cost between an airfare to a Northern Australia destination and international airfares from Southern capitals.
- <u>Domestic connections</u> stakeholders suggest adding more direct connections between Northern Australia and Southern ports (rather than being routed through a hub at Brisbane or Perth) would substantially improve accessibility, along with increased frequencies on existing routes and better timed services that align with travellers' needs (particularly business travellers).
- <u>International connections</u> stakeholders believe that given Northern Australia's proximity to Asia there could be more international services established, particularly on short haul routes to South East Asia. Currently, Northern Australian travellers must instead pass through a Southern gateway, increasing their outlay in cost and time.

Limited aviation demand also drives infrastructure investment away from aviation towards more pressing requirements, potentially leaving communities with limited and/or outdated infrastructure, particularly in rural or remote communities. This challenge reflects the reflexive problem often faced for airport infrastructure – limited demand makes it difficult to invest in the infrastructure necessary to grow demand.

3.2.2 Travel Time

The significant distances between destinations in Northern Australia, and between Northern Australia and the major Southern centres, can be a barrier to travel due to the increased time and costs involved. Passengers travelling to or within Northern Australia can often incur additional costs for passengers if overnight stops are necessary.


3.2.3 Airport Economics

The challenges facing airports in Northern Australia vary depending on market factors and geography. For smaller regional airports, low passenger numbers and fixed infrastructure asset costs are significant challenges to balance. For many airports, this means passing on higher costs to airport users or seeking out new opportunities to supplement income.

3.2.3.1 Airport Infrastructure

Airport infrastructure includes a range of assets such as runways, terminals, hangars, fuel storage, and support functions such as communications equipment and security infrastructure. Airport infrastructure is expensive to construct and maintain, requiring long-term demand to justify investment. This carries a substantial investment risk, which must be adequately managed by airport owners.

While infrastructure investment decisions are predominantly made by local authorities, the cost of these investments are typically then passed on to airport users in the form of landing fees and other charges. However, where there is a shortfall in revenue from landing fees, the balance must be absorbed through other revenue sources (e.g. council rates).

3.2.3.2 Landing Fees and Airport Charges

Landing fees and other airport charges are used by airport owners and operators to recoup the costs of providing airport infrastructure and services. Local authorities set fees based on a range of factors, including the cost of providing airport services, and local market conditions. Landing fees vary significantly from airport to airport, in both their level and structure. Feedback from regional airlines indicates airport charges can vary from \$6 to \$46 per passenger movement, depending on the airport.

In some regional communities with low levels of passenger demand, landing fees account for a significant proportion of overall cost of an airfare. This tends to be a function of high infrastructure provisions costs being distributed across low passenger numbers.

3.2.3.3 Regional Airport Outlook

Regional airports in Australia, including those in Northern Australia, face difficult economic circumstances. With low passenger numbers and significant infrastructure financing and maintenance costs, many regional airports face a shortfall in earnings. In September 2016, the Australian Airports Association (AAA) released a report by ACIL Allen that investigated the issue of regional airport infrastructure. The report found that:

- On average 61 per cent of regional airports had budget deficits in 2014-15, with non-regular public transport (RPT) airports' costs exceeding revenues by an average 45.6 per cent.
- Nearly 40 per cent of Australia's regional airports expect persistent budget deficits over the next 10 years.
- The cost of operating a regional airport is expected to rise by 38 per cent over the next decade, adding to the already difficult financial environment.



 Australia's regional airports expect an annual budget deficit of at least \$17 million per year, equating to a \$170 million shortfall in essential infrastructure and maintenance funding at regional airports over the next decade.¹⁹

To overcome these issues, regional airports will need to look to increase passenger demand, increase charges, and/or find alternative means of financing their operations. Some of the regional airports experiencing persistent funding gaps will find themselves under increasing financial pressure that might ultimately result in their closure and cessation of operations and service provision.²⁰

3.2.3.4 Identified Airport Infrastructure Requirements

Local ownership of airport infrastructure presents a range of investment challenges.

Underinvestment and overinvestment in airport infrastructure can pose particular risks to local economies. Underinvestment reduces utility for the local community and may constrain industries reliant on adequate services, such as tourism. Overinvestment risks the creation of 'white elephants', creating a longer-term drag on the finances of local authorities and increasing the airport charges faced by airlines, with potential flow-on impacts on airfares.

Funding for large infrastructure developments is often outside of the capacity of local authorities. This means local authorities, particularly in smaller communities, are reliant on state or Australian Government support through grants or other mechanisms for infrastructure investment.

At the federal level of government, Infrastructure Australia is an independent statutory body with a mandate to prioritise and progress nationally significant infrastructure. It provides independent research and advice to all levels of government as well as investors and owners of infrastructure on the projects and reforms needed to fill Australia's infrastructure gap.

Table 3.15 shows the outcomes of Infrastructure Australia's Northern Australia Infrastructure Audit, which assessed Northern Australia's airport critical infrastructure needs. Meeting the challenge of financing and making this infrastructure available to the community will be a key challenge for airport owners.

| Table 3.15 Ident | lined Airport Critical Infrastructure Needs – Northern Australia 2015 |
|------------------------|--|
| Location | Infrastructure Requirements |
| Alice Springs | Runway and taxiway improvements Terminal facilities upgrade to accommodate passenger increase |
| Ayers Rock (Yulara) | Apron (aircraft parking) facilities, runway strengthening, taxiway improvements Terminal facilities upgrade to accommodate passenger increase |

Table 3.15 Identified Airport Critical Infrastructure Needs – Northern Australia 2015

¹⁹ ACIL Allen Consulting, Report to Australian Airports Association, Regional Airport Infrastructure Study, 2016 ²⁰ Ibid



| Location | Infrastructure Requirements |
|---------------|--|
| Broome | Apron (aircraft parking), taxiway and terminal facilities New airport location to accommodate growing heliport needs |
| Darwin | Taxiway improvements |
| Galilee Basin | Airport upgrading to accommodate resource development traffic (possible airports include Alpha, Clermont, Emerald) |
| Gladstone | Apron (aircraft parking) facilities including for helicopter relocation, runway |
| Karratha | Apron (aircraft parking) facilities including for helicopter relocation, runway improvements and terminal facilities |
| Katherine | Taxiway, apron and fire service upgrade to maintain international alternate airport status for Darwin Airport |
| Kununurra | Runway improvements, including extension to accommodate larger aircraft Terminal facilities to accommodate passenger increase |
| Milingimbi | Runway sealing and extension |
| Newman | • Apron (aircraft parking) facilities, runway improvements and terminal facilities |
| Port Hedland | Apron (aircraft parking) facilities, taxiway improvements and terminal facilities |
| Port Keats | Expansion of the length and width of this runway is required to facilitate movement of larger aircraft |
| Ramingining | Runway needs length and width extensions |
| Townsville | Apron (aircraft parking) facilities Terminal facilities to accommodate passenger increase |

(Source: Infrastructure Australia, 'Northern Australia Audit–Infrastructure for a Developing North', 2015)

The Australian Government's Regional Aviation Access Programme (RAAP) provides targeted support for aerodrome infrastructure and air services to remote areas, in circumstances where such services would not be commercially viable. One component of the RAAP is the Remote Airstrip Upgrade Programme, which provides funding for upgrades to remote airstrips in isolated communities.

On 10 February 2017, the Minister for Infrastructure and Transport announced \$11.8 million in Commonwealth funding for remote air transport upgrade projects. Of these projects, 16 are in the Northern Territory, and seven others are in Northern locations in Queensland and Western Australia. In total, the remote airstrips in Northern Australia account for approximately \$8.7 million of the Programme funding.



3.2.3.5 Airport and Security Charges

A range of government consultation processes have identified relatively high airport charges at regional airports as a key issue of concern for industry and community members. Higher fees and charges directly translate to more expensive airfares.

Regional airports note they are disproportionally disadvantaged by lower economies of scale when meeting the cost of government-mandated security costs. Fixed infrastructure requirements mean airports with lower passenger volumes need to impose greater per passenger charges. These fixed costs can be exacerbated where infrastructure provision exceeds market needs (often referred to as 'gold plating').

The Australian Government does not have a direct role in the day-to-day operation, maintenance or development of regional airports (except where regional airports also happen to be Defence aerodromes). Local government bodies, and other organisations which manage regional airports, are free to set their own prices subject to the council's governance arrangements under relevant state legislation, and compliance with the *Competition and Consumer Act 2010* (CCA) administered by the Australian Competition and Consumer Commission (ACCC). State legislation may also apply.

3.2.3.6 Infrastructure Over-Investment

A number of Business Stakeholder Group members identified infrastructure over-investment as a key issue for many regional airports. This occurs where infrastructure is put in place that makes no material difference to aviation demand, and is not required for safe and effective airport operations. The cost of these investments is then recouped from passengers via higher landing fees and airport charges. If there is no increase in passengers, per-passenger charges increase, with airfares becoming more expensive. This can have the flow-on effect of reducing passenger numbers.

Examples of infrastructure overinvestment cited by airlines include unnecessary runway lengthening projects, and unneeded terminal upgrades. Typically, these investments aim to increase passenger demand, or serve expected demand increases. The failure of some projects to achieve their desired outcome points to the difficulties airports face in predicting market responses to proposed projects.

Ultimately, improving airport operator's capacity to make informed decisions on future infrastructure investments is to all stakeholder's benefit. Rigorous analysis of costs, benefits and risks, informed by greater involvement of airlines, tourism operators, community groups and passengers in airport investment decision making may go some way to resolving this issue.

3.2.3.7 Freight Hub Viability

A number of aerodromes in Australia are working to position their infrastructure as a freight hub, often focused on moving fresh produce direct to Asian markets. The rapidly expanding Asian middle classes are expected to fuel significant long-term demand for Australia's perishable products and these aerodromes are looking to position themselves as gateways to accessing



these opportunities. This strategy not only aims to improve local access to overseas markets, but also aims to provide a means of subsidising other airport activities.

In the absence of local aviation services, many regional exporters rely on road transport to ship their product to Southern capitals before being loaded to air transport for export.

A direct freighter service can offer advantages such as faster access to markets, reduced road transport costs, fewer transfers between aircraft and access to otherwise unavailable markets.

Careful consideration is required to determine whether these advantages outweigh the significant infrastructure and operational costs and the competitive advantages associated with existing arrangements.

Transport times and costs

Exporting directly to market via a local airfreight hub has the potential to reduce transport times, allowing fresher products to attract premium prices.

To capitalise on this advantage, the airport would need to be well situated near key industries, to maximise the cost/time differential advantage.

For some products, such as fresh-cut flowers, fresh milk and live seafood, quick access to markets can be a significant advantage. But for many other perishable products, including many fruits, vegetables and meat products, the availability of cold-chain transport mean typical road transport times do not make a material difference to freshness and prices at market.

Airfreight hubs will often need to compete with road transport operators who can backload goods at marginal cost on trucks returning from supplying goods to the local community.

Freighter Aircraft

Sending goods on a freighter aircraft can offer the benefit of being able to send goods directly to their final destination rather than via an overseas hub. This reduces transport times, and offers cost advantages where the second leg from the overseas hub attracts a significant premium. It also aircraft transfers, reducing the risk of damage (particularly if cold-chains are broken).

The advantages of using a freighter aircraft must be considered against the cost advantages of hold capacity in passenger aircraft.

Imports

Imports into an airfreight hub can form an important part of the business case for an airfreight hub. Without substantial inbound cargo, an airfreight hub may need operations to be entirely funded by exports alone, further eroding their commercial viability, even in the context of 'milk run' routes, which follow the direction of global trade flows. Where an appropriate alternate import location nearby is available, a triangular flying pattern may help build the business case.

Aircraft Containers

The costs associated with supplying and moving aircraft containers are a significant expense for cargo operations. The addition of a freight hub to airline routes adds multiple aircraft containers that may need to be held in stock; while a container is in the air, additional containers are required



at each end being loaded and unloaded (and available to be loaded). This adds substantially to infrastructure requirements. Different container configurations adds further to the costs and an imbalance between the types and volumes for imports and exports can create a need to import or export empty aircraft containers, also increasing costs and impacting commercial viability.

The use of pallets, rather than specialised aircraft containers can go some way to mitigating this issue, although suitable arrangements for the movement of pallets (albeit at a significantly lower cost) would be required.²¹

Infrastructure requirements

The infrastructure required for an international freight hub is substantial. International freighter aircraft are typically large, wide-bodied aircraft such as the Boeing B747F to facilitate commercially viable volumes and adequate range. These aircraft require long, strong runways and taxiways, as well as extensive support infrastructure. To justify expenditure on such significant infrastructure investments, a substantial business case is needed which identifies substantial long-term demand.

Freight forwarding infrastructure requirements vary depending on the goods being handled. Temperature-sensitive products, which dominate cargo volumes exported from the North, require specialised facilities for cargo handling – particularly in Northern Australia. The Northern Territory draft aviation strategy to 2020 has noted refrigerated capability is central in reducing costs for agricultural exports and committed to work with industry to assess the viability of a cold storage facility at Darwin Airport.

Other Issues

Industry feedback indicates delays are a key issue preventing airlines from taking advantage of cargo opportunities – the cost of any delays associated with cargo loading have the potential to exceed any benefit derived. To address this issue, capable, well-equipped freight forwarders are required who are able to build a reputation for fast, reliable cargo handling.

Difficulties with a lack of unitisation of cargo also remain a key challenge. Depending on the aircraft used, the lack of capacity to load unitised cargo on narrow body aircraft remains a key barrier to taking advantage of the cargo-carrying capacity of passenger flights.

In summary, while there are ostensibly significant opportunities for the airfreight industry in Northern Australia, the challenges remain significant. Infrastructure Australia's Northern Australia Audit neatly summarised these issues and the implication:

"Northern Australia airports, as with its ports, have no refrigerated container capability that could in principle reduce the costs of high quality agricultural exports from the region. Anecdotally, substantial volumes of fruit and vegetables are trucked to Brisbane, Adelaide and Melbourne,

²¹ In some cases single-use pallets can further reduce costs.



taking advantage of competitive trucking back haul rates, for subsequent air freighting to Southeast Asia (together with domestic capital city use). A combination of factors - a substantial domestic market in the Southern capitals, a highly efficient road freight sector (with refrigerated capability), low international air freight rates from airports in Southern capitals, due to wide-body passenger aircraft use that Northern air markets could not sustain – appear likely to preclude development of Northern air freight capacity for the foreseeable future."²²

3.2.4 Border Agency Services

Border agency services are essential to international travel and trade, ensuring that relevant laws are upheld and providing assurances that inbound and outbound goods and passengers do not pose an unreasonable risk to Australia. Airports servicing international flights need the appropriate border facilities and services to receive international aircraft. At present, border agencies have a permanent presence at three Northern Australia airports (Darwin, Townsville and Cairns) at the level necessary to process the international flights that seek to operate at those airports. These services are resourced by government appropriations.

International movements are permitted at other designated international airports in Northern Australia (including Broome and Port Hedland), but require the prior approval of border agencies, as border agencies do not have a permanent presence at those airports. Currently, only Port Hedland utilises these resources as part of their scheduled international services.

Cargo has additional border agency requirements that may discourage significant volumes of freight being carried on passenger aircraft. These requirements include Department of Agriculture and Water Resources inspection services, which serve to ensure that import goods do not pose a threat to Australia's biosecurity, and provide assurance to overseas markets that Australian goods do not pose a threat.

While the Australian Government has historically been willing to provide the necessary border agency resources to help process international cargo, these resources need to be supported by additional infrastructure at the airport's expense, often presenting a significant barrier to growth.

3.2.5 Passenger Movement Charge

The Passenger Movement Charge (PMC) is a \$60 cost for the departure of a person from Australia for another country, whether or not the person returns to Australia. The PMC was introduced in July 1995 as a replacement for the Departure Tax, and is administered by the Department of Immigration and Border Protection.

Members of the Business Stakeholder Group identified the PMC as a potential barrier to expanding international passenger services to Northern Australia. The group suggested the Australian Government could consider adjusting the charge to reduce the cost of operating to Northern Australia and incentivise services to the region.

²² Infrastructure Australia, 'Northern Australia Audit', Sydney, 2015, p 74.



3.2.6 Fuel

Fuel is a significant input cost for operating services. A comparison of the price of Jet-A1 fuel between destinations in Northern Australia and in Southern Australia are shown below

| Table 3.16 Jet-A1 Fuel Prices at Key Aerodromes | | | | | | | | | |
|---|-------------------|-------------|-------------------|--|--|--|--|--|--|
| Location | Price (per 1000L) | Location | Price (per 1000L) | | | | | | |
| Alice Springs | \$1565.20 | Rockhampton | \$1478.40 | | | | | | |
| Paraburdoo | \$1634.60 | Cairns | \$1452.80 | | | | | | |
| Karratha | \$1589.40 | Mackay | \$1450.10 | | | | | | |
| Weipa | \$1539.20 | Canberra | \$1447.40 | | | | | | |
| Kununurra | \$1527.60 | Townsville | \$1437.10 | | | | | | |
| Hamilton Island | \$1496.60 | Adelaide | \$1397.20 | | | | | | |
| Mt Isa | \$1486.10 | Brisbane | \$1397.20 | | | | | | |
| Tamworth | \$1483.10 | Melbourne | \$1397.20 | | | | | | |
| Darwin | \$1458.50 | Sydney | \$1397.20 | | | | | | |
| Broome | \$1454.20 | Perth | \$1397.20 | | | | | | |

(Source: www.ppp.shell.com/prices.aspx) ²³.

Jet fuel prices are highest in the most remote regions reflecting the additional costs involved in transporting fuel to these regions.

For larger Northern Australia regions like Darwin, Cairns, Broome and Townsville, the cost of jet fuel is comparable with some regional areas in Southern Australia, including Canberra and Tamworth, but significantly higher than at the main gateway airports. These differences are significant when the greater length of domestic flights from Northern Australia airports is taken into account.

Higher fuels cost can be a significant impediment to additional services. This is further compounded where additional airport fees are added to fuel purchases.

²³ www.ppp.shell.com/prices.aspx - last accessed 1 May 2017

3.3 Opportunities

The Australian and Asia-Pacific aviation sector is expected to enjoy significant growth over the coming decades, presenting significant opportunities for the North. Passenger movements through all Australian airports are forecast to increase by 3.7 per cent a year to 2030-31, from 135.1 million in 2010–11 to 279.2 million. International and domestic passenger movements are projected to increase by 4.9 and 3.3 per cent a year over the same period to 72.1 and 207.1 million, respectively, in 2030–31.²⁴ Northern Australian aviation can be expected to enjoy its share of this future growth if appropriate strategies are put in place.

Globally, air passenger journeys are expected to increase at an average rate of 5.3 per cent each year to 2020 and average 4 per cent growth to the 2030's. By 2021, China is expected to overtake the United States as the world's largest domestic aviation market, with this region expected to account for 63 per cent of airline traffic by 2035.²⁵

With Northern Australia enjoying geographic proximity to this growing region, there are significant opportunities for future growth. Capitalising on these opportunities will depend in part on overcoming the range issues relating to narrow-body planes (potentially through the use of new generation narrow-body aircraft as discussed above in **3.1.2.2**).

Recently concluded Free Trade Agreements are expected to further lower the cost of our exports and boost demand for our goods and services, presenting opportunities for greater movement of goods (particularly agricultural goods) via air cargo.

3.3.1 Advanced Airport Investment Financing

The growth in innovative financing mechanisms in recent decades provides significant opportunities for proponents of infrastructure development. Recent decades have seen the growth of government and private industry collaboration – through public private partnerships, joint ventures, strategic alliances and other special purpose vehicles. In addition to more traditional grants programmes, these financial mechanisms are increasingly becoming mainstream, providing new opportunities to develop infrastructure where options were more limited in the past.

There is a range of Australian Government programs that have the potential to provide strategically targeted airport investment to drive better connectivity to Northern Australia.

Northern Australia Infrastructure Facility

The Northern Australia Infrastructure Facility (NAIF) offers up to \$5 billion over five years in concessional finance to encourage and complement private sector investment in infrastructure that benefits Northern Australia. Developments in airports, communications, energy, ports, rail and

²⁴ BITRE, 'Air Passenger Movements Through Capital and Non-Capital City Airports to 2030–31', Canberra, 2012.

²⁵ IATA & Tourism Economics, 'Air Passenger Forecasts Global Report', 2015.



water have been identified as potentially being eligible for the NAIF where the proposed project meets the selection criteria.²⁶

The NAIF's operations are governed by Commonwealth legislation and overseen by an independent commercial board (the NAIF Board). The NAIF came into effect on 1 July 2016 as a corporate Commonwealth entity under the *Northern Australia Infrastructure Facility Act 2016*. The Government's directions to the NAIF Board about the performance of its functions are set out in the NAIF Investment Mandate.²⁷

The NAIF Board is responsible for deciding, within the scope of the Investment Mandate, the strategies and policies to be followed by the NAIF and to ensure the proper, efficient and effective performance of the NAIF's functions.

Building Better Regions Fund

The Building Better Regions Fund (BBRF) was announced during the 2016 election and targets regional and remote areas. The Australian Government will invest nearly \$500 million over four years from 2017-18 to 2020-21.

The BBRF will invest in projects located in, or benefiting, eligible areas, with applications assessed in three categories depending on the size of the project. This will mean applications for smaller grants need not compete with large projects for funding.

The BBRF aims to create jobs, drive economic growth, and build stronger regional communities into the future. Funding for the program is available across two categories:

- Infrastructure Projects (IP) Stream supports projects involving the construction of new infrastructure, or the upgrade or extension of existing infrastructure that provide economic and social benefits. Local Governments and incorporated not-for-profit organisations are eligible to apply for grants of between \$20,000 and \$10 million under the IP Stream
- Community Investment (CI) Stream funding community development activities including, but not limited to, new or expanded local events, strategic regional plans, and leadership and capability building activities. The minimum grant amount available under the CI Stream is \$5,000 and the maximum grant amount is \$10 million.

Applications are assessed against the eligibility criteria and then, if eligible, against merit criteria. Decisions on projects to be funded are taken by the BBRF Ministerial Panel in consultation with the Australian Government's National Infrastructure Committee of Cabinet, or with Cabinet.

BBRF round one applications under the IP stream closed on 28 February 2017 and the CI stream closed on 31 March 2017. Applications for BBRF round two closed on 19 December 2017

²⁶ See Schedules 1 and 2 of the Northern Australia Infrastructure Facility Investment Mandate Direction 2016: www.legislation.gov.au/Details/F2016L00654.

²⁷ See www.naif.gov.au/about-us/naif-governance/



Regional Aviation Access Programme

The Australian Government supports essential air services to remote communities to ensure residents have access to regional service centres through the Regional Aviation Access Programme (RAAP).

The RAAP provides funding assistance for access and safety upgrades to remote aerodromes where they are not commercially viable.

3.3.2 Remote Aviation Programmes

The Australian Government recognises the need for residents of remote or isolated areas to access essential goods and services, including urgent medical services.

The Government's Airservices Australia Enroute Charges Payment Scheme (the Enroute Scheme) provides assistance to airlines operating aeromedical services in regional and remote areas through a reimbursement of enroute air navigation charges levied by Airservices Australia. The Enroute Scheme also provides a subsidy to commercial airlines operating new and low volume routes to small and remote communities.

The Government also subsidises weekly air transport to remote areas of Australia through the Remote Air Services Subsidy (RASS) Scheme. The RASS Scheme provides otherwise isolated communities with access to regular transport services and goods such as educational materials, medicines and fresh food. The RASS Scheme operates in several regions in Northern Australia, including two regions in the Northern Territory and the Pilbara in Western Australia.

3.3.3 Bilateral Arrangements

Australia's approach to bilateral air services arrangements provides an opportunity for growth in regional aviation, including Northern Australia. Before an airline can operate international services to another country, the government must first negotiate a treaty level agreement with the destination country's government. These treaties are known as bilateral air services agreements.

The Australian Government has negotiated approximately 100 bilateral air services agreements and associated arrangements. These agreements allow our airlines to offer the range of services that they do today.

Bilateral air services agreements/arrangements contain provisions on:

- **Traffic rights** the routes airlines can fly, including cities that can be served within, between and beyond the bilateral partners;
- **Capacity** the number of flights that can be operated or passengers that can be carried between the bilateral partners;
- Designation, Ownership and Control the number of airlines the bilateral partners can nominate to operate services and the ownership criteria airlines must meet to be designated under the bilateral agreement. This clause sometimes includes foreign ownership restrictions;



- **Tariffs** i.e. prices. Some agreements require airlines to submit ticket prices to aeronautical authorities for approval (it is not current practice for Australian aeronautical authorities to require this); and
- Many other clauses addressing competition policy, safety and security.

The Australian Government's approach to negotiating bilateral air services arrangements provides a key opportunity for Northern Australia. As part of Australia's approach to negotiating these agreements, Australia offers the 'Regional Package', which allows overseas airlines to fly into regional airports without affecting capacity limits.

This framework could facilitate foreign carriers operating additional routes into Northern destinations, which would not otherwise be possible.

3.3.4 Northern Passenger Hubs

Despite enormous efficiency improvements over the past thirty years and a consequent reduction in the relative cost of airfares, industry feedback confirms that airfares contribute to the generally high cost of doing business in Northern Australia. The dispersed populations in Northern Australia create difficulties in generating sufficient demand for airlines, particularly for year-round services. Consequently, generating additional demand is seen by stakeholders as essential if airline services are to increase.

These challenges could potentially be addressed by 'hubbing' services from Southern capitals to South East Asia through a Northern Australian port.

While Northern Australia is well located to support such an operation, the challenges remain significant. This is highlighted by Jetstar's efforts to implement the strategy.

Jetstar had a strong focus on operating a hub in Darwin from 2008 to 2013. Jetstar contributed considerable resources to the operation, operating a combination of services to Asian destinations including Manila, Singapore, Denpasar, Tokyo and Ho Chi Minh City (until 2012). The relocation of the hub to Adelaide in 2013 came with frequency reductions to both international and domestic destinations from 54 to 49 times weekly from March 2014.

The closure of the Darwin hub indicates that achieving a balanced division of costs between industry operators and infrastructure partners is vital to driving sustainable passenger growth. When commenting on the hub closure, Jetstar stated that as airport-related costs represent up to 25 per cent of Jetstar's cost base, Darwin was among its most marginal bases.²⁸ Comments made in 2010 by former CEO Bruce Buchanan indicate that Jetstar's 'virtuous circle' concept, in which the airline aimed to increase capacity utilisation to decrease unit costs, did not work at Darwin airport due to high airport costs.²⁹ Moreover, despite the airline's desire to operate a successful Northern hub, other airport options were also not viable. In response, Darwin International Airport

²⁸ Centre for Aviation, 'Jetstar cuts services from Rockhampton, analysing airport charges at Australian airports' 5 March 2010.
²⁹ Centre for Aviation, 'Jetstar still looking into Northern Australian hub; states Darwin too expensive', 20 October 2010.



highlighted the high service levels provided at the airport and further planned investment in airport infrastructure.

While a Northern hub strategy clearly presents significant commercial difficulties, the logic and geography remains compelling if industry stakeholders and infrastructure partners can successfully work closely together to pursue mutually beneficial outcomes.

3.3.5 Innovative Business Partnerships

Members of the Business Stakeholder Group identified the need to look for ways to reduce or share risks, to provide more certainty for airlines considering expansion of services. Risk sharing partnerships may also open new opportunities to stimulate travel demand by offering cheaper fares.

While some stakeholders advocate simply lowering airfares to increase demand, airlines have a more holistic approach to maximising the revenue for each flight in accordance with their yield management strategies (discussed above). However, there may be opportunities for organisations and businesses in Northern Australia to develop commercial partnerships with airlines, with the aim of growing demand by sharing the downside risks associated with cheaper fares or more services.

For example, from 2015 to 2016 Jetstar partnered with Hubei Wanda New Airline International Travel Services Co Ltd (Dalian Wanda Group), Gold Coast Airport and the Queensland Government to establish a twice-weekly flight between Wuhan and the Gold Coast, successfully bringing mainland Chinese tourists to the region with integrated travel packages.



Chapter 4: Maritime Transport Issues Analysis

Australia has always relied on sea trade, and the movement of goods by sea continues to be essential to the Australian economy – over 99 per cent of Australia's exports by volume, and around 80 per cent by value, are transported by sea.³⁰ Our geography (as an island) and our economy (as a major global producer of commodities) make Australia a major shipping nation – Australian ports manage around 10 per cent of the world's sea trade by tonnage. Ensuring Australia continues to have an efficient and capable maritime transport industry is therefore essential to Australia's continuing trade and prosperity.

The maritime industry plays a particularly vital role in Northern Australia's economy, supporting the movement of resources and agricultural goods both internationally and domestically. Half of Australia's top ten ports with the highest value of international sea freight exports are located in Northern Australia³¹, handling over 40 per cent of the nation's sea freight exports. For many parts of Northern Australia, maritime transport provides an essential link to other parts of Australia and the world, and is an indispensable employer and driver of local economies.

4.1 Trends and Developments

Northern Australia has more than 25 ports, excluding offshore offloading stations, which are serviced by commercial vessels. These ports receive a range of commercial vessels, both under charter and operating liner trade. Charter vessels predominantly handle export of resources and agricultural products, which comprises the majority of volume handled. A number of scheduled shipping line services handle the import and export of containerised and break bulk goods.³²

In addition to operating as an export gateway, the major ports in Northern Australia service transhipment and domestic distribution transport for coastal trade. These ports also service remote and isolated communities, as well as facilities for the offshore oil and gas industry.

The ports of Northern Australia also provide facilities for the cruise ship industry as well as military and paramilitary vessels. These activities bring with them their own demands, as well as unique benefits for local economies.

4.1.1 Maritime Transport Sectors

The maritime transport industry can be broken down into a number of distinct sectors based on the nature of the cargo and the vessels involved.

4.1.1.1 Bulk Cargo

Bulk cargo is commodities transported unpackaged in large quantities. It may be granular, particulate or liquid. It includes the movement of resources such as ore, coal and concentrates, as

³⁰ BITRE based on the Australian Bureau of Statistic (ABS) 2016 Customised report based on International Merchandise Trade data

³¹ BITRE 2017, Australian sea freight 2014–15, Canberra, ACT. Based on total exports between 2005-06 and 2014-15.

³² Infrastructure Australia, 'Northern Australia Audit', Sydney, 2015, p76.



well as liquid products such as oil and liquefied gas. Bulk can be broken down into 'dry' bulk (ores, grain, coal, etc.) and 'wet' bulk (petroleum, gas, chemical). Dry bulk tends to be loaded into dry bulk carriers, while wet bulk is carried in tankers.

4.1.1.2 General Cargo

While bulk commodity exports make up the majority of both the value, and volume of goods handled by the Northern Australian maritime transport sector, other sectors are also essential, both to the maritime sector and to the broader Northern Australian economy. General cargo includes container shipping and break-bulk cargo. These markets face different market conditions to the bulk export markets, being largely focused on import, domestic (coastal) trade and one-off shipments.

In Northern Australia, landing craft services form an essential part of the supply chain to remote regions, including island communities. These vessels carry a vast array of goods and can be loaded via a bow or stern ramp, and often have a crane for cargo loading. Landing craft have an advantage of not requiring significant infrastructure to load and land cargo – a benefit for servicing many remote communities.

For many parts of Northern Australia, containers and vehicles are carried between destinations via general cargo vessel, often using a landing craft. These vessels provide essential shipping services to coastal and island communities throughout the North. While using these vessels allows vehicles and containerised cargo to be delivered to destinations that could not otherwise be serviced, the smaller size of these vessels means the unit-cost of transport is higher. However, this higher unit cost is offset, at least in part, by reduced capital expenditure on infrastructure.

4.1.1.2.1 Containerised Cargo

Goods transported via container services tend to be smaller in volume than bulk exports, with a significantly greater value to weight ratio. Manufactured items tend to make up a significant proportion of the goods moved in containers, with frozen, chilled and refrigerated cargo also making up a significant portion. A key differentiating feature of the container market, compared to bulk, is that containerised goods originate from many different consignors; bulk shipments through a given port tend to originate from a limited number of big producers. This difference fundamentally changes the nature of business relationships and the services required. These different cargo market.

Containerised cargo tends to be moved by 'liner' services, offering a regular, scheduled service for the movements of containers between specified ports. This provides for a predictable service, allowing users to schedule their shipments and plan their business activities accordingly. This predictable and regular nature of liner services is essential to the container market's business model.

A limited number of ports in Northern Australia handle containerised cargo, with approximately ten ports having equipment to handle containers. Of these, only a limited number have capacity to handle significant numbers of containers. The remainder are generally focused on servicing limited



local needs. The limited number of ports handling containers may assist operators to achieve the economies of scale necessary to achieve commercial viability.

Table 4.1 on the following page provides a summary of the total container movements for key ports in Northern Australia.

| Port | Northern Australian Container Movements (TEU) ³³ | | | | | | | | |
|-------------------------------|---|---------|---------|---------|---------|---------|--|--|--|
| | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | | | |
| Townsville | 35,455 | 42,439 | 49,562 | 50,173 | 58,707 | 62,513 | | | |
| Cairns | 10,222 | 17,763 | 13,456 | 15,761 | 15,868 | 25,526 | | | |
| Darwin ³⁴ | 8,928 | 10,636 | 8,882 | - | - | 35,187 | | | |
| Thursday Island ³⁵ | 5,388 | 6,099 | - | - | - | | | | |
| Port Alma (Rockhampton) | 552 | 1,277 | 1,145 | 1,568 | 1,471 | 1,574 | | | |
| Gladstone | 201 | 1,368 | 3,954 | 6,194 | 8,479 | 9,327 | | | |
| Port Hedland ³⁶ | 109 | 146 | 885 | 1492 | - | | | | |
| Broome ³⁷ | 50 | 2 | 2,404 | 4,439 | 393 | 184 | | | |

| Table 4.1 Container M | Movements – | Northern | Australian | Ports |
|-----------------------|-------------|----------|------------|-------|
|-----------------------|-------------|----------|------------|-------|

(Source: www.portsaustralia.com.au/aus-ports-industry/trade-statistics)

By means of comparison, Townsville is the eighth largest container handling port in Australia, but handled approximately 2.4 per cent, 2.7 per cent and 5.5 per cent of the total number of containers (measured in TEUs - see footnotes) of the three largest container terminals in Australia (Melbourne, Sydney and Brisbane) in 2014-15.^{38,39} In 2014, Australia accounted for only a very

³³ Twenty Foot Equivalent Units.

 ³⁴ Data for the 2012-13 and 2013-14 years is currently unavailable.
 ³⁵ Data for the 2012-13, 2013-14 and 2014-15 years is currently unavailable.
 ³⁶ Data for the 2013-14 and 2014-15 years is currently unavailable.
 ³⁷ Note: while the 2011-12 and 2012-13 gives appear to be an aberration, they are consistent with the Broome port authority's 2014-2015 annual report: Kimberly Ports Authority 'Annual report 2014-2015', Broome, 2015, p 18: www.kimberleyports.wa.gov.au/News-and-Media/Reports-(1). ³⁸ BITRE, 2016, Waterline 58, Statistical Report, BITRE, Canberra ACT.



small percentage of global container movements (estimates of this figure vary significantly but is thought to be approximately one per cent).^{40,41}

4.1.1.2.2 **Break-Bulk Cargo**

Break-bulk cargo includes a broad suite of goods that must be loaded individually, and may be transported in bags, barrels, drums, on pallets, in crates, or otherwise arranged. These goods may be slung on board, or individually craned or carried. As such, the loading of break-bulk cargo is typically less efficient than both bulk and containerised cargo. Break-bulk cargo may be transported on a regular service (particularly for services re-supplying more remote areas) or on an individual charter basis.

4.1.1.2.3 **Project Cargo**

Project cargo is a special class of general cargo involving the movement of large, heavy items. Services in this sector are almost exclusively carried out on a one-off charter basis. Project cargo requires specialist equipment and expertise for its handling. Significant project cargo has been moved in Northern Australia, in connection with resources developments.

4.1.1.2.4 Roll-on, Roll-Off (Ro/Ro) Services

Ro/Ro services facilitate the movement of vehicles and vehicle-borne cargo across maritime areas. Ro/Ro cargo tends to require specialist facilities that are equipped to receive and store vehicles. These facilities can include hardstand areas for vehicle staging, and may include specialist ramps (depending on vessel configuration). In Northern Australia Ro/Ro services are primarily used for the importation and domestic transhipment of cars and heavy machinery.

Landing craft are sometimes considered Ro/Ro vessels; however, they have significantly different characteristics and purposes to larger specialist Ro/Ro vessels, and so have been considered as a separate category.

4.1.2 The Australian Fleet

The Australian trading fleet is comprised of cargo ships owned or operated by Australian companies, and include ships that carry cargo, or both cargo and passengers, but excludes ships that carry passengers only. It also excludes vessels below 150 GT (gross tonnage).⁴² The fleet excludes vessels which operated internationally without calling to Australian ports in the financial year, and also excludes non-Australian owned or operated vessels trading in Australian waters. In 2014-15 this fleet comprised of approximately 112 vessels, 50 of which were part of the major

⁴⁰ data.worldbank.org

⁴¹ Shipping Australia Limited, 'Submission by Shipping Australia Limited to the Competition Policy Review, 2014':

competitionpolicyreview.gov.au/files/2014/06/Shipping_Australia_Ltd.pdf_ ⁴² Note: This definition is consistent with BITRE, 'Australian Sea Freight 2014-15



Australian international trading fleet⁴³ and 36 of which were part of the major Australian coastal trading fleet⁴⁴ (The remaining 27 vessels are smaller ships which are part of the minor Australian trading fleet). Figures 4.1 and 4.2 summarise the make-up of the Australian trading fleet:



Number of ships in the Australian trading fleet by ship type, 2014–15

(Source: BITRE 2017, Australian sea freight 2014-15 based on Lloyd's List Intelligence's Australian ship movements (unpublished data) and personal communications from shipping companies)

⁴³ Ships in the Australian trading fleet with deadweight tonnage greater than or equal to 2 000 tonnes and for which more than 20 per cent of their voyages

called at an overseas port. ⁴⁴ Ships in the Australian trading fleet with deadweight tonnage greater than or equal to 2 000 tonnes and for which 80 per cent or more of their voyages called at an Australian port.





Total deadweight tonnage of ships in Australian trading fleet by type, 2014–15 ('000 tonnes)

(Source: BITRE 2017, Australian sea freight 2014–15 based on Lloyd's List Intelligence's Australian ship movements (unpublished data) and personal communications from shipping companies.)

4.1.3 Maritime Trade

Maritime Transport, particularly in Northern Australia has undergone a significant period of growth, primarily associated with the growth of the Australian resources sector.

From around the early 2000's to the time of publication, the number and scale of ports and ship visits has expanded significantly to handle the movement of commodities to their destinations. This period has also seen the establishment of new ports and terminals, such as the gas export facilities in the North West shelf (WA), a new port at Skardon River (Qld) and additional ports planned, such as at Ashburton (WA).



4.1.3.1 Exports

Of the ten ports that have the highest value of Australia's international sea freight exports⁴⁵, five are located in Northern Australia (Dampier, Port Hedland, Hay Point, Port Walcott and Gladstone). In 2015-16 the goods that pass through these ports comprise 43 per cent of the total value of Australia's international sea freight exports.^{46,47}

Table 4.2 Export Value – Five Largest Northern Export Ports (2010-11 to 2015-16(2014-15 prices))

| Financial Year | Exports (\$ billion) | | | | | | | |
|----------------|----------------------|---------|-----------|--------------|-----------|--|--|--|
| | Port Hedland | Dampier | Hay Point | Port Walcott | Gladstone | | | |
| 2010-11 | 28.1 | 37.5 | 18.9 | 10.1 | 10.8 | | | |
| 2011-12 | 31.1 | 37.5 | 18.2 | 9.8 | 12.2 | | | |
| 2012-13 | 30.0 | 37.0 | 14.1 | 8.3 | 8.9 | | | |
| 2013-14 | 39.2 | 38.9 | 13.9 | 13.1 | 9.6 | | | |
| 2014-15 | 29.7 | 34.0 | 13.3 | 11.7 | 10.2 | | | |
| 2015-16 | 26.4 | 33.3 | 12.1 | 11.1 | 14.0 | | | |

(Source: BITRE based on ABS, 2016, Customised report based on International Merchandise Trade data and ABS, 2016, Australian National Accounts: National Income, Expenditure and Product, Sep 2016, Cat. No. 5206.0

In volume terms, six of the top ten ports in Australia⁴⁸ are in Northern Australia and these six ports made up nearly three quarters of the total weight of Australia's sea freight exports in 2015–16.

Table 4.3 Export Volume – Five Largest Northern Export Ports (2010-2016)

| Financial Year | Exports (million tonnes) | | | | | | | | |
|----------------|--------------------------|---------|--------------|-----------|-----------|-------------|--|--|--|
| | Port Hedland | Dampier | Port Walcott | Hay Point | Gladstone | Abbot Point | | | |
| 2010-11 | 191.8 | 165.6 | 80.9 | 87.8 | 55.9 | 15.0 | | | |
| 2011-12 | 240.2 | 173.1 | 81.8 | 83.3 | 62.8 | 13.6 | | | |
| 2012-13 | 283.0 | 180.0 | 84.8 | 96.4 | 62.2 | 17.5 | | | |
| 2013-14 | 363.3 | 174.1 | 120.3 | 108.3 | 73.8 | 22.8 | | | |
| 2014-15 | 438.2 | 167.5 | 157.4 | 114.9 | 74.7 | 28.7 | | | |
| 2015-16 | 452.0 | 169.1 | 187.7 | 115.5 | 89.2 | 26.4 | | | |

(Source: BITRE based on ABS, 2016, Customised report based on International Merchandise Trade data)

⁴⁵ Based on total export value between 2005-06 and 2014-15. See BITRE 2017. Australia sea freight 2014-15, Canberra, ACT for more details.

⁴⁶ BITRE based on ABS, 2016, Customised report based on International Merchandise Trade data.

⁴⁷ Note: while the Port of Gladstone is below the Tropic of Capricorn, it services regions above the Tropic of Capricorn and is within the scope of this study.

⁴⁸ Based on total export tonnage between 2005-06 and 2014-15. See BITRE 2017. Australia sea freight 2014-15, Canberra, ACT for more details.



4.1.3.2 Imports

Imports tend to be a more minor aspect of the operations of Northern Australian ports, especially in value terms, with the majority of imports carried to major ports on the Eastern seaboard. In value terms, three Northern Australian ports are in the top ten import ports.⁴⁹

| Financial Year | Imports (\$ Billio | Imports (\$ Billion) | | | | | | |
|----------------|--------------------|----------------------|------------|--|--|--|--|--|
| | Dampier | Darwin | Townsville | | | | | |
| 2010-11 | 3.3 | 3.4 | 1.8 | | | | | |
| 2011-12 | 5.3 | 3.5 | 2.5 | | | | | |
| 2012-13 | 3.0 | 4.1 | 2.8 | | | | | |
| 2013-14 | 4.2 | 3.3 | 2.5 | | | | | |
| 2014-15 | 2.4 | 5.0 | 2.3 | | | | | |
| 2015-16 | 5.9 | 3.1 | 1.6 | | | | | |

Table 4.4Northern Australian Import Values by Port 2010-11 to 2015-16) (2014-15 prices)

(Source: BITRE based on ABS, 2016, Customised report based on International Merchandise Trade data and ABS, 2016, Australian National Accounts: National Income, Expenditure and Product, Sep 2016, Cat. No. 5206.0)

A significant proportion of imports are containerised, reflecting the long-term trend of Australian trade towards exporting bulk commodities and importing manufactured goods.

4.1.4 Maritime Transport Demand

While the maritime transport sector has seen significant growth over recent decades, this development has been uneven. Although new ports have been established, and a significant number of ports have seen substantial expansion, the majority of this growth is directly attributable to local demand typically associated with resources projects. Ports that are not located in resources growth areas have experienced limited development.

Though many aspects of the resources economy have seen a downturn since the end of the resources investment boom, the same is not true for some segments of the maritime industry. Entry into the production phase of resources projects means a focus on moving product to market. This requires ports and shipping. The demand for shipping is significantly affected by demand for commodities, commodity prices, competition, and the consequent impact on export volumes.

For some sectors, such as the offshore industry, a move into the production phase of resources projects has had a negative impact, with downturns in activity associated with exploration and construction.

⁴⁹ BITRE 2017, Australian sea freight 2014–15, Canberra, ACT. Based on total imports between 2005-06 and 2014-15...



At the local level, demand for port services are driven by factors associated with local conditions, including the production levels of nearby projects, transport linkages, and port capacity.

4.1.4.1 Liner Trade Economics

Feedback from industry indicated the comparatively high cost of container liner services to Northern Australia is a major barrier to greater containerised transport utilisation and a significant cost to business more broadly. Additional transport costs are a key competitive disadvantage to businesses in Northern Australia.

Container freight rates and the variety of services on offer are a direct function of the size of the container market, shipper demand and the supply of vessels to carry the cargo. The geographic distribution of Northern Australia, as well as the relatively small populations found in Northern towns and cities, tends to be a major constraint for the liner market.

A lack of demand also affects infrastructure investment decisions – if there is insufficient demand to fund expensive port infrastructure, it is difficult to justify the required investment. This has the potential to leave communities with limited and/or outdated infrastructure, particularly in more remote ports.

There are a number of elements affecting the cost of operating liner services to Northern Australia. Some of the key factors include vessel capacity utilisation, economies of scale distance travelled, vessel speed, port fees and charges, and hinterland transport costs.

4.1.4.1.1 Elasticity of Supply and Demand

While industry members have indicated the high cost of container liner services to Northern Australia is a key barrier to greater containerised transport utilisation, the broader Australian international liner trade apparently face relatively inelastic demand for services (reductions in freight rates rarely increases demand).⁵⁰ The difference between these trades is likely modal substitution: To export or import a container, a liner service is required and so there is little alternative, whereas a person wishing to ship a container to or from Northern Australia domestically has the option to send their goods by road and/or rail. The effect of this is Northern Australian domestic liner services face different market conditions to international services in which domestic freight costs are far more likely to impact upon demand (i.e. it is more elastic).

Liner shipping also faces relatively inelastic supply, preventing significant adjustments in capacity for peak seasons.⁵¹ Unlike aviation where aircraft can be much more readily exchanged between routes, it is difficult to exchange an existing container vessel for one of a different size; the market for vessels is more limited, and the investments much greater. Determining the appropriate sized vessel for a service is a much longer-term decision. The implication of this is, as the loading of a vessel approaches its maximum capacity, freight rates may go up, rather than a larger vessel

⁵⁰ Shipping Australia Limited, 'Submission by Shipping Australia Limited to the Competition Policy Review', 2014: competitionpolicyreview.gov.au/files/2014/06/Shipping_Australia_Ltd.pdf.
⁵¹ Ibid.



being put onto a service. Similarly, liner services are less likely to be able to adjust for varying seasonal demand.

4.1.4.1.2 Vessel Load Factor

The unit cost of operating a liner service is lower for a full vessel, because operational costs can be distributed across a greater number of containers for a full vessel than for a partially loaded vessel.

Some stakeholders suggest lowering freight rates would result in higher demand and create better operating metrics for all parties. Finding the appropriate price settings for demand is a key commercial activity for shipping companies. Similar to airlines, shipping companies have begun utilising sophisticated yield management tools to ensure prices maximise overall revenue.

4.1.4.1.3 Economies of Scale

Just as operating a full vessel is more efficient than operating a partially loaded vessel, operating a larger (full) vessel is typically more efficient than moving a given number of containers with smaller vessels. Greater efficiency can lead to the lowering of unit costs. To be able to operate larger vessels, and achieve economies of scale, a shipping line needs to be able to rely on sufficient demand for a given route to fill the vessel sufficiently. In many parts of Northern Australia, smaller populations and limited trade mean there is insufficient demand for shipping lines to use larger vessels capable of achieving these economies of scale.

This lack of scale is likely to be a key contributor to the high cost of containerised cargo transport in many parts of Northern Australia. Loading containers aboard a general cargo vessel is significantly less efficient than using a specialised vessel. Loading and unloading is more difficult and time consuming, and the volumes of goods carried are much smaller. As a result, the price is higher.

For ports there tends to be a natural limit to economies of scale. Channel depths, crane capacity and landside issues affect a port's capacity to handle larger vessels. Attempting to use a vessel that is too large can be either impossible (in the case of channel or crane limitations) or too inefficient (such as with landside issues). Scale must therefore be matched to the broader realities of a port's circumstances.

4.1.4.1.4 Distance Travelled

Consumables costs such as fuel make up a significant proportion of the costs of operating a ship. Northern Australian domestic liner services tend to operate between Northern ports and major eastern centres. This is a function of insufficient demand to justify direct international services. For Northern Australia, the distances between these ports tend to be greater, increasing costs.

4.1.4.1.5 Vessel Speed

While distances between ports are a set factor affecting costs, vessel operators can control the speed at which a vessel operates directly impacting cost. Operating a vessel at slower speeds may allow the vessel to operate more efficiently, however other costs, such as crewing and capital costs



may increase with a slower service.⁵² The 'sweet spot' for each service will vary and is closely linked with freight rate; a higher speed is better when freight rates are high.

Intentionally operating a vessel at slower speeds is referred to as 'slow steaming'. Internationally 75 per cent of liner and tramp companies are using this approach to some extent.⁵³

4.1.4.1.6 Port Fees and Charges

Port fees and charges tend to make up a major component of the cost of shipping a container. These fees are intended to cover the cost of services provided but can act to constrain demand. Finding means of reducing these charges may have the effect of increasing shipping volumes.

4.1.4.1.7 Hinterland Transport

Capacity to effectively and efficiently move goods between the port and their landside origin/destination is a critical factor driving the capacity for liner shipping to compete with other modes. Goods need to be able to move to and from the hinterland to port with a minimum of cost and difficulty. Additional transport fees and delays can reduce the overall competitiveness of the liner trade. In the longer term, issues such as corridor protection and urban encroachment can affect the long-term viability of container facilities.

4.1.4.1.8 Trade Balance

Supplying and moving empty containers is a key cost to shipping lines. An imbalance between inbound and outbound containers mean empty containers must be moved into, or out of, a market. This greatly increases the number of containers that must be held by a line, and the costs of moving them to where they are needed. As a shipping line does not earn revenue from moving an empty container, they need to try to recoup costs associated with this activity from shippers. A significant imbalance between inbound and outbound trade results in the movement of 'empties' and increases costs. Finding a way to balance trade is a key opportunity for reducing cost.

Unlike Australia's international container trade, Northern Australia is a net exporter of full containers, meaning empties must be brought in. Meanwhile Australia as a whole exports empties.

4.1.4.1.9 Competition

Part X (Part Ten) of the Competition and Consumer Act 2010 (Part X) regulates international liner shipping of cargo travelling either to or from Australia.

Liner shipping is generally defined as shipping services operating on a regular trade route, with predetermined and publicly advertised schedules between advertised ports of call.

 $^{^{52}}$ www.seatrade-maritime.com/news/americas/the-economics-of-slow-steaming.html . 53 Ibid



The main objective of Part X is to ensure that exporters have access to liner cargo shipping services of adequate frequency capacity and reliability at freight rates which are internationally competitive. Importers are also covered by Part X but to a lesser extent than exporters.

The Part X legislation sets out conditions for granting limited, but assured exemptions from sections 45 and 47 of the Competition and Consumer Act 2010 to allow liner shipping companies to collaborate as conferences. The conditions include requirements to negotiate with exporters and importers on specific matters . Part X provides a legislative framework within which liner shipping operators and their customers can resolve problems through commercial negotiations with minimal government involvement.

Part X provides industry-specific competition rules for international liner shipping. It is in place to regulate limited anti-competitive behaviour of shipping lines, provide additional rights and power to shippers while allowing a higher level of joint operations and services, in line with global practices.

It recognises the special role liner shipping plays in providing services to exporters and importers and supporting Australia's trade.

Part X was designed to be an effective, low cost, limited intervention regulatory regime. Traditionally liner shipping operators have been permitted by governments around the world to act in concert as 'conferences' to discuss and set common prices and/or provide joint shipping services. Australia is highly dependent on liner shipping services, which aim to provide frequent, reliable services that may otherwise not be available due to Australia's geographical location, and to provide more equitable treatment to shippers.

There are liner shipping agreements that service the Northern Australian region, (Port Darwin, Northern Territory and the Port of Townsville, Queensland).

4.1.5 Ports

The ports of Northern Australia vary in their scale, scope and the range of activities undertaken, from remote beaches receiving landing barge services, to large industrial commodity export facilities and diverse city ports.

In each case, the shape and makeup of the port is a result of a range of factors, including current and historical market demand, ship technology, the local geography and environment, hinterland connections and financial and economic factors. Understanding how these factors impact upon the shape and growth of a port is important in understanding future needs.



The following list provides an indication of the key ports in Northern Australia, including offshore islands and proposed future developments.^{54,55} The map overleaf shows their locations.

Key Northern Australian Ports Table 4.5

| Northern Australian Ports ⁵⁶ | | |
|---|---|--|
| Abbot Point | Gladstone | Port Melville |
| Ashburton (future) | Gove | Port Walcott (incl. Cape Lambert) |
| Barrow Island | Hay Point | Quintell Beach |
| Bing Bong | Karumba | Skardon River |
| Broome | Lucinda | Thursday Island |
| Cairns | Mackay | Townsville |
| Cape Flattery | Milner Bay | Varanus Island Terminal |
| Cape Preston | Mourilyan | Weipa |
| Dalrymple Bay | Onslow (incl. Thevenard Island, Airlie Island, Saladin Terminal) | Wyndham |
| Dampier | Port Alma (Rockhampton) | (Various Regional Landing Barge Facilities) |
| Darwin | Port Hedland | |

 ⁵⁴ Infrastructure Australia, 2015, Northern Australia Audit – Infrastructure for a Developing North.
 ⁵⁵ www.port-directory.com (accessed 5 December 2016).
 ⁵⁶ Cooktown has not been included in this list as no commercial trade currently takes place: www.portsnorth.com.au/our-ports/cooktown.php (Accessed 5 December 2016).



Map 4.1 Northern Australian Sea Ports



4.1.5.2 Port Services

The services available at a port directly affect the trade that can take place within it. Services made available then driven by the demand for those services. The services available within a port are many and varied, but may include the following key types of services:

- Bunkering Refuelling vessels.
- **Container handling facilities** loading and unloading of containerised cargo using specialised equipment. Loading/unloading containers using non-specialised equipment is considered 'general cargo'.
- **Dry bulk goods loading/offloading** loading and/or offloading of dry bulk goods. This includes ores, grains and other similar cargoes. Different commodity types will often require separate facilities (e.g. grains are not loaded with equipment used for lead ore).
- **Dry docking** dock repair and maintenance facilities. Facilities will vary in their capabilities for different vessel sizes/types repaired, and the types of repair available.



- **General cargo handling** loading, unloading and handling of cargo non-containerised break bulk goods. This also includes the handling of project cargo. Capabilities will vary depending on the equipment available (e.g., crane sizes/types).
- **Petroleum loading/offloading** specialised facilities for the loading or offloading of petroleum products. Typically, in Northern Australia, these are petroleum product export facilities or facilities for receiving domestic/commercial fuels such as petrol and diesel.
- **Other liquid cargo loading/unloading** equipment for loading tanker vessels with other non-petroleum liquids. These may include industrial acids and other chemical products.
- **Roll-on, Roll-off facilities** specialised facilities capable of offloading either vehicles or vehicle-borne cargo. These facilities include access ramps and hardstand areas.
- **Towage** provision of tug services for moving vessels, typically into and within harbours.
- Nearby Airport A nearby airport allows for the movement of crew on and off ship.

While an outline of port services can be given in general terms, the specifics of a port's capabilities will depend on the equipment facilities available. For example, while a port may be able to receive containers, the reach and height of container cranes will constrain the types of vessels that can be serviced. In some cases, ports may use mobile or makeshift equipment for loading and unloading of vessels for which specialist equipment is not available; however, this is typically to the detriment of efficiency. While a summary is valuable, each port must be considered on a case-by-case basis.

Table 4.6 outlines the key services available at Northern Australian ports.⁵⁷

| | | | , | | | 0.10 | ĺ. | 1 | | 1 |
|---------------|----------------|---------|------------|----------|----------|---------------|--------------|-----------|-------|--------|
| Port | Nearby Airport | Bunkers | Containers | Dry Bulk | Dry Dock | General Cargo | Other Liquid | Petroleum | Ro/Ro | Towage |
| Abbot Point | | | | Y | | | | | | Y |
| Barrow Island | | | | | | | | Y | | |
| Bing Bong | | | | *58 | | | | | | |
| Broome | Y | Y | Y | Y | | Y | | Y | | |
| Cairns | Y | Y | Y | Y | Y | Y | Y | Y | | Y |
| Cape Flattery | | | | Y | | | | | | |

 Table 4.6
 Services Available at Key Northern Australian Ports

⁵⁸ Dry bulk exports are made via transhipment vessel, www.mcarthurrivermine.com.au/EN/AboutUs/Pages/Shipping.aspx (Accessed 5 December 2016).

⁵⁷ www.port-directory.com (accessed 5 December 2016).

| Port | Nearby Airport | Bunkers | Containers | Dry Bulk | Dry Dock | General Cargo | Other Liquid | Petroleum | Ro/Ro | Towage |
|----------------------------|----------------|---------|------------|----------|----------|---------------|--------------|-----------|-------|--------|
| Dalrymple Bay | Y | | | Y | | | | | | Y |
| Dampier | Y | | Y | Y | | Y | Y | Y | Y | |
| Darwin | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Gladstone | Y | Y | Y | Y | | Y | Y | Y | | Y |
| Gove | Y | | Y | Y | | Y | Y | Y | | Y |
| Karumba | | | | Y | | Y | | Y | | |
| Lucinda | Y | | | Y | | | | | | |
| Mackay | Y | Y | | Y | | Y | Y | Y | | Y |
| Milner Bay | Y | | | Y | | | | Y | | Y |
| Mourilyan | | | | Y | | | | | | Y |
| Onslow | Y | | | | | | | Y | | |
| Port Alma (Rockhampton) | Y | Y | Y | Y | | Y | Y | Y | | |
| Port Hedland | Y | Y | | Y | | Y | | | | Y |
| Port Walcott | Y | | | Y | | Y | | Y | | Y |
| Thursday Island | Y | Y | | | | Y | Y | Y | | |
| Townsville | Y | Y | Y | Y | | Y | Y | Y | Y | Y |
| Varanus Island | | | | | | | | Y | | |
| Weipa | Y | Y | | Y | | Y | | | | Y |
| Wyndham | Y | Y | Y | | | Y | | | | |

(Source: www.port-directory.com)



4.1.5.3 Non-Transport Maritime Activities

Ports support a vast array of maritime activities that do not directly provide transport but are critical to the operation of the port and the broader Northern Australian economy. This includes supporting maritime operations essential for the construction, maintenance and ongoing operation of critical Northern Australia assets such as offshore oil and gas installations, subsea pipelines and cables, wharves, jetties and navigation aids, and offshore tourism anchorage points/destinations. In addition, ports fulfil an essential role in supporting fishing operations and emergency response and salvage functions. Balancing these essential activities against transport operations is an essential part of port management and planning.

The superyacht sector is a predominantly non-transport maritime market segment attracting significant attention as an emerging growth industry with potentially significant economic benefits for Northern Australia. The common understanding of superyachts is high wealth individuals chartering a vessel for recreational purposes – these services are primarily for tourism, rather than transport; however, they do have a transport element to their operations (as is the case for cruising). For ports, this sector provides a range of opportunities and challenges. Ports will need to consider if and how they support this sector.

4.1.5.4 Competition

Many of Australia's key infrastructure assets (including ports) exhibit monopoly characteristics, providing the potential to use market power to earn unfair rewards. The two key methods for managing this issue are competition and regulation. The credible threat of competition is considered the best constraint on the market power of infrastructure owners, with regulation a second-best substitute for competition.⁵⁹

Regulatory arrangements for managing competition issues for fixed infrastructure such as ports are set out under Part IIIA of the *Competition and Consumer Act 2010* (CCA). Part IIIA of the CCA is also known as the National Access Regime.

Ports often compete strongly in the development phase of new resources projects. These projects may require the creation of new export channels to link the project with markets, involving the creation of new road, rail and/or pipeline infrastructure to bring commodities to port and then to market.

There is a number of new resources projects currently under development, which could potentially be channelled through multiple Northern ports. Infrastructure Australia has evaluated a range of projects in Northern Australia and has identified the potential gateway ports, which could be used, as detailed in **Table 4.6**.

⁵⁹ Mr Rod Sims, ACCC Chairman, Ports Australia Conference, Melbourne, 20 October 2016, portsaustralia.com.au/assets/Uploads/Sims-Rod-Ports-Whatmeasure-of-regulation-Oct-2016.pdf.



| Table 4.7 Growth Regions and their Potential Gateway Ports | | | | | | | | | |
|--|-------------------------------------|---|--|--|--|--|--|--|--|
| Region | Growth Commodities | Potential Gateway Ports | | | | | | | |
| Galilee and Bowen Basins | Black coal | Abbot Point Townsville Hay Point | | | | | | | |
| Cloncurry | Copper, gold, zinc, lead, magnetite | Townsville Karumba | | | | | | | |
| Roper River / McArthur Basin | Iron ore, lead, zinc, silver | destinations in Darwin Roper River | | | | | | | |
| Tennant Creek | Phosphate | Bing Bong Darwin Karumba Townsville | | | | | | | |
| Alice Springs | Oil, shale gas, rare earths | Darwin South Australian ports | | | | | | | |
| Pilbara | Iron ore | Port Hedland Cape Lambert Dampier Anketell Point ⁶⁰ | | | | | | | |
| Canning Basin | Oil, shale gas | Wyndham Broome Port Hedland | | | | | | | |
| East Kimberly / Ord | Agricultural products | Wyndham Darwin | | | | | | | |
| Browse Basin | LNG | Broome Port Hedland Dampier | | | | | | | |
| North-West Shelf | Oil, gas | Onslow Barrow Island Burrup Peninsula | | | | | | | |
| Burdekin, Flinders and Gilbert Rivers | Agricultural products | North Queensland Ports Brisbane | | | | | | | |

le 4.7 Growth Regions and their Potential Gateway Ports

(Source: Infrastructure Australia, 'Northern Australia Audit-Infrastructure for a Developing North', January 2015)

 $^{^{\}rm 60}$ Noting the Anketell Point project has been abandoned as at the time of publication.



Some stakeholders argue coastal shipping is the most environmentally sustainable and economic mode of transport across longer distances. Using coastal shipping can potentially reduce road congestion and reduce bulk transport bottlenecks. Coastal shipping is particularly valuable for the movement of bulk cargo, and project cargo that is too large for other transport modes.

Northern Australia is responsible for a significant proportion of the domestic coastal trade in bulk commodities. In 2014-15 the movement of bulk commodities such as bauxite, iron ore and petroleum, accounted for over 85 per cent of domestic coastal shipping tonnage in Australia.⁶¹

Transport of bauxite between Weipa and Gladstone (in Queensland) and iron ore from the Pilbara to Port Kembla alone accounted for 33 per cent and 7 per cent, respectively, of total domestic sea cargo in 2014-15. Weipa and Port Hedland are the main ports for loading coastal trading cargo.

4.1.6.1 The Coastal Trading Fleet

For the purposes of this Study, the coastal trading fleet was considered to be those Australian fleet vessels that engaged for part, or all, of the year in trade on the Australian coast.⁶² There were 112 Australian fleet vessels in 2014-15, of which a proportion participated in coastal trade.⁶³ Key segments include:

Vessels that traded overseas

- Bulk Carriers These were typically larger bulk carriers, used for the transport of mineral products or dry bulk (e.g. grain).
- Container vessels These vessels operated on fixed liner routes between Australia and • overseas ports.
- Livestock carriers These vessels operated between Australia and overseas destinations. •
- LNG Tankers LNG tankers operated between Australia and overseas destinations. .
- LPG tankers –LPG tankers operated both international and domestic routes. •

Domestic-only vessels

- General cargo vessels The majority of smaller vessels traded in Northern Australia. •
- Ro/Ro passenger ferries These vessels operated fixed routes, effectively as an extension • of road infrastructure.
- Transhipment and bunkering vessels this includes bunkering and ore-transfer vessels. • These operations are considered an extension of port activities.
- Others this includes bulk carriers, two products tankers and seven specialised vessels.

The table overleaf discusses key segments⁶⁴.

⁶¹ BITRE, 'Australian Sea Freight 2014-15', Canberra, 2017

 ⁶² This definition is different to definitions used in other reports, such as BITRE Australian Sea Freight 2014-15.
 ⁶³ Unpublished analysis of BITRE, 'Australian Sea Freight 2014-15, Canberra, 2017

⁶⁴ Analysis developed by the report authors for the purposes of the Study.

Table 4.8 Breakdown of the Australian Fleet and Coastal Trading Vessel type Sub-Category Coastal No. Notes Trading? Ships 9 These were all larger vessels of approximately 150,000 deadweight tonnes or more **Bulk Carrier** International-only No Vessels engaged in a mixture of international and domestic voyages. Domestic voyages Some domestic Yes 13 primarily involved the movement of ores. International **Container Vessel** N/A No 11 All vessels were engaged on international liner routes. Livestock Carrier N/A No 6 These vessels were used for the live export trade. LNG Tanker N/A No 11 These vessels were used exclusively for LNG export. LPG Tanker N/A Limited 3 Vessels engaged in the domestic shipment of LPG, as well as export. Other **Products Tanker** Limited 1 Coastal trading limited to a single commodity – Fuels. Ice Breaker No 1 This vessel is not used in commercial trade. General cargo Some 4 Three of four vessels engaged in coastal trade. **Australian Fleet General Cargo** The majority of these are landing vessels, and all are relatively small: Northern Australia Yes 20 • Average size = 1,274 deadweight tonnes. • Maximum size = 3,200 deadweight tonnes. Not engaged in trade within Northern Australia. These vessels operate almost exclusively Bass Strait Yes 4 on fixed routes/schedules across Bass Strait. **Ro/Ro Passenger** These vessels provided transport to vehicles and passengers on fixed routes. Vehicles may Domestic N/A 6 No Ferries have carried cargo separately to vessel operations. Port Infrastructure Bunkering 8 These activities are an extension of port infrastructure and services, rather than maritime No vessels 3 Tranship / Transfer No transport. Other 3 This group ranged in size from approximately 30,000 to 50,000 deadweight tonnes. **Bulk Carrier** Yes Cement Carrier Limited 3 Coastal trading limited to a single commodity class – Cement products. Limited 1 Coastal trading limited to a single commodity – Sugar. Sugar Carrier Other Specialist Bulk Limited 3 Coastal trading limited to a single commodity class – Aluminium ores. Products Tanker 2 Coastal trading limited to a single commodity class – Fuels. Limited Total 112



4.1.7 Cruise Shipping

The Australian cruise sector has been evolving from a small market sector to a significant tourism activity, one that is becoming increasingly important to regional economies. The Australian cruise industry has grown from less than 200,000 passengers in 2005 to more than one million in 2015.⁶⁵

Cruise shipping continues to experience strong growth, both in Northern Australia and nationally, with the national industry enjoying 14.6 per cent growth in 2015.⁶⁶ The cruise sector is the fastest growing sector of Australian tourism, and the Australasian region is the fastest growing region of the international cruise market. The Australian domestic cruise market enjoys the highest rate of market penetration in the world, with the equivalent of 4.5 per cent of Australians taking a cruise in 2015.⁶⁷

The South Pacific is the most popular destination for Australian cruises at 36.3 per cent, followed by Australia (25.5 per cent), New Zealand and Europe (9.5 per cent each) and Asia at 9 per cent.⁶⁸ The popularity of South Pacific, Australian and Asian cruises places Northern Australia in a good position as a cruise destination.

Globally the cruise industry has an economic impact of \$119.9 billion, employing almost one million people. Australia, the Pacific and New Zealand account for 9.1 per cent of cruise ship deployments.⁶⁹ In 2012-13, the Australian cruise shipping industry's total output was around \$2 billion. In that year, total expenditure by cruise passengers alone was over \$574 million – an increase of almost 30 per cent on the previous financial year.

The number of cruise ships visits to Northern Australia ports has increased by seven and nine per cent respectively over the last two years, with passengers spending over 265,000 days at Northern Australia ports in 2014-15 and contributing \$116 million in direct expenditure for the Northern Australian economy.

Cairns, Darwin and the Whitsundays were the busiest ports for cruise ships in 2014-15 with 42, 36 and 44 visits respectively. ⁷⁰

⁶⁵ Cruise Lines International Association Australasia, 'Ocean Cruise Passengers Australia 2015', Sydney, 2015.

⁶⁶ Ibid.

⁶⁷ Ibid. ⁶⁸ Ibid.

⁶⁹ Cruise Lines International Association, '2016 Cruise Industry Outlook', Washington, 2016.

⁷⁰ Australian Cruise Association, 2016, Annual Report 2015 2016, www.australiancruiseassociation.com/sites/default/files/160636-aca-ar-2016-hr-01-09-2016.pdf



4.2 Challenges

The challenges faced by the Northern Australian maritime industry vary significantly between its different sectors.

4.2.1 Port Infrastructure

Ensuring adequate infrastructure is available for the efficient delivery of port services is critical to accommodating future growth, and for dealing with market changes. The issues and challenges for these important assets were comprehensively explored in Infrastructure Australia's Northern Australia Audit.

Port infrastructure includes a broad range of assets such as berths, cranes, loading facilities, rail and road infrastructure, passenger terminals, and supporting services such as pilotage and navigation aids. Port infrastructure is highly capital intensive to construct and maintain, requiring long-term demand to justify investment. This carries a substantial investment risk that must be adequately managed by port owners, port operators and tenants.

Some stakeholders expressed concerns that a lack of facilities and limitations of existing shipping channels at some Northern Australia ports was constraining growth in bulk and container shipping as well as cruise shipping. As shipping lines continue to drive economies of scale by using bigger ships, the inability of some ports to adapt their infrastructure may limit their economic opportunities.

At some larger ports, the relative lower level of investment in facilities for container and cruise shipping compared with facilities for the resources sector is due to the larger volumes and revenues generated by the movement of resources at these ports and comparatively little demand for other services. Space for the container and cruise industries tend to be 'crowded out' at these ports.

Case Study: Port of Cairns

One illustration of the impacts of inadequate port infrastructure (and an example cited by the Business Reference Group) is the Port of Cairns.

Cairns is an increasingly popular cruise destination. However, as the draughts of most cruise ships exceed the depth of the existing shipping channel in the port, 31 of the 65 scheduled cruise ships that visited Cairns in 2016 were obliged to moor off 'Yorkey's Knob', a location 20 kilometres from the CBD.

There are concerns this adversely impacts the local tourist economy by reducing the number of cruise passengers who would otherwise have made a day visit to Cairns had their ships been able to berth along the quayside. Instead, passengers must wait for a transport boat to shore and then a bus to the CBD.



The Cairns Shipping Development Project aims to widen and deepen the approach channel to the port, providing access for cruise vessels. On 11 July 2017 the Queensland Government announced progress on this project, with the Ports North releasing an Environmental Impact Statement for public comment. Public consultation on the draft EIS closed on 25 August 2017 and a revised draft is currently being considered.

The Queensland Government has indicated that, should the project proceed, up to 800 new and indirect construction jobs could be created over the five year construction period and 2,700 jobs thereafter.

4.2.1.1 Financial Constraints

Some port operators have experienced difficulties securing funding for expanded port infrastructure. Given the size of the investments and the inherent volatility in some resources projects, it can be difficult for port operators to provide certainty to financiers that the additional infrastructure will continue to generate revenue flows into the future. Federal and state governments have been asked to respond to this uncertainty by providing a debt guarantee or direct financial assistance.

Case Study: Economic Volatility and Port Anketell

Economic volatility can be a significant impediment to port investment, particularly where a port is linked to a limited number of shippers and commodities.

For example, the West Pilbara Iron Ore Project would have developed a new high capacity port at Anketell in Western Australia. The project would have combined a multi-user port with a purpose-built heavy haul railway connected to proposed iron ore mines nearby, creating a port capable of exporting significantly more iron ore than is currently exported through Port Hedland. However, the project was abandoned due to a downturn in commodity prices.

The limited number of shippers and the single commodity to be exported made this project more exposed to risks associated with market volatility.

A key barrier to port infrastructure investment is the 'first mover effect', where the party seeking additional specialised infrastructure (e.g. a new port terminal or berth) bears the full capital cost and risk.

This effect acts as a barrier to investment, as the first mover must be satisfied that the cost of the new infrastructure can be recovered through earnings. If the probability of recovering their capital is uncertain, some players may deliberately defer the investment, aiming to 'free ride' on an eventual first mover. This is less of an issue when the market opportunity is large enough to reduce risk and make investing a safe prospect. However, where the investment is more marginal, the investment may not happen and a potential benefit is lost.⁷¹

⁷¹ Infrastructure Australia, 'Northern Australia Audit', Sydney, 2015.


It is also worth noting that making a significant infrastructure investment alone can tie up valuable borrowing capacity. This may prevent investors making subsequent valuable investments.

Once port infrastructure is operational, port fees and other charges associated with moving goods through the port are occasionally cited as issues of concern for shippers. These fees and charges add to the cost of shipping goods, ultimately increasing the cost of trade.

4.2.1.2 Regulatory Challenges

Port operators have also raised issues regarding ownership laws, environmental regulation and land tenure laws affecting their ability to build additional infrastructure. In cases where ports have been part privatised, the different risk profiles of private and public owners can affect willingness to invest in additional infrastructure. Similarly, financiers are likely to be hesitant to provide funding for investments at ports where land tenure has not been guaranteed, resulting in increased borrowing costs or an unwillingness to provide funding altogether.

4.2.1.3 Identified Port Infrastructure Requirements

Table 4.8 lists the findings of a 2015 assessment of Northern Australia's port infrastructure requirements. Meeting the challenge of financing and providing this infrastructure will be a key challenge for stakeholders.

| Port | Infrastructure Requirements | | |
|-------------|---|--|--|
| Abbot Point | Expansion (potential for two additional 60 million tonne terminals) for Galilee Basin coal development, with resolution of dredging issue required | | |
| Ashburton | Bulk liquid dedicated infrastructure (North West Shelf and Carnarvon Basin LNG) | | |
| Bing Bong | Iron ore specialised handling equipment upgrade – possible (alternative to Darwin) | | |
| Broome | Bulk liquid dedicated infrastructure (North West Shelf, Canning Basin oil and gas) – possible | | |
| Cairns | Cruise vessel facilities, including channel capacity and wharf extension, subject to constraints on dredging | | |
| Dampier | Iron ore (Pilbara) and bulk liquid (Carnarvon Basin LNG) upgrade | | |
| Darwin | Dedicated livestock handling and storage facilities Dry bulk berth and handling facilities Rail loop or other rail receival solution to accommodate mining throughput growth Improved cruise vessel facilities and associated infrastructure | | |

Table 4.9 Identified Port Critical Infrastructure Needs – Northern Australia 2015



| Port | Infrastructure Requirements | | | | |
|---------------|---|--|--|--|--|
| Gladstone | Coal specialised handling equipment upgrade and channel duplication | | | | |
| Hay Point | Coal specialised handling equipment's upgrade (25 million tonne metallurgical coal demand) | | | | |
| Karumba | Expansion, including transhipment infrastructure, to accommodate possible future irrigated agricultural exports and North West Queensland mineral exports | | | | |
| Mackay | Intermodal facilities and infrastructure and improved land transport access for imports | | | | |
| Nhulunbuy | Repair and upgrade of government wharf for freight and fishing (commercial, recreational use) – possible following investigation | | | | |
| Port Hedland | Outer Harbour development (Pilbara iron ore, Canning Basin oil and gas) Intermodal and logistics facilities | | | | |
| Port Melville | Development of ancillary port infrastructure to service the oil, gas, mineral sands and agricultural industries | | | | |
| Townsville | Additional bulk berth for increased mining output Common user rail receival facility Outer Harbour development for potential large-scale mining export increase | | | | |
| Wyndham | Dry bulk dedicated infrastructure (Ord Stage 2 and Canning Basin) | | | | |

(Source: Infrastructure Australia, 'Northern Australia Audit–Infrastructure for a Developing North', January 2015)

4.2.1.4 Supply Chain Connectivity

While the purpose of this Study is to focus on aviation and maritime transport issues, road and rail connectivity are important considerations in the context of ports, due to their role in connecting their hinterlands with maritime transport: This cannot occur without effective supply chains. Breakdowns in these supply chains can have a significant impact on port efficiency, as well as the broader economy.

Key points at which hinterland supply chains can break down is, the beginning or end of a journey (referred to as the 'first mile' and 'last mile', respectively), and at the port interface (sometimes referred to as the 'port gate').

Port supply chain connectivity can be a significant issue affecting overall transport efficiency. Transport to or from the port makes up a significant proportion of the overall cost of shipping – sometimes as much as half. Having efficient first and last mile transport options available is



essential to the success of a port and associated shipping but is often outside of the port's control.⁷².

Connectivity issues in Northern Australia, often driven by limited infrastructure, can hamper the competitiveness of Northern Australian businesses when compared to their Southern rivals. The realities of small, dispersed populations, means this issue is unlikely to be completely resolved. Finding ways to improve efficiency using existing infrastructure will be essential to minimising competitive disadvantages.

Supply chain connectivity is particularly important for inland communities to be able to take advantage of maritime trade.

Supply chain connectivity issues are considered further in the National Freight and Supply Chain Strategy.

4.2.1.4.1 Infrastructure Inadequacies

An effective supply chain relies upon infrastructure that is adequate for the freight task. Problems occur where there is too little infrastructure for the volumes of goods being moved – this can occur where there has been insufficient investment in infrastructure to meet freight task growth, or where overall demand is insufficient to justify greater infrastructure investment

Where the volumes of goods transport increase briefly, but are low overall (such as in the case of a seasonal peak), it can be difficult to justify expenditure on infrastructure upgrades. For the movement of agricultural and other goods, the volume being moved to the port is significant during peaks, but is lower over the course of the year. The result is limited transport infrastructure for the volume of goods transported in peak periods, leading to inefficiencies. This is exacerbated by disparate sources of goods, lessening the business case for constructing transport infrastructure. For many agriculture operations, limitations on the use of high productivity vehicles on rural roads can significantly affect the efficiency of transporting goods to port.

In the case of the resources industry, the volume of goods tends to be far greater, and heavily reliant on maritime transport connections. As a result, resources companies will generally integrate transport links to ports into the project plan for any development projects, and often construct such links primarily or completely at their own expense. However, for small or start-up resources projects, accessing rail sidings to link to port infrastructure can be a key challenge.

Connectivity issues can also occur where cargo volumes grow to exceed the capacity of existing infrastructure. As the national freight task grows over the coming decades, investment in critical transport infrastructure links will need to continue to ensure hinterland connectivity is not hindered.

Highway design was identified by some Business Stakeholder Group members as an area of concern, with restrictions on the. Bruce Highway in QLD being specifically identified. In particular, concerns were expressed about restrictions limiting the majority of the highway to a maximum B Double vehicle size, with a payload of approximately 42 tonnes. It was pointed out that some more

⁷² competitionpolicyreview.gov.au/files/2014/06/Shipping_Australia_Ltd.pdf.



modern high productivity vehicles achieve payloads of 80 tonnes depending on the type of freight being transported, potentially halving the number of trucks on the road.

4.2.1.4.2 Encroachment and Planning Issues

At the port gate, planning issues can have a significant impact on the integration of the port with the broader supply chain. Planning issues arise where planning has been insufficient, or has been unable to foresee and provide for port needs. It can also occur where planning processes and decision-making frameworks do not provide for port needs to be adequately considered.

As large, fixed infrastructure, ports require a long-term planning window, which considers the needs of their region for decades into the future. This level of forecasting can be challenging, with new issues and needs emerging that could not reasonably been foreseen. This requires adjustment to plans, and can result in difficulties in accommodating new needs. This can place a strain on port supply chains.

Recent growth in the use of high productivity vehicles have placed a strain on some ports and surrounding areas. The current high productivity vehicle framework has been in place for approximately a decade, allowing larger vehicles to be used that can carry significantly more cargo per vehicle. However, these vehicles have specific needs in terms of road design, with many ports and surrounding road networks unable to accommodate them. Some Business Stakeholder Group members suggest, in many cases, the roads are capable of handling these vehicles but the bridges, culverts, intersections and over taking lanes are not designed or constructed to allow the use and approval of these vehicles. These roads were often built long before the high productivity vehicle framework was introduced and may not necessarily be readily upgraded. This is an example of new transport needs placing a strain on port plans.

The Business Stakeholder group noted urban encroachment is a common planning issue for many ports, where urban developments are allowed to encroach on the port footprint. This can occur where decision-making frameworks do not consider port needs, or where planning windows are too short (e.g. a 10 year, rather than 50 year planning window). Encroachment reduces the separation between ports and urban areas, potentially causing conflict resulting from differing needs, and creating public resistance to future port development.

Urban encroachment often limits a port's access to critical transport corridors, preventing future road and rail developments necessary to meet growing demand. The result can be reduced efficiency, high development costs (as corridors are bought back), or deferral of trade to another port (with an associated increase in transport costs). To deal with this issue, planning authorities need to adopt a long-term view, allowing for a port's long-term growth.



4.2.2 Shipping

The global shipping market has faced significant challenges in recent years due to subdued demand for shipping (driven by a downturn in the global economy) and an oversupply of vessels. Internationally, freight rates are at historically low levels, leading to the collapse of shipping lines and consolidation across the market.⁷³ As a result, ship owners have been accepting low (and potentially loss-making) rates as an alternative to the higher costs associated with idle vessels.

Efficient new vessels are continuing to enter the market (often the product of earlier capital deployment decisions made in a significantly different financial environment). Some commentators estimated new orders in 2013 totalled 1.69 million TEU (compared with 0.4 million in 2012).

The oversupply of vessels pushes older vessels out of the market. The equivalent of 450,000 twenty-foot equivalent units of ship capacity was scrapped globally in 2016 from predominantly smaller and older vessels.⁷⁴

Overcapacity and the increasing size of vessels push increasingly larger vessels down to thinner routes, which may have longer-term impacts for Northern Australia. Larger vessels put additional pressures on ports and infrastructure, driving the need for additional investment such as larger cranes and deeper channels, and higher port fees.

The dry bulk carrier market has also experienced significant oversupply, resulting in a drop in freight rates of 80 per cent in the year ending February 2015.⁷⁵ For some vessels, this means daily charter rates are approximately half of running costs and many ship owners are losing significant money.

While the low freight rates are beneficial for shippers, the potential for shipping company failure also poses significant risk. A recent company collapse left large volumes of cargo stuck aboard vessels or in container handling facilities with significant flow-on economic impacts for traders.⁷⁶

⁷³ www.abc.net.au/news/2016-11-28/collapse-of-hanjin-tip-of-shipping-industry-iceberg/8064686; www.cltx.com/dry-bulk-arena-excess-supply-and-negative-freight-rates/

⁷⁴ www.reuters.com/article/shipping-scrapping-idUSL8N1A41NS

⁷⁵ www.hellenicshippingnews.com/pooling-fleet-to-combat-dry-bulk-oversupply/

⁷⁶ www.abc.net.au/news/2016-11-28/collapse-of-hanjin-tip-of-shipping-industry-iceberg/8064686



Case Study – Hanjin Collapse

Hanjin shipping was one of the world's largest container shipping lines, formerly operating approximately 60 liner and tramp services around the globe, and carrying over 100 million tons of cargo annually. ⁷⁷Hanjin's profitability was severely impacted by the ongoing downturn in the global container shipping industry associated with weak global demand, overcapacity on container vessels, and other market and macroeconomic factors.

In April 2016, Hanjin applied to its creditors for debt restructuring, in order to avoid formal insolvency proceedings.⁷⁸ On August 31, 2016, Hanjin filed for receivership, triggering a wave of asset confiscation. Hanjin vessels experienced access issues to ports globally as service providers became concerned about being paid to load and unload Hanjin vessels.^{79,80}

Hanjin Shipping's dissolution was the largest and most significant bankruptcy in the container transport industry, causing worldwide disruption in shipping as vessels were left stuck at ports and canals waiting for cash payments.⁸¹

The impacts of Hanjin's bankruptcy was not limited to the transport industry, creating a significant ripple effect into other industries. Other businesses found themselves without required inventory, as their goods were stuck at sea. This led to supply constraints and lost sales revenue. The effect on retailers in particular was increased due to the timing of the collapse, occurring in the period retailers obtain inventory for Christmas and New Year sales.

While the total impact of this collapse cannot be easily quantified, it involved at least US\$14 billion in cargo and further downstream impacts. It highlights the critical function performed by shipping and the potential impacts of a market or business failure.⁸²

4.2.2.1 Liner Trade

The liner shipping industry has experienced consolidation in the past 12 months. As a result, several registered conference agreements have been terminated. Consolidation is a result of acquisition or mergers (takeovers) between two or more shipping lines, in an effort to combine a wealth of stock, equipment and market power within a single entity (a shipping line). A recent example of consolidation is the 2016 acquisition of Hamburg Sud by Maersk.

4.2.2.2 Reduced Schedules

As liner shippers move to limit losses, some stakeholders have identified this prospect of reduced schedules as a key concern.

⁸¹ Ibid

⁷⁷ www.porteconomics.eu/2016/09/10/the-hanjin-shipping-bankruptcy-how-big-of-an-impact/

⁷⁸ www.wsj.com/articles/hanjin-shipping-seeks-creditor-led-debt-restructuring-1461337189

⁷⁹ www.smh.com.au/business/world-business/hanjin-bankruptcy-causes-shipping-chaos-20160902-gr7h68.html

⁸⁰ www.abc.net.au/news/2016-09-05/south-korean-shipping-collapse-leaves-freight-stranded/7814768

⁸² www.abc.net.au/news/2016-11-28/collapse-of-hanjin-tip-of-shipping-industry-iceberg/8064686



Reduced schedules can have significant financial impact for business, requiring more stock in transport and different stocking and reorder points throughout the supply chain. Business may also become less agile and responsive to customer requirements.

For Northern Australia, reduced schedules would compound the existing challenges associated with longer shipping times due to domestic transhipment.

4.2.2.3 Coastal Shipping

Domestic coastal shipping movements are projected to grow only 15 per cent over 2010 levels to 2030. This outcome is highly dependent on growth in other coastal freight to offset likely continuing declines in domestic coastal petroleum and to a lesser extent, iron ore movements.⁸³

4.2.2.4 Australia's Regulatory Framework

Australia's coastal trading regulatory framework aims to ensure Australian vessels receive priority in carrying cargo between Australian ports, thereby limiting competition on these routes. This system aims to offer a level of protection for Australian flagged vessels operating services on the Australian coast. However, the limited availability of suitable Australian vessels means the majority of cargo is carried aboard foreign vessels under a Temporary Licence. The regulatory framework also creates a range of administrative challenges for shipping companies and Australian businesses reliant on coastal shipping.

Examples of these challenges include:

- The requirement for a minimum of five voyages for a new Temporary Licence application. This can create a significant impediment for irregular or rare coastal shipping requirements. For example, if a company is seeking to transport an item on a one-off basis, such as moving oversized and/or heavy machinery, a Temporary Licence cannot be obtained for that task because this would constitute a single voyage.
- Consultations on Temporary Licence applications, which cause in-built delays, even when there are no Australian licensed ships that are suitable to carry the cargo, or able to transport the passengers. For example, there are no Australian licensed chemical tankers, but there must still be a consultation period to allow General Licence holders to provide a Notice in Response that a General Licensed vessel is able to conduct any of these types of voyages.
- Licence variations for Temporary Licence holders can frequently occur due to unforeseeable circumstances and business requirements. Once updated information is known, the Temporary Licence holder is required to lodge an application for a variation at any time before two business days of sailing. Varying authorised voyages costs, a further \$200 per application, and applications to vary Temporary Licences to include new matters

⁸³ BITRE, 'Freightline 1 – Australian freight transport overview', Canberra, 2014.



cost an additional \$400 per application. These requirements of the Act impose additional regulatory burdens on businesses that use shipping without any clear benefits for Australian licenced shipping.

Over the first three years of the Coastal Trading Act, there was a 63 per cent decline of the carrying capacity of the fleet of major Australian registered trading ships with coastal trading licences. ⁸⁴

4.2.3 Macroeconomic Issues

Macroeconomic issues not only affect financial risk, but also affect broader port performance. Where broad-based macroeconomic factors reduce trade, this can affect port throughput and earnings. Similarly, depressed economic conditions can alter customer choices on transport options and willingness to pay for services. As a current example, a number of business stakeholder group members identified higher electricity prices as impacting trade.

⁸⁴ BITRE, 'Australian Sea Freight 2013-14, Canberra, 2014.



4.3 Opportunities

Australia's reliance on Northern Australia for commodity exports carried by commercial shipping will continue for the foreseeable future. The continued growth of the Asian middle class can be expected to fuel ongoing demand for Australia's resources and agricultural products, the majority of which will need to be shipped by sea.

For Northern Australian ports, this means the aggregate level of their throughput can be expected to remain high. Local demand will depend on local conditions, however overall the prospects for continued growth are good. Some ports can be expected to face a reduction in the cargo task, while other ports can be expected to continue to experience significant growth. In particular, new resources and agricultural projects can be expected to fuel demand.

Outside of the resources sector, there is potential for increased demand for the export of goods as the relative price of these goods decreases with the fall of the Australian dollar, and with the reduction or removal of tariffs from recently settled free trade agreements.

A large proportion of non-resource goods produced in Northern Australia for domestic consumption (largely agricultural goods) are transported south via road or rail. Refinements to the policy and regulatory framework could significantly improve efficiency by ensuring the availability of both complementary and competitive maritime transport options.

4.3.1 Advanced Port Financing

Similar to the opportunities identified for Airports, the growth on innovative financing mechanisms in recent decades provides significant opportunities for proponents of port development.

A range of government programs are available to provide strategically targeted port investment to help drive better connectivity to Northern Australia. These include the Northern Australia Infrastructure Facility (NAIF), the Building Better Regions Fund and the Regional Aviation Access Programme.

The \$5 billion NAIF offers concessional finance over five years to encourage and complement private sector investment in infrastructure that benefits Northern Australia. This may include developments in airports, communications, energy, ports, rail and water. Investment will be spread across the three jurisdictions in Northern Australia.

4.3.2 Trade Balance

The reversed trade balance experienced by Northern Australia, compared to the rest of the country, presents unique business opportunities. Unlike the rest of the country, Northern Australia is a net exporter of containers, requiring the expensive importation of empty containers to service export demand. This presents an opportunity for businesses able to position themselves as a local importer of goods. The trade imbalance means commercially advantageous terms may be able to be negotiated for the movement of goods into Northern Australia. This has the potential to be mutually beneficial – for transport providers, moving containers at a heavily discounted rate is better than importing them empty.



In addition to being able to bring goods into Northern Australia cheaply, businesses in Northern Australia could also potentially access the relatively abundant supply of hold capacity on passenger aircraft. By combining these opportunities, businesses may be able to take advantage of the supply chain dynamics in Northern Australia to adopt business models based on inputs moving by sea and outputs by air, such as may be found in some manufacturing sectors. In this way, flexible and adaptable businesses may be able to generate new economic opportunities.

4.3.3 Coastal Trade

The Business Stakeholder Group considers Australia's growing freight task, and largely coastal population, presents a significant opportunity for the future growth of coastal trading. As moving goods by land-based transport becomes increasingly infrastructure intensive, moving goods by sea can be expected to become increasingly important. This trend can be expected to include Northern Australia, where land-based infrastructure challenges may further encourage the use of coastal shipping.

While the total volume of cargo shipped via the coastal trade has reduced in recent years, there remains a base of demand. The growth prospects for this demand will reflect factors related to changes in Australia's manufacturing industry, as well as regulatory and other issues, although it is not clear the extent that a growth in the national freight task will be experienced uniformly across supply chains. Importantly, Australia already has significant port infrastructure in place, minimising the infrastructure demands of a shift to maritime transport. With suitable regulatory reforms, it is possible to support a viable and vibrant coastal shipping industry. This will require ongoing cooperation between industry and government to achieve.

The opportunities available in coastal trading has seen renewed interest in this sector. This has included some organisations looking to establish new coastal trading services in Northern Australia.⁸⁵

4.3.3.1 Coastal Trade Regulatory Reform

On 21 March 2017, the Government affirmed its commitment to reforming coastal shipping, by releasing the Discussion Paper seeking comment from ship operators, shipping companies, shippers and other stakeholders on proposed changes to Australia's coastal shipping regulatory regime. The Discussion Paper proposed to reduce red tape by removing the aspects of the coastal trading regime reported as unreasonably limiting, inflexible or onerous for stakeholders. It also proposed the introduction of a number of seafarer training initiatives aimed at developing and retaining critical maritime skills in Australia. The Department received 67 submissions in response to the discussion paper. The Government considered the submissions and on 13 September 2017 introduced the Coastal Trading (Revitalising Australian Shipping) Amendment Bill 2017 to the Parliament. The Amendment Bill makes changes that will lower regulatory burdens, cut red tape and provide greater flexibility to buyers and suppliers of shipping services.

⁸⁵ www.thedcn.com.au/new-coastal-shipping-company-to-launch-next-year, accessed 3 November 2017



4.3.3.2 Other Regulatory Reforms

The Business Stakeholder Group identified opportunities to amend import and export rules to facilitate improved access to coastal trading services delivered through triangular routes with an intermediate overseas port call. Achieving this opportunity would require amending import and export rules to 'quarantine' domestic cargo carried aboard a vessel on such a journey while overseas.

Currently, a number of regular scheduled liner services for both container (dry& reefer) and project cargo operate between Darwin and SE Asia and Townsville and SE Asia, providing a vital reliable link to outside markets for both importers and exporters. If such services were able to carry coastal cargo between domestic ports via an overseas destination (such as Melbourne to Darwin via Singapore) without the need to meet full export and re-import requirements, it is likely demand for these services would increase.

Industry feedback suggests, the requirement to meet import and export requirements currently adds considerably to the cost and complexity of using these services, affecting overall demand. With suitable regulatory amendments, it may be possible for domestic cargo to be carried securely aboard an approved vessel making an intermediate international stop, and still consider that cargo domestic. This amendment may provide for increased transport options and demand for coastal transport services.

4.3.4 Cruise ships

The Australian cruise industry is expected to continue to grow. Similar factors to those driving growth in aviation can be expected to encourage growth in the cruising industry. The falling Australian dollar and rising Asian middle class may attract greater demand for cruising. Passenger numbers have grown consistently and are expected to reach two million by 2020. The economic contribution of the industry was \$3.2 billion in 2013, and this is expected to rise.

For Northern Australia, attracting cruise ship patronage presents a key opportunity for economic growth. Northern Australia has a competitive advantage in being able to offer unique passenger experiences not available elsewhere.

Since 2010 Tourism Australia's global consumer marketing campaign, 'There's nothing like Australia', has been successfully attracting millions of international travellers to Australia by showcasing some of the best attractions and experiences Australia has to offer. The campaign operates in a series of phases, each with its own focus, and has had a significant impact on tourist expenditure – the 2013 'Restaurant Australia' phase of the campaign increased tourist food and wine spend by over \$1 billion (\$1.03 billion or 24.6 per cent). The current phase of this campaign focuses on one of Australia's key competitive advantages - our aquatic and coastal offering; Northern Australia's unique aquatic and coastal offerings provide an opportunity to attract further demand for international visitors to Northern Australia.

To realise these advantages, Northern Australian centres will require strategies to ensure the consistent delivery of positive experiences for passengers. Service providers will need to work with stakeholders, including local authorities, local business and with relevant tourism organisations to



maximise demand and sustainability to ensure suitable attractions and services are available and sustainable.

For some centres, cruise companies have found trading hour restrictions mean there is little on offer for passengers, limiting the capacity of local economies to harness the benefits of cruise visits. Local authorities may consider pursuing the establishment of special trading hours when a cruise vessel is in port.

4.3.5 Superyachts

Superyachts are an emerging growth industry with potentially significant economic benefits for Northern Australia. The peak body for the sector, Super Yacht Australia, has indicated that there is significant demand from the world's wealthiest individuals for high-end luxury superyachts in Australia. The current superyacht industry is worth approximately \$2 billion to the Australian economy, with approximately 60 superyachts per year cruising privately in Australia.⁸⁶

There is large capacity for growth in this sector, with key opportunities existing in tourism activities and maintenance and repairs. Some sources suggest the average superyacht may spend \$20,000 per day on tourism activities, with a total of \$187.5m spent locally by passengers and crew in 2016.⁸⁷ However, the largest area of domestic expenditure was on maintenance and repair, with \$574.5m spent in 2016.⁸⁸ Infrastructure providers, such as ports, have an opportunity to diversify their revenue streams by taking advantage of the growth of this emerging industry.

⁸⁶ Super Yachts 2016, '2016 Economic Impact of Superyachts in Australia', 2016

⁸⁷ Ibid ⁸⁸ Ibid

Data Notes

Section 1.3 Scope

SA2s are a spatial unit in the Australian Statistical Geography Standard (ASGS) used by the ABS to disseminate a broad range of social, demographic and economic statistics. The ASGS is broadly based on the concept of a functional area from which people come to access services from a centre. The ASGS has six hierarchical levels comprising in ascending order: Mesh Blocks, SA1s, SA2s, SA3s, SA4s and States/ Territories. Each level directly aggregates to the level above and each hierarchical level collectively covers all of Australia without gaps or overlaps. SA2s are a general-purpose medium-sized area built from whole SA1s. Their aim is to represent a community that interacts together socially and economically.

In line with the Infrastructure Australia, Northern Australia Audit of January 2015, the Study includes all SA2s in the Northern Territory, Newman SA2 in Western Australia, Gladstone SA2 in Queensland and Gladstone Hinterland SA2 in Queensland, and excludes the Exmouth SA2 and Carnarvon SA2.

Tables 3.9-3.12 Air Cargo Exports

These figures should be considered as indicative of the types of goods, values and volumes, and may be subject to errors including misreporting and should not be used as the basis for commercial decision-making.

Figures 4.1 and 4.2:

Analysis of the Australian trading fleet is based on the data obtained from Lloyd's List Intelligence. Information sourced from various shipping companies, via personal communications, and the Coastal Trading Licensing System (CTLS) are used in the analysis of the trading fleet. The 2012– 13 and 2013–14 results for "Major Australian registered ships with Coastal Trade Licences/General Licences" are based on General Licence data obtained from the CTLS. Data for other years are based on extracts from the Coastal Trade Licences and Permits (COTLAP) system, which was maintained by the (former) Department of Infrastructure and Transport (see Chapter 3 for more information). It is worth noting that for certain years, some Major Australian registered ships with Coastal Trade Licences/General Licences may fall under the Major International trading fleet (due to more than 20 per cent of their port calls being to overseas ports).

See BITRE, 'Australian Sea Freight 2014-15' for details.

4.1.6.3

Vessels were considered to have traded overseas if they took one or more commercial voyages including overseas destinations within the year. Voyages for refit/repair were not considered commercial voyages



Description of AHECC 2-Digit Commodity Codes

| 2-Digit AHECC Code | Category Description | | | |
|--|--|--|--|--|
| LIVE ANIMALS | | | | |
| 01 | Live Animals | | | |
| ANIMAL PRODU | стѕ | | | |
| 02 | Meat and edible meat offal | | | |
| 03 | Fish and crustaceans, molluscs and other aquatic invertebrates | | | |
| 04 | Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included | | | |
| 05 | Products of animal origin, not elsewhere specified or included | | | |
| VEGETABLE PR | ODUCTS | | | |
| 06 | Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage | | | |
| 07 | Edible vegetables and certain roots and tubers | | | |
| 08 | Edible fruit and nuts; peeled of citrus fruit or melons | | | |
| 09 | Coffee, tea, mate and spices | | | |
| 10 | Cereals | | | |
| 11 | Products of the milling industry; malt; starches; inulin; wheat gluten | | | |
| 12 | Oil seeds and oleaginous fruits; miscellaneous grains; seeds and fruit; industrial or medicinal plants; straw and fodder | | | |
| 13 | Lac; gums, resins and other vegetables saps and extracts | | | |
| 14 | Vegetable plaiting materials; vegetable products not elsewhere specified or included | | | |
| ANIMAL OR VEG EDIBLE FATS; A | ETABLE FATS AND OILS AND THEIR CLEAVAGE PRODUCTS; PREPARED NIMAL OR VEGETABLE WAXES | | | |
| 15 | Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes | | | |
| PREPARED FOODSTUFFS; BEVERAGES, SPIRITS AND VINEGAR; TOBACCO AND MANUFACTURED TOBACCO SUBSTITUTES | | | | |
| 16 | Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates | | | |
| 17 | Sugars and sugar confectionery | | | |
| 18 | Cocoa and cocoa preparations | | | |
| 19 | Preparations of cereals, flour, starch or milk; pastry cooks' products | | | |
| | | | | |



| 20 | Preparations of vegetables, fruit, nuts or other parts of plants | | | | |
|---|---|--|--|--|--|
| 21 | Miscellaneous edible preparations | | | | |
| 22 | Beverages, spirits and vinegar | | | | |
| 23 | Residues and waste from the food industries; prepared animal fodder | | | | |
| 24 | Tobacco and manufactured tobacco substitutes | | | | |
| MINERAL PRODU | JCTS | | | | |
| 25 | Salt; sulphur; earths and stone; plastering materials, lime and cement | | | | |
| 26 | Ores, slag and ash | | | | |
| 27 | Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes | | | | |
| PRODUCTS OF T | HE CHEMICAL OR ALLIED INDUSTRIES | | | | |
| 28 | Inorganic chemicals; organic or inorganic compounds of precious metals, of rare- earth metals, of radioactive elements or of isotopes | | | | |
| 29 | Organic chemicals | | | | |
| 30 | Pharmaceutical products | | | | |
| 31 | Fertilisers | | | | |
| 32 | Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks | | | | |
| 33 | Essential oils and resinoids; perfumery, cosmetic or toilet preparations | | | | |
| 34 | Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, "dental waxes" and dental preparations with a basis of plaster | | | | |
| 35 | Albuminoidal substances; modified starches; glues; enzymes | | | | |
| 36 | Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations | | | | |
| 37 | Photographic or cinematographic goods | | | | |
| 38 | Miscellaneous chemical products | | | | |
| PLASTICS AND A | ARTICLES THEREOF; RUBBER AND ARTICLES THEREOF | | | | |
| 39 | Plastics and articles thereof | | | | |
| 40 | Rubber and articles thereof | | | | |
| RAW HIDES AND SKINS, LEATHER, FURSKINS AND ARTICLES THEREOF; SADDLERY AND HARNESS; TRAVEL GOODS, HANDBAGS AND SIMILAR CONTAINERS; ARTICLES OF ANIMAL GUT (OTHER THAN SILK-WORM GUT) | | | | | |
| 41 | Raw hides and skins (other than furskins) and leather | | | | |
| 42 | Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut) | | | | |



| 43 | Furskins and artificial fur; manufactures thereof | | | |
|--|---|--|--|--|
| WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL; CORK AND ARTICLES OF CORK; MANUFACTURES OF STRAW, OF ESPARTO OR OF OTHER PLAITING MATERIALS; BASKETWARE AND WICKERWORK | | | | |
| 44 | Wood and articles of wood; wood charcoal | | | |
| 45 | Cork and articles of cork | | | |
| 46 | Manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork | | | |
| PULP OF WOOD OR OF OTHER FIBROUS CELLULOSIC MATERIAL; WASTE AND SCRAP OF PAPER OR PAPERBOARD; PAPER AND PAPERBOARD AND ARTICLES THEREOF | | | | |
| 47 | Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard | | | |
| 48 | Paper and paperboard; articles of paper pulp, of paper or of paperboard | | | |
| 49 | Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans | | | |
| TEXTILES AND TEXTILE ARTICLES | | | | |
| 50 | Silk | | | |
| 51 | Wool, fine or coarse animal hair, horsehair yarn and woven fabric | | | |
| 52 | Cotton | | | |
| 53 | Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn | | | |
| 54 | Man-made filaments | | | |
| 55 | Man-made staple fibres | | | |
| 56 | Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof | | | |
| 57 | Carpets and other textile floor coverings | | | |
| 58 | Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery | | | |
| 59 | Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use | | | |
| 60 | Knitted or crocheted fabrics | | | |
| 61 | Articles of apparel and clothing accessories, knitted or crocheted | | | |
| 62 | Articles of apparel and clothing accessories, not knitted or crocheted | | | |
| 63 | Other made up textile articles; sets; worn clothing and worn textile articles; rags | | | |
| FOOTWEAR, HEADGEAR, UMBRELLAS, SUN UMBRELLAS, WALKING-STICKS, SEAT- STICKS, WHIPS, RIDING-CROPS AND PARTS THEREOF; PREPARED FEATHERS AND ARTICLES MADE THEREWITH; ARTIFICIAL FLOWERS; ARTICLES OF HUMAN HAIR | | | | |



| 64 | Footwear, gaiters and the like; parts of such articles | | | | |
|---|---|--|--|--|--|
| 65 | Headgear and parts thereof | | | | |
| 66 | Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof | | | | |
| 67 | Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair | | | | |
| ARTICLES OF ST | ONE, PLASTER, CEMENT, ASBESTOS, MICA OR SIMILAR MATERIALS; UCTS; GLASS AND GLASSWARE | | | | |
| 68 | Articles of stone, plaster, cement, asbestos, mica or similar materials | | | | |
| 69 | Ceramic products | | | | |
| 70 | Glass and glassware | | | | |
| NATURAL OR CULTURED PEARLS, PRECIOUS OR SEMI-PRECIOUS STONES, PRECIOUS METALS, METALS CLAD WITH PRECIOUS METAL, AND ARTICLES THEREOF; IMITATION JEWELLERY; COIN | | | | | |
| 71 | Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin | | | | |
| BASE METALS A | ND ARTICLES OF BASE METAL | | | | |
| 72 | Iron and steel | | | | |
| 73 | Articles of iron and steel | | | | |
| 74 | Copper and articles thereof | | | | |
| 75 | Nickel and articles thereof | | | | |
| 76 | Aluminium and articles thereof | | | | |
| 77 | (Reserved for possible future use in the Harmonized System) | | | | |
| 78 | Lead and articles thereof | | | | |
| 79 | Zinc and articles thereof | | | | |
| 80 | Tin and articles thereof | | | | |
| 81 | Other base metals; cermets; articles thereof | | | | |
| 82 | Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal | | | | |
| 83 | Miscellaneous articles of base metals | | | | |
| MACHINERY AND MECHANICAL APPLIANCES; ELECTRICAL EQUIPMENT; PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES | | | | | |
| 84 | Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof | | | | |



| 85 | Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles | | | |
|---|---|--|--|--|
| VEHICLES, AIRC | RAFT, VESSELS AND ASSOCIATED TRANSPORT EQUIPMENT | | | |
| 86 | Railway or tramway locomotives, rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signalling equipment of all kinds | | | |
| 87 | Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof | | | |
| 88 | Aircraft, spacecraft, and parts thereof | | | |
| 89 | Ships, boats and floating structures | | | |
| OPTICAL, PHOTOGRAPHIC, CINEMATOGRAPHIC, MEASURING, CHECKING, PRECISION, MEDICAL OR SURGICAL INSTRUMENTS AND APPARATUS; CLOCKS AND WATCHES; MUSICAL INSTRUMENTS; PARTS AND ACCESSORIES THEREOF | | | | |
| 90 | Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof | | | |
| 91 | Clocks and watches and parts thereof | | | |
| 92 | Musical instruments; parts and accessories of such articles | | | |
| ARMS AND AMM | UNITION; PARTS AND ACCESSORIES THEREOF | | | |
| 93 | Arms and ammunition; parts and accessories thereof | | | |
| MISCELLANEOU | S MANUFACTURED ARTICLES | | | |
| 94 | Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated name-plates and the like; prefabricated buildings | | | |
| 95 | Toys, games and sports requisites; parts and accessories thereof | | | |
| 96 | Miscellaneous manufactured articles | | | |
| WORKS OF ART | , COLLECTORS' PIECES AND ANTIQUES | | | |
| 97 | Works of art, collectors' pieces and antiques | | | |
| OTHER | | | | |
| 98 | Special transactions and commodities not classified according to kind | | | |
| 99 | Commodities and transactions not included in merchandise trade | | | |



Attachment – List of Airports

| List of Airports | | | | |
|--------------------|---------------------|---------------------|----------------------|--------------------|
| ADELAIDE | CHARLEVILLE | GRAFTON | MERIMBULA | PORT HEDLAND |
| ALBANY | CHRISTMAS ISLAND | GRIFFITH | MILDURA | PORT LINCOLN |
| ALBURY | CLONCURRY | GROOTE EYLANDT | MOORABBIN | PORT MACQUARIE |
| ALICE SPRINGS | COCOS ISLAND | HAMILTON ISLAND | MORANBAH | PROSERPINE |
| ARMIDALE | COFFS HARBOUR | HERVEY BAY | MOREE | ROCKHAMPTON |
| AURUKUN | COOBER PEDY | HOBART | MORNINGTON ISLAND | ROMA |
| AYERS ROCK | COOKTOWN | KALGOORLIE | MORUYA | SUNSHINE COAST |
| BALLINA | COOMA | KARRATHA | MOUNT GAMBIER | SYDNEY |
| BAMAGA | DARWIN | KING ISLAND | MOUNT ISA | TAMWORTH |
| BATHURST | DEVONPORT | KINGSCOTE | MOUNT MAGNET | TAREE |
| BATHURST ISLAND | DUBBO | KOWANYAMA | NARRANDERA | THURSDAY ISLAND |
| BILOELA | ELCHO ISLAND | KUNUNURRA | NEWMAN | TOWNSVILLE |
| BRISBANE | EMERALD | LAUNCESTON | NORFOLK ISLAND | WAGGA WAGGA |
| BROKEN HILL | ESPERANCE | LEARMONTH | NORMANTON | WEIPA |
| BROOME | ESSENDON | LISMORE | OLYMPIC DAM | WELLCAMP |
| BURNIE | FLINDERS ISLAND | LONGREACH | ORANGE | WHYALLA |
| CAIRNS | GERALDTON | LORD HOWE ISLAND | PALM ISLAND | WILLIAMTOWN |
| CANBERRA | GLADSTONE | MACKAY | PARABURDOO | |
| CARNARVON | GOLD COAST | MANINGRIDA | PARKES | |
| CEDUNA | GOVE | MELBOURNE | PERTH | |