



WA SHIPPING AND SUPPLY CHAIN TASK FORCE

REPORT TO MINISTER

September 2023

Taskforce Chairs

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The Chairs would like to acknowledge and thank all stakeholders from the maritime and logistics industry, government agencies and NGOs who participated in consultations or made submissions to the Taskforce.

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1 EXECUTIVE SUMMARY

In January 2022 a major flooding event in South Australia cut rail freight services between eastern states and Western Australia. The loss of the railway line for several weeks resulted in shortages of groceries, household goods and industrial inputs in Perth and WA, which were not resolved for several months.

In response to the event, the Western Australian government in March 2022 established a Shipping and Supply Chain Taskforce to review the potential for an enhanced role for shipping in Western Australian transport and to consider a range of means to strengthen supply chains.

In parallel, the Commonwealth has also established a Strategic Fleet Taskforce to examine the development of a national fleet available to meet critical needs in times of emergency.

Climate change and extreme weather events are increasingly impacting all aspects of Australian life, and challenging all levels of government. The increasingly frequency of emergencies is placing a stronger national emphasis on the need for investment in supply chain resilience. Investment may take the form of upgrades to essential infrastructure, provision of redundancy and/or flexible systems for responding to unpredicted events in various parts of the country.

As an isolated state, Western Australia now needs to be better positioned in national debates, since we can be seriously affected by events compromising our vital connections with the eastern states.

The Western Australian economy relies heavily on commercial shipping, with over one billion tonnes of trade annually through its major ports. Shipping takes the form of container vessels, dry bulk carriers, roll-on roll-off (RoRo) vessels, tankers and break-bulk carriers among other types.

Coastal (domestic) shipping has declined significantly in recent decades, now accounting for only 15% of total estimated long distance freight in Australia. There are now less than 10 national-flagged vessels operating in Australia.

Coastal shipping policy is a function of the Commonwealth government. Current policy favours the use of international shipping lines for most import, export and domestic sea-borne freight.

One of the consequences of this is that there is a very limited range of career options for Australian maritime workers, and therefore limited maritime training capability. This contributes to the overall weakness of the maritime industry in this state.

The provision of training positions on vessels serving Australia regularly under a nationally co-ordinated scheme should be readily achievable.

Opportunities to improve the competitiveness of Australian-flagged shipping should be explored, including:

- Taxation reform, including exemptions from taxes on dividends paid to company shareholders
- Reforms to the conditions under the Australian International Shipping Register

Western Australian remote areas, particularly in the North-west, suffer from extended and fragile land-based supply chains, easily compromised by weather events and transport labour shortages etc. Catastrophic flooding throughout in the Kimberley in January 2023 has compromised normal freight operations for an expected 18 month period, costing up to \$40 million in additional freight kilometres.

Targeted shipping services for the North-West region should be able to provide some advantages in tandem with strategic investment in landside logistics assets, such as common user warehousing and cold stores at one or two key centres.

The growing status of 'direct shipping' into the Pilbara ports connecting with Asian hubs provides clear opportunities for improvements to the reliability and cost of supplies of various types of products into remote areas, including indigenous communities.

Landside supply chain resilience, particularly related to the east-west railway line, can be addressed to some extent by infrastructure improvements, such as protection of at-risk rail sections from flooding events. However, the unpredictability of location and impacts of such events affects the cost-effectiveness of this approach.

Ultimately, it could be more valuable for the state to stimulate investment in extra levels of inventory of essential goods within the state, to cushion the effects of any type of long term supply chain outage.

This is also true of internal WA supply chain seasonal risks, including the frequent loss of supply chain capacity during wet seasons in the north west of the state. Ensuring that sufficient stocks of essential goods are on hand in regional centres, for easy distribution within the region, is more effective than attempting to protect long road lengths from cyclonic inundation or bushfire impact through construction efforts alone.

Recommendations:

It is recommended that the Western Australian government:

Work with the Commonwealth Government and other states to agree on changes to the current coastal trading regime that would stimulate Australian flagged fleet development through leveling the field with international carriers. Changes to Federal legislation and policy to be supported would include:

1. reform to taxation laws relating to income tax payable by Australian seafarers and to the taxation of dividends earned by Australian ship owners; and
2. revision of rules applying under the Australian International Shipping Register to reduce the commercial restrictions on Australian carriers;
3. revision of rules applying to wholly Australian domestic voyages to incentivise the use of Australian flagged vessels

Support the ambitions of the Commonwealth government to develop a small fleet of strategic flagged vessels to be called on in emergency circumstances. In recognition of its relative isolation, Western Australia would be a good place to commence operation of an identified vessel to fulfil a specific strategic task meeting the national strategic criteria.

The proposal under current consideration to charter a suitable vessel for operation in the Kimberley in the short term can be offered as a pilot scheme to be jointly funded and managed with the Commonwealth, ahead of potential deployment by the Commonwealth elsewhere in Australia as needed.

Seek formal Western Australian representation on any current and future national taskforces or working groups taking forward shipping policy and legislative reform proposals.

Fund the establishment of a shipping policy unit within Dept of Transport to further the state's aims to work with the Commonwealth to strengthen the Australian shipping industry, especially in servicing Western Australian ports.

Develop a business case for a regular small scale east-west RoRO/container service to operate between WA and eastern states. This service would augment land transport services and be available for some targeted emergency relief during local climatic or other disruptions to essential supply chains. A service of this nature would also be suitable for operation as a training vessel for Western Australian seafarers.

Conduct research into the markets for bulk, break-bulk and containerised trade between Singapore and Australia and the potential to capture a share of this through Australian flagged vessel(s) home-based in Western Australian port(s).

Jointly with the Commonwealth, research the potential to use Australian flagged and crewed vessels to service Indian Ocean Territories.

Develop identified opportunities to enter into sponsorship partnerships with carriers serving Australia regularly under which Western Australian trainee maritime workers could rapidly attain sea time necessary for their qualifications. Sponsorship arrangements could be piloted by WA ahead of broader adoption by states with similar aims with Commonwealth support.

Build on existing cadetship schemes such as that offered by Pilbara Ports Authority to improve the take-up, especially aimed at mineral exporters with regular charter arrangements with suitable ship owners.

Support efforts by the Australasian Railways Association to identify sections of the east-west railway corridor in all states which should be upgraded for much improved flood resilience.

Develop stronger direct relationships with national rail track providers such as the Australian Rail Track Corporation (ARTC) in view of this state's dependence on the rail corridor.

Establish a joint government-industry working group to examine the need for investment in new warehousing assets in Perth to be used for maintaining inventory of essential long life grocery items and household goods beyond the commercially feasible levels currently held.

Similarly examine the need for a common user distribution centre in the NW of the state to support supermarket companies otherwise dependent on DCs in Perth and the long distance highway network during annual wet seasons and emergency events. The role of a DC would be to provide price stability and security for the region, and better support the distribution of routine and emergency supplies to indigenous communities throughout remote NW WA.

Establish a stakeholder group to work on proposals for improved access for essential goods to remote NW areas, under the umbrella of the National Agreement on Closing the Gap.

2 INTRODUCTION

Formation of the WA Shipping and Supply Chain Taskforce

In late January 2022 a major flooding event in South Australia arising from a strong La Nina climatic condition took the Trans-Australian railway line out of commission for five weeks. The Eyre Highway was also closed for several days. This event substantially affected the supply of essential groceries and other goods to Perth and the state of Western Australia. Stocks were not fully replenished until mid-year.

This significant event highlighted how dependent WA was on supply from eastern states, and the extent to which a just-in-time inventory philosophy leaves us exposed in disruptive times.

The impact of this event was magnified by the more general disruptions to global and national supply chains prevalent through early 2022, arising from:

- Port congestion and container availability problems due to Covid restrictions
- Russia's invasion of Ukraine

The combined impact of these disparate events was global disruption and inefficiency, which permeated through the many complex supply chains on which we all depend. Many lessons have been learnt throughout the world as to the fragility of supply chains and the ease with which disruptive events can lead to financial hardship and substantial inconvenience for business and individuals.

In a more uncertain world, a new level of supply chain resilience and layers of critical asset redundancy will be seen as necessary to protect against future disruptions.

Western Australia is particularly exposed to shortages of essential goods and increased costs, due to its isolated location and long supply chains, both on land and sea. The state also relies to a large extent on the import of processed goods, especially since much national manufacturing and processing is concentrated in Sydney and Melbourne.

The unprecedented flooding of the Kimberley in January 2023 further highlights increasing landside supply challenges in remote areas of the state.

The WA Shipping and Supply Chain Taskforce was formed in March 2022 in an immediate response to these rapidly emerging issues, and has focused its efforts in investigating three main areas to date:

- Capacity for increased use of coastal shipping for interstate and intrastate trade
- Provision of improved training and career pathways for maritime workers
- Measures to improve landside supply chain resilience and cost-effectiveness

Formation of the Commonwealth Government Strategic Shipping Taskforce

Separately, the Commonwealth Government established, in October 2022, a Strategic Fleet Taskforce to investigate the development of a nationally flagged shipping fleet that would be available to meet critical supply challenges during times of national emergency.

This Taskforce comprises industry leaders, supported by staff of the Dept of Infrastructure, Transport, Regional Development, Communications and the Arts.

Commonwealth Taskforce membership:

- John Mullin (Chair)
- Paddy Crumlin (MUA)
- Angela Gilham (Maritime Industry of Australia Ltd)
- Sarah Ryan (Woodside)
- Major General Jason Walk (Defence)

The terms of reference for the Taskforce make reference to a decision of the Government that a strategic fleet would include 12 Australian flagged and crewed vessels. These vessels would be privately owned and commercially operated, but available to be requisitioned to be deployed during national emergencies.

The Commonwealth Taskforce is due to report by 30 June 2023. It is tasked with determining the needs to be addressed, and the best means of establishing and managing a strategic fleet.

Shared Commonwealth/state policy aims

Inevitably there is considerable overlap between the scope of the Commonwealth review and the work of the WA Taskforce. Other states, including Queensland and Victoria, have also undertaken some work in this space (see Section 4.3).

Generally, the Commonwealth administers the legislation controlling the activities of the shipping sector including domestic coastal shipping. This includes specific powers under the Coastal Trading Act 2012, and more general powers including a taxation regime, which have significant impacts on the domestic shipping industry.

The state of WA has a remnant coastal trading regime under which permits must be sought for intrastate shipping movements (wholly within the state of WA). Beyond this, there is little or no policy oversight of commercial shipping outside of ports administration.

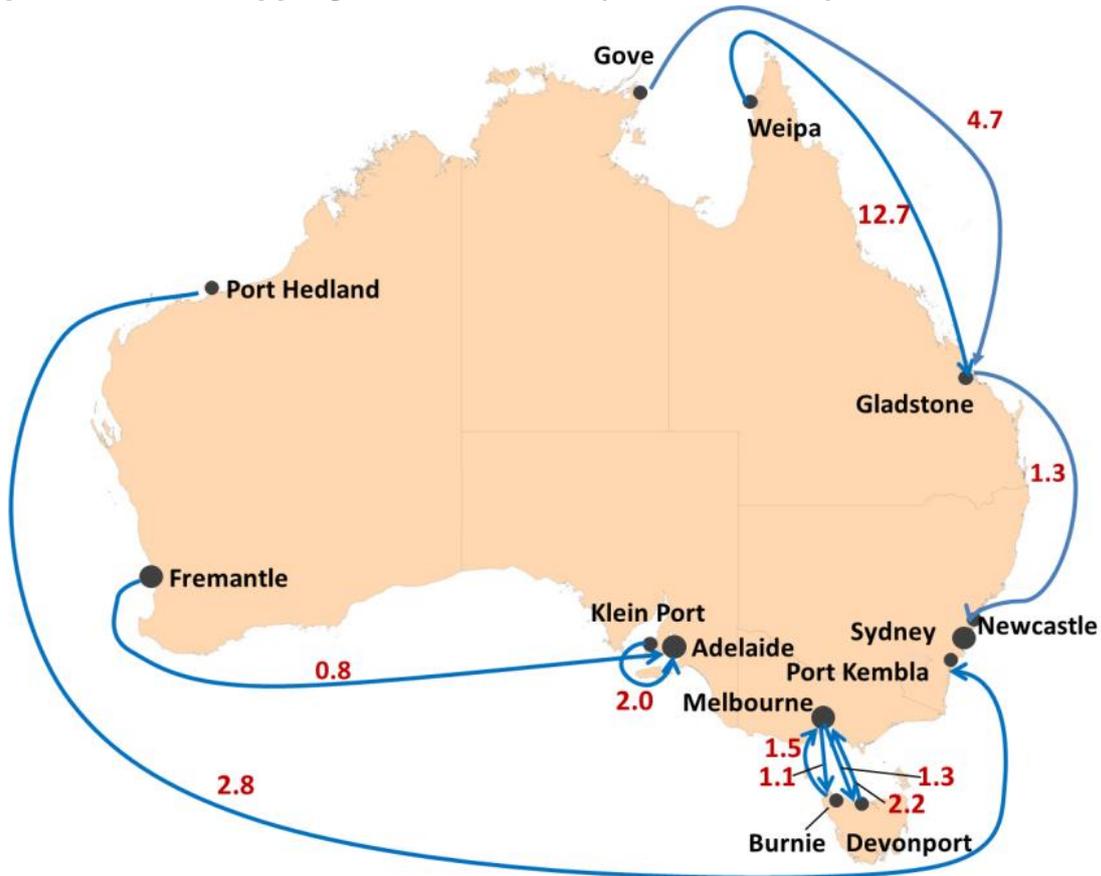
From the perspective of the WA Taskforce, any shipping initiatives pursued will benefit from Commonwealth reforms which would make it more commercially feasible for Australian flagged vessels to compete in the open markets.

Critical supply chains

Western Australia is highly dependent on both its international trade (largely exports) and domestic Australian trade (mostly incoming), particularly with eastern states. Relatively little domestic freight to and from WA is carried by ship. Exceptions are some heavy bulk products such as alumina and mineral sands. Most general domestic freight is carried by rail, with a smaller fraction by road transport.

This map illustrates the small scale role that shipping plays in the national domestic freight task.

Top ten coastal shipping routes, 2018-19 (million tonnes)



Source – BITRE Australian Sea Freight 2018-19

Railway corridor and usage

The Trans Australian railway links Perth and Kalgoorlie with the eastern states and Northern Territory. Freight services on this corridor deliver over 5 million tonnes of freight in both directions each year, with about 75% of this volume coming into Perth from eastern states, and 25% in the reverse direction.

About 25 return trips per week by trains up to 2km long carry an incredible 80% of grocery products sold in WA's supermarkets. Most of Australia's food processing capacity is based in eastern states. National distribution systems operated by supermarket chains are still generally centralized in Sydney and Melbourne, despite some local distribution capability for imported grocery products in Perth. Fresh produce consumed in WA is more likely to be grown locally than carried from the east, with some exceptions, such as bananas.

There is more significant local distribution logistics for furniture, construction materials and hardware in Perth, since a greater proportion of these products arrives in WA by sea from international sources.

Significant volumes of steel, industrial products and mining inputs are also brought to Perth by rail for distribution throughout the state. Basic steel product is distributed by rail into Perth and WA from the major steel mills in NSW and Victoria, with imported steel product arriving by sea through Fremantle.

Returning trains carry smaller volumes of construction materials, minerals and primary produce to the eastern markets.

Road transport also carries substantial volumes of product, where rail is less competitive or impractical. The huge distances involved (eg Perth-Sydney 3,900km), however, mean that rail is the mode of choice and road transport capacity is limited, particularly by the systemic shortage of a pool of long distance drivers.

Modal competition

Despite the dominance of rail freight for east-west supply chains, there is some competitive pressure between the freight transport modes of train, truck and ship. Much of the freight task is managed on behalf of suppliers and buyers by the freight forwarding industry. Freight forwarders contract with freight providers of all types in order to optimize factors such as freight price, timeliness and reliability of delivery.

Rail freight is long established as first choice mode on the east-west corridor, offers competition between two national carriers with well run terminal networks, and supported by good quality high speed track. Service growth on the corridor, however, is limited by congestion on some single line sections, including Kalgoorlie-Perth.

Road transport is used for transport of some time-critical loads, lighter loads, products not suited to vibration and those originating in regional areas distant from rail terminals. Generally, however, the long interstate distances favour rail transport. Shipping is an option for less time-critical deliveries, but is susceptible to fluctuating costs, as well as documentation burdens associated with the use of international shipping under license.

During 2022, international supply chain congestion and disruption has had a major effect on port operational efficiency, which has limited the utility of coastal shipping for east-west supply. In the latter half of the year, however, global sea freight rates have begun to fall substantially, which may increase the likelihood of more opportunistic use of shipping.

3 COMMERCIAL SHIPPING SERVING WESTERN AUSTRALIA

3.1 Overview - Shipping in Australia

Shipping is critical to Australia's economic and social wellbeing. Shipping moves 99 per cent by volume and around 80 per cent of the value of our goods trade. Australia is the world's 5th largest user of shipping. By volume this trade is predominantly export of commodities such as iron ore, coal, and liquefied natural gas (LNG). While Australia is a major player in the movement of bulk commodities, Australia's container trade is small by global standards - around 1 per cent of global total container movements. Australia relies on foreign vessels to carry this trade - in 2021, there were 26,400 vessel arrivals made by 6,170 unique foreign flagged vessels.

In 2018-19, 6000 cargo ships made approximately 34,000 calls to Australia, with ports handling 1.7 billion tonnes of freight, including 5.1 million containers. This cargo was worth close to \$573 billion.

Western Australia's shipping

Of the 6,031 cargo ships called at Australian ports in 2018-19, about 77% or 4,648 visited WA ports with a majority of these cargo ships coming from overseas. Around 70% of the ships that visited WA ports were bulk carriers and 6% were container carriers.

Western Australia (WA) contributes over half of Australia's international trade (by volume), with 97% of all major exports derived from the WA resources sector in 2019-20.

Coastal trading

Coastal shipping is a declining component in Australia's domestic freight task. In 1970, shipping carried around 50% of this task. Today coastal shipping conducted by foreign and Australian vessels carries only about 15% of the freight task, with 54.0 million tonnes carried in 2018-19. This is predominantly dry bulk commodities such as magnetite, limestone, and cement. While Australia's overall freight task is projected to grow by 35% out to 2040, coastal shipping is projected to carry similar volumes in 2040 as it does today.

There are currently about 11 Australian flagged vessels (over 2,000 deadweight tonnes) holding a general licence under the Coastal Trading (Revitalising Australian Shipping) Act 2012. Four of these are LPG tankers carrying gas from North West Shelf project to Japan. (This will cease with the end of the North West Shelf Project

during 2024.) Others carry domestic cargo including on the Bass Strait trade between the mainland and Tasmania.

Of the 6,170 foreign-flagged vessels that arrived in 2021, 513 vessels carried Australian cargo under a Temporary Licence. Of the 54 million tonnes carried by coastal shipping in 2018-19 (both licensed and non-licensed - intrastate voyages do not require a licence), 31.6 million tonnes were carried by foreign-flagged vessels operating under a Temporary Licence, compared with 9.2 million tonnes carried by Australian vessels operating under a General Licence.

The total volume of cargo moving between Australian ports has not changed significantly in over 40 years, despite increases in the domestic freight task. As a result, coastal trading's share of the domestic freight task has fallen significantly, as most demand growth has been picked up by road and rail.

Coastal trading via shipping constituted an estimated 14% of Australia's total domestic freight task in 2020-21, in comparison with road's 28% and rail's 56%. Coastal trading mostly transports bulk cargo, with intrastate movements in Queensland (mostly alumina ores from Weipa to Gladstone) making up over 25 per cent of tonnage in 2018-19.

WA's Inter-state coastal shipping

National Coastal Shipping statistics for the month of January 2022 provide an indication of WA's place in Coastal shipping. Nationally, 362 shipments were loaded. Of these, 76 (21%) were loaded at a port in WA and 53 (15%) were discharged at a WA port. Nearly all of these were container, RoRo and breakbulk consignments, with only 7 dry bulk materials shipments.

WA's intrastate coastal shipping

In 2021-22 only 29 permits were issued by the Department of Transport for ships to engage in coastal trading between WA ports. The major products moved were anhydrous ammonia, refined petroleum products, and gypsum. WA intra-state coastal trading represents a minor part of coastal voyages that call at a WA port.

3.2 Types and characteristics of shipping services in WA

The nature of commercial shipping in Western Australian ports can be broadly summarized as follows:

- Liner (container) services
- Bulk exports and imports
- Roll-on Roll-off (RoRo) cargoes

- Oil & gas carriers and off shore support
- Break-bulk and other

These groupings and their characteristics are described in this section.

Liner services

- Container services provided by international lines, mostly on a round-Australia schedule, serving multiple capital city ports, usually via Asian hubs
- Consolidated groupings of shipping lines, foreign flagged and foreign crewed
- Serving the Port of Fremantle with an average 7 calls per week
- Ship size trending larger, average exchange 2,500 TEU

Container Shipping - Australia

Australia is served by 21 container shipping lines operating around 50 regularly scheduled liner services. Around 60% of these services serve the five principal capital city ports and provide an estimated 90% of container shipping capacity in the Australian market using vessels ranging in capacity from 2,500 to 9,500 TEU. The remainder of services are mostly connected with trade in the far north of Australia, Papua New Guinea or the Pacific Islands using vessels under 1,500 TEU capacity. The number of container ship calls has declined over the past ten years, but volume per vessel visit is increasing.

Shipping lines serving Australia include the top global liner shipping companies. Shipping line consolidation has been occurring for at least the last three decades. In 1986, the 20 largest lines' share of total global shipping capacity was 35%. By 2017 the top 5 lines accounted for 64% of the market. Mergers between global shipping lines and restructuring of networks with larger vessels entering service has led to consolidation of liner services but increased capacity and global connectivity.

Most services to Australia are delivered through 3 shipping consortia involving 2-6 lines. These are:

- ANL(CMA-CGM) and COSCO
- Maersk/ONE/MSC, Hapag Lloyd/TS Line/Evergreen/Yang Ming/Sinotrans
- HMM/Hapag Lloyd/ONE/Evergreen.

The major liner services operating to Australia are focused on two primary trade lanes. The Australia–China trade provides direct access from Australia's east coast to the China and East Asian markets and is dominated by imported consumer goods. The Australia–Singapore market services a much broader range of import and export markets through transshipment connections in Singapore to southern Asia, the USA and Europe.

There are also numerous services connecting with New Zealand.

Most of these services serve the 3 east coast capital ports at Brisbane, Sydney, and Melbourne, while Adelaide and Fremantle are primarily served as part of the Singapore trade lane. There are also currently a regular shuttle operating between Fremantle and Singapore. On the east coast, several carriers also provide services linking Queensland and Northern Territory with Pacific Island nations.

The North Asia route is the largest Australian trade route by both service numbers and overall capacity, accounting for approximately 45% of overall service capacity. This is followed by the southeast Asian route at approximately 41% of services.

Together, north and southeast Asian routes account for 85% of all services to Australia by both service numbers and capacity.

The Australian container sea freight trade is a vital component of total trade upon which the economy is highly dependent. In 2020/21, national container volumes passing through the five capital city container ports amounted to about 8.7 million TEU (BITRE Waterline 68).

Of this total, about 800,000 TEU (9%) passed through Fremantle, on vessels making an average 7 calls per week.

Container trade volume

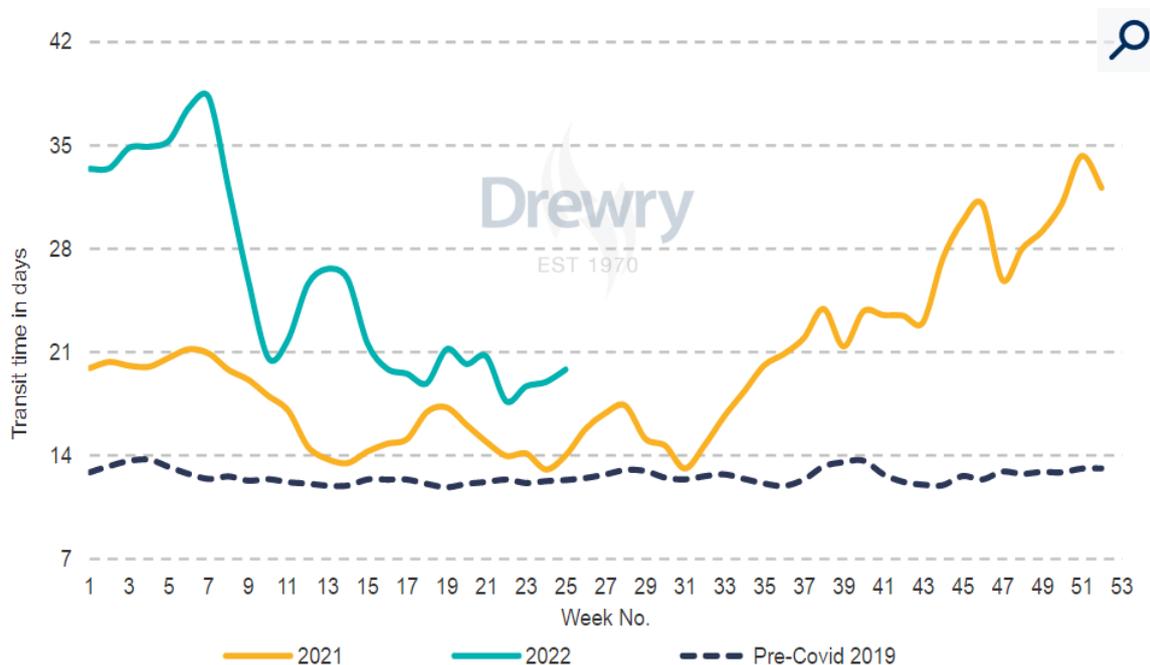
2020/21 (TEU)	Fremantle	Australia
Imports – full	389,000	4,131,000
Imports – empty	14,000	253,000
Exports – full	223,000	2,120,000
Exports – empty	177,000	2,184,000
Total	804,000	8,693,000

Nearly all of this trade is carried on foreign flagged vessels operated by international shipping lines on ‘north-south’ schedules. These schedules are typically built around Asian transshipment hubs, notably Singapore. Australian trade with Europe and North America for example, is carried on large vessels operating on east-west northern hemisphere routes, and transferred in Singapore (for example) to smaller vessels serving the north-south trade.

As a minor player in the global container trade league, Australia suffers from lack of competitive power in this market. The commercial fortunes of Australian importers and exporters are subject to international trends governing sea freight costs, service levels and operational practices.

Since 2020, disruption of international supply chains, due mostly to Covid-19, had highly adverse impacts on the cost of freight and the timeliness of deliveries. The chart below shows how transit time on major east-west routes peaked earlier this year at around 38 days, compared to pre-Covid averages of around 13 days. This measure has now fallen to below 20 days.

Trans-pacific east-bound – Asia to North America (Drewry's Container Capacity Insight – Oct 2022)



Similar transit time increases occurred on north-south routes through the period. As a consequence of substantial delays, shippers (importers and exporters) incurred massive cost increases through demurrage.

While these costs fall sharply later in 2022, Australia remains exposed to price and service volatility due to several factors including:

- Consolidation of global shipping lines into three major alliances, greatly reducing the competitive power of Australian shippers
- Asymmetrical power dynamics between shipping lines and shippers over container de-hiring and detention costs
- Unregulated commercial charging practices by stevedoring terminals in all Australian ports
- Industrial relations challenges at all Australian container ports

These issues are well outlined in the joint submission of the Freight & Trade Alliance (FTA) and Australian Peak Shippers Association (APSA) to the Productivity Commission inquiry into Australia's Maritime Logistics System (2022).

Concerns of this nature are shared by shippers across the world, and fall outside the scope of the work of this Taskforce. However, it is important that container sea freight dynamics are understood so that they can inform analysis of any initiatives aimed at improving container freight supply chain resilience within Australia.

Bulk materials

- Principally exports, with some vital imports
- Ships sourced in open international market via varied chartering, contractual and ownership arrangements
- Few fully domestic tasks (alumina, mineral sands, fertilizer, fuel etc)
- Resource sector and grain industry as customer base
- About 35 calls per day across all major WA ports

Australia

A total of 26,400 of foreign ships arrived at Australian ports in 2021. Of these, 56% or 14,814 were bulk carriers. Port Hedland is the busiest port for foreign-flagged ship arrival with 12.3% of the total number of ships arrivals, predominantly for the export of iron ore. Most of the vessel arrivals in Newcastle and Gladstone were for the export of coal. In Brisbane and Melbourne, most arrivals were engaged in the container trade.

WA bulk trades

In 2021-22, over 900 million tonnes of bulk materials passed through WA's port, carried by over 10,000 vessels. WA ports (Port Hedland, Dampier, Port Walcott, Esperance and Geraldton) exported 865 million tonnes of iron ore valued at \$132 billion.

The Ports of Dampier and Port Hedland are among the world's largest bulk export ports, responsible for approximately 77% of Australia's, and 42% of the world's, iron ore trade. A large range of other dry bulk products including alumina, mineral concentrates, salt, woodchips and grain are exported from the major regional ports and Fremantle Port's Kwinana berths.

Kwinana is also the main import location for essential dry and liquid bulk products supporting Western Australian manufacturing and processing.

Regional ports also receive inbound cargoes of fuel and fertilisers to service users in their regions.

Vessels servicing most of these products are by and large ‘tramp’ trade vessels. These are ships which do not follow regular schedules, but are hired or chartered on the open market for either a single one-way voyage or a series of voyages. Some of the larger Western Australian exporters operate a mix of chartering arrangements, including longer contracts. A small number have some vessel ownership. Crewing of these vessels is managed internationally and is generally low paid by Australian standards.

Roll-on Roll-off (RoRo)

- International lines carrying imported cars, trucks and heavy equipment from Asia and Europe
- Average four calls/week
- Mostly round-Australia schedules with some direct WA services from Asian hubs
- In WA, primarily servicing Fremantle, with growing future use of regional ports

Several shipping lines and groupings provide RoRo services to car manufacturers and other industries importing cars, vehicles and equipment to Western Australia.

RoRo vessels may be either solely car carriers or increasingly, cater for all categories, including High and Heavy (HiHe).

The Port of Fremantle receives visits from car carriers from Asian hubs (including Japan and Thailand), while larger vessels with mixed loads typically carry the European car brands.

Shipping schedules are relatively fixed, with a high degree of consistency of visits from vessels run by these shipping lines.

Australia imports about 800,000 new vehicles per year.

Fremantle imports about 100,000 new and used vehicles per year, plus 250,000 tonnes of heavier vehicles and equipment, receiving about 200 RoRo vessel visits per year.

There are few, if any, current scheduled visits of RoRo vessels to other WA ports.

Oil & gas industry

- LPG bulk carriers from off-shore installations to Japan via Dampier

- A fleet servicing and supporting offshore installations
- Some vessels Australian flagged and crewed
- Primarily based in Broome and Dampier (and Darwin)
- International tankers provide fuel to Fremantle/Kwinana and regional ports

Western Australia is a major gas exporter, as well as being an importer of refined petroleum products, now that the state's refining capacity has been closed down. Imports are sourced largely from Singapore, Japan and South Korea.

Australia is the largest global LNG exporter, accounting for 22% of global LNG exports in 2020. Australia's biggest LNG export markets included Japan, China, and South Korea in 2018.

Western Australia currently has five operating LNG export projects. The North West Shelf, Pluto, Gorgon and Wheatstone projects all source gas from the Carnarvon Basin and have onshore LNG trains in the Pilbara region. The Prelude project is a floating LNG vessel located in the Browse Basin, offshore.

As most of the oil and gas rigs in Western Australia are offshore, the rigs must be provisioned by sea. These supply vessels are not large, and perform specialist functions in providing equipment, provisions and services from various supply bases in the Pilbara, Kimberley and Darwin.

Break-bulk and other

- Various diverse trades
- Some business shared with RoRo and container vessels
- Foreign owned and crewed
- Typically smaller vessels

Break-bulk trades are general non-containerised freight tasks, usually small in scale but often time-consuming at the berth. Loading and unloading is usually done via cranes (either ships gear or onshore). In WA, these trades consist largely of scrap metal exports, construction steel, bagged bulk products, project cargo and miscellaneous goods.

Break-bulk trades are accommodated at every major WA port. Fremantle, for example accommodates 1-2 visits per week. Ships are hired or chartered on the open market, and are all foreign flagged and crewed.

4 NATIONAL SHIPPING POLICY SETTINGS

4.1 Overview

Shipping lines serving Australian importers and exporters provide services under free market conditions. Our massive national dependence on international sea freight trade has led to shipping policies which generally seek to exploit the competitive global market for these services.

Current national policy settings favour open competition between shipping lines, subject to national and international laws and conventions protecting the rights of seafarers and maritime workers.

Current administration of the sea freight sector provides clear advantages to foreign flagged and crewed vessels over Australian shipping.

Australian coastal shipping regulation

Coastal trading (also known as coastal shipping) is the movement of cargo or passengers in connection with a commercial activity from a port in one Australian state or territory to another, where some or all of the cargo is unloaded.

Coastal trading is regulated under the Commonwealth's *Coastal Trading (Revitalising Australian Shipping) Act 2012* (Coastal Trading Act), which establishes a licensing framework which requires that all interstate voyages must be authorised by a licence.

Intrastate voyages are not required to be authorised through the licensing framework, but applicants can apply for a 'Section 12 Declaration' if they wish to be subject to the requirements of the Coastal Trading Act.

Coastal trading licensing framework

The Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts (the Department) issues three types of coastal trading licences:

- A General Licence, which is granted to an organisation to authorise a specified vessel (registered on the Australian General Shipping Register) to engage in coastal trading for five years.

- A General Licence is subject to several conditions, including that they must be registered on the Australian General Shipping Register; must employ seafarers that are Australian citizens or hold a visa that allows them to perform work on the vessel; display a copy of the licence; comply with reporting requirements; and any conditions prescribed by the regulations.
- A Temporary Licence, which is granted to an organisation and authorises the organisation to use foreign-flagged vessels to engage in coastal trading. These licenses are valid for a period of 12 months and are limited to the voyages authorised by the licence. Voyages can be amended or added to the licence through ‘new matters’, ‘authorised matters’, or energy security situation variations.
 - Temporary Licence holders are required to submit a report to Department within detailing the actual details of the completed voyage. The Department must then publish all Temporary Licence voyage reports on its website.
 - Foreign crew on foreign-flagged vessels operating under a Temporary Licence must be paid additional Schedule A wages on top of the internationally-mandated minimums from the third voyage onwards in any 12-month period. This is a requirement of the *Fair Work Act 2009*, not the Coastal Trading Act.
- An Emergency Licence grants access to engage in coastal trading in specified emergency situations for up to 30 days, but none has yet been granted.

4.2 Policy settings

Protecting a national shipping industry

Some nations have protectionist legislative ‘cabotage’ systems in place which aim to support their own shipbuilding and operational shipping industry. These work by limiting the circumstances under which foreign vessels may provide domestic shipping services between ports of that nation. The best known examples are on foot in the US and Canada, large countries with substantial sea-borne long distance trade volumes.

In each case, there are pros and cons of protectionist policies. They tend to support local shipbuilding and employment and provide some hypothetical security in uncertain times. They can, however, result in increased costs for affected industry and can lead to the unanticipated importation of foreign goods made more competitive than domestic supplies.

The establishment of Australian International Shipping Register (AISR) was an attempt to support Australian shipping through less direct regulatory means than a

cabotage system. It provides an ability for Australian ships to compete with international vessels through income tax exemptions and mixed crewing rules etc.

It is commonly accepted that this initiative has been unsuccessful in that no vessels are currently registered in the AISR.

Taxation reform

The Shipping Reform (tax Incentives) Act 2012 was introduced as part of a suite of legislation reforming Australian regulation of shipping. The aim was to provide access for Australian companies to tax incentives in order to stimulate local investment in shipping and career pathways for Australian maritime workers.

Tax incentives are offered to vessels registered under the Australian International Shipping Register. Vessels on this register are required to have two Australian officers on board during any voyage.

At the time (2012) there were only 22 Australian flagged vessels, amid competition from international carriers which generally benefitted from very supportive taxation regimes.

Most OECD countries have used tax incentives to increase the size of their shipping registries, thus providing some national security in relation to strategic access to shipping capacity. Australia stands out among heavy sea freight trading nations in not having provided a regulatory regime supporting this end.

The incentives that were introduced through this legislative package have not been effective in attracting new investment or in maintaining the Australian registry. There are now only 11 vessels on the AISR and this is expected to fall to 9 by 2024.

Maritime Industry Australia Ltd (MIAL) recommended, at that time, some specific initiatives that were considered but not taken up in this Act:

- exemption from dividend withholding tax for non-resident shareholders of Australian shipping entities
- exemption from income tax on dividends paid to Australian resident shareholders

The Maritime Union of Australia (MUA) and the International Transport Federation (ITF) jointly support a global tax reform aimed at a minimum wage for maritime workers, which would increase the competitiveness of Australian-crewed vessels.

4.3 Coastal shipping Initiatives underway in Australia and New Zealand

Queensland

The Queensland government has allocated \$21m towards stimulating a coastal service, following acceptance of a report from a Maritime Jobs Taskforce in 2020. The focus of the project is to lay a platform for a coastal shipping service to be operated between Brisbane and Townsville, with associated training initiatives. Support is likely to be in the form of grants to operators of existing services in the region, port infrastructure enhancements and training support mechanisms.

This includes growing skills through maritime cadetships and training, with funding committed to support Queenslanders to enter the maritime industry or upskill.

The Coastal Shipping Grant Program intends to deliver:

- reinvigoration of sustainable coastal shipping services along Queensland's coastline
- growth of existing services to Queensland's regional and remote locations, with improved access and greater flexibility
- increased flexibility and improved reliable access to marine logistic services
- increased employment for a local maritime workforce
- opportunities for Queensland seafarers to train, upskill and obtain valuable sea time.

New Zealand

New Zealand in 2022 announced a \$30m grants program to support services around its coastline, and a potential connection to Australian ports such as Melbourne.

The main policy drivers for the program are improved supply chain resilience and reduction to the national carbon footprint.

New Zealand already has a coastal shipping industry, with many services also connecting the nation to the Pacific region trade.

NZ has a flagged fleet of a single small container ship, plus 12 bulk carriers of various kinds. There is no particular direct policy aim to expand this fleet.

Program grants are going to four companies, each of which will bring in one additional vessel to the coastal trade. Some funding will also go towards improving port infrastructure to support this type of trade.

Major NZ ports are all controlled by regional authorities, with private sector partners. They operate under the Port Companies Act, requiring commercial focus, but otherwise under their own management.

Most of these can accommodate increased coastal shipping without much investment needed.

5 MARITIME TRAINING

5.1 Overview

The Maritime sector in WA is part of a global shipping network as well as more local industries including fishing and aquaculture, tourism, and patrol and rescue operations.

Training provided in WA and elsewhere in Australia aims to support employers in all sectors of the industry and provide graduates with the requisite skills and experience to carve out career paths here and overseas.

However, the small and decreasing number of Australian flagged vessels provides very few positions for Australian graduates to fill. Competitively paid employment opportunities elsewhere for Australian seafarers are also few and far between.

The three largest maritime training facilities in Australia, at Newcastle, Launceston and Fremantle provide a wide range of training services to Australian and international students. These offerings are well regarded internationally.

These colleges offer a broad range of training competencies to relatively small student cohorts, providing management and funding challenges. In addition, new skills will be required due to the development of new technologies and innovations, increasing complexity of communication systems, autonomous vessels, and technology-based operational systems.

The Maritime industry plays a significant role in the Australian economy and is the primary means for importing and exporting goods to and from the Australian market. Over 30 per cent of Australia's gross domestic product (GDP) is reliant on international shipping, and it is estimated at least 10 per cent of the world's trade passes through Australian ports.

Australian Maritime Safety Authority (AMSA) is the Australian statutory authority responsible for the regulation and safety oversight of Australia's shipping fleet and management of Australia's international maritime obligations. AMSA's delivery of the national system, ensures that standards, rules, and subordinate legislation (such as regulations and Marine Orders) are applied consistently for vessels and seafarers across Australia.

AMSA is also the accreditation authority for maritime training providers.

5.2 Training challenges

(This section includes commentary from South Metropolitan TAFE, Fremantle)

To ensure the ongoing success of the industry to the Australian economy, and the long-term economic viability and sustainability of the Maritime industry, the workforce will need to be able to adjust to the new and emerging technological skill demands of the industry.

The innovations include a new Satellite-Based Augmentation System (SBAS), remotely piloted aircraft systems (RPAS), Autonomous Underwater Vehicles (AUV), autonomous container ships and vessels, Dynamic Positioning (DP) systems, e-navigation and electrical engineering.

- The Maritime engineering workforce needs to be up-skilled in the safe operation, maintenance, repair and replacement of electrical and refrigeration equipment. Industry also requires additional safety requirements to be addressed by seafarers involved in mooring and dredging operations.
- The Australian Maritime Safety Authority (AMSA) has recently approved the operation of an unmanned surveillance vessel which will still operate in conjunction with human supervision. Australia's regulatory framework may be applied to autonomous and unmanned vessels, and AMSA is considering a qualifications framework for the operators of these vessels. The workforce will need to be aware of the regulatory framework to ensure compliance and safety and have the skills and knowledge to operate them.
- There are a growing number of positions available for operators and maintainers of Australian vessels with Dynamic Positioning (DP) systems. DP systems use a vessel's sensor data to calculate the steering angle and thrust power to offset the environmental factors and keep the vessel on the desired route and position.
- Workforce skills need to be progressively developed to minimise the risk of cyber-attacks and be capable of reinstating digital systems as quickly as possible should a cybersecurity incident occur, including compliance with regulatory requirements.

Technology

Technologies will continue to evolve and be further integrated into Maritime operations, providing opportunities for new and emerging specialisations within the industry. The future of the industry will be characterised by integration of software systems, with increasing potential for remote operations, and automation of vessels. This may require a change in the skill needs of the workforce from “on-board” operational based skills, to remote operations, navigation, and interpreting large volumes of data from remote communication systems. New technological innovations shaping the maritime sector include robotics and automation, interconnected sensors and big data, remote propulsion and powering, autonomous and ‘smart’ vessels, deep ocean mining, and marine biotechnologies.

The Australian Maritime industry is poised to be one of the first in the world to test a new Satellite-Based Augmentation System (SBAS). This system will greatly improve the accuracy and integrity of the location of ships in the Australasian region and provide location accuracy to tens of centimetres.

Automation

Until recently, the use of autonomous vessels has been to operate underwater for research and exploratory purposes. The first completely autonomous (no human navigation/monitoring) expedition has recently been completed in the Bering Sea.

New and unique skills for adoption of new technology will require ongoing learning and development in future training initiatives. Vessel operations will likely change dramatically over the coming decades, moving toward remote operation centres, and companies will need to invest in capacity building through education and training of the workforce.

The International Maritime Organisation (IMO) is exploring how existing international requirements can be applied to autonomous vessels. Current maritime law does not provide for a vessel without a crew and master. While the onset of autonomous vessels is anticipated to be within the next five (5) years, the regulatory framework surrounding these systems is likely to take longer to implement.

Big Data

Remote operating systems including SBAS, utilise a network of satellites to track the movements of ships while at sea. It also provides information on their performance

while operating, loading, and discharging cargo. The potential of this new technology to influence decision-making and strategy will require specific training to be fully utilised. As automated systems and vessels are introduced, ‘ship intelligence’ will greatly increase demand to diagnose and interface with vessels remotely. Satellite, GPS, and network connections will provide real-time data to control rooms, with big data analytics becoming a required skill need of the industry.

Cyber Security

Maritime vessels are becoming connected to the internet and networks, with systems used to operate engines remotely and in real-time. Separate networks are often used for different operations within vessels; and remote access to these by unauthorised personal pose real risks. These attacks run the risk of causing major economic damage, disrupting logistical operations, displacing stock/inventories, and overriding control of the vessels, as well as disrupting communications with ports and other vessels. These threats will demand an increased comprehension and maintenance of network security on vessels to provide secure communications between ports and other ships at sea. The skills and pressure to future proof the systems will be a concern for the industry in the near-to-medium future.

Operating Environment and Regulation

There is ongoing decline in numbers of ‘blue-water’ Australian flagged ships operating within Australia. New regulatory changes proposed by the Australian Maritime Safety Authority (AMSA) for blue water and near-coastal crew members are being developed to improve the overall safety of workers on these vessels. AMSA regulatory requirements are being embedded into the qualifications and Units of Competency to ensure safety competence on vessels at sea. These regulatory changes will have training implications for certification.

Environmental Pressure

World-wide, there is increasing pressure to reduce the environmental effects of CO₂ emissions, in line with the Paris Climate Agreement 2016. Within the Maritime industry, legislative pressures, increasing operating costs, and the complexity of shipping are driving the demand to pursue new methods to reduce the fuel demands for ocean transportation. Methods including slow steaming and super slow steaming are being employed to significantly reduce the fuel requirements of these journeys. As remote-operated vessels are implemented, there is further room to improve

efficiencies in fuel consumption and reduce CO2 emissions. Training and application of these methods will be a major skill requirement of the industry.

Ageing Workforce

Australia's Maritime workforce is one of the oldest in the country, with 49 per cent of workers 45 years or older. In the short to medium term, the ability to successfully attract, train and retain young workers will be critical in meeting the skills' needs of the industry. Provision of mentoring and leadership training to skilled operators with comprehensive technical knowledge, will enable them to help develop younger workers and assist employers with retention. If maritime industries incorporate cutting edge technologies and innovative practices to appeal to younger workers, skill building around these technologies and practices will be required. An increase in the digital literacy of new and established workers will enhance their career progression and contribute to the Maritime industries substantially.

Competition for Skilled Workers

Along with increasing volumes of cargo and value-added activities, including tourism, increasing expectations are being placed on vessel masters and ship's crew to deliver on deadlines while maintaining efficiencies and compliance. This will further increase the pressure of shipping companies and the workforce. Furthermore, the risk of a widening skill gap between the workforce and the new maritime technological systems and processes being developed are becoming a concern for the industry world-wide. This is putting pressure on the workforce as the complexity of shipping systems increase.

Reviewing and ensuring that competency-based training maintains relevancy in the Maritime industry will be necessary to ensure the workforce is suitably qualified and can meet the demands of new shipping systems.

A strong demand for Electro-Technical Officers within the industry is increasing. To address the industry safety and regulatory requirements, the development of a qualification for electro-technical officers is in progress. As new technologies are adopted by companies, the skill requirements of the workforce will also change.

The provision of specialist skills in robotics, design, engineering, and big data analytics will require appropriate training. To develop these projected skills, companies will need to start providing the right education and training programs to ensure that on-boarding of new technologies and operations are adequately resourced. Some stakeholders report concerns about potential misalignment between skilled migration arrangements and maintaining viable career pathways for

Australian trained seafarers. Improved mechanisms for moving between near-coastal to ocean-going operations via efficient skilling pathways would support enhanced career opportunities for seafarers.

5.3 International / National Workplace Trends

The international Maritime industry operates as a globalised network, shipping almost 80 per cent of trade by volume. The Maritime industry is highly competitive, as organisations compete for market dominance. Locally, these markets also include fishing and aquaculture, tourism, patrol, and rescue operations. Many organisations are seeking productivity gains through improved use of technology and systems. Robotics, big data and biotechnologies are all contributing to new innovations in propulsion and powering, ‘smart vessels’, autonomous systems, ocean mining, and marine biotechnologies. There is global demand for highly qualified personnel who can work and innovate with these technologies.

5.4 Pilbara Training College proposal

Pilbara Ports Authority operates the ports of Port Hedland, Dampier and Ashburton, supporting the shipping of over 800 million tonnes of iron ore and other critical materials each year. Over 16,000 vessel movements take place each year. To facilitate this trade, a large range of specialist port services must be provided on a 24/7 basis.

These services include marine pilots, tug operations, lines boats and many related tasks. The provision of locally based training for these staff is important to ensure the availability of skilled workers for PPA and other critical employers.

The Pilbara ports are over 1,500 km from Perth, where much of WA’s training resources are located. A local training centre would strengthen the resilience of the ports and the broader maritime sector in the wake of economic shocks and global events, by providing a pipeline of job-ready locals.

The development of a fit-for-purpose maritime, resources and logistics training college at Port Hedland supports investment in WA’s future, diversification of WA’s economy and the Government’s transition to net zero emissions by:

- Building a sustainable local workforce to meet long term skill needs for the regional economy;
- Providing training for emerging industries such as the hydrogen and renewables industries, supporting the Government’s focus on the establishment of hydrogen hubs.

A Pilbara Training College would create a circular career trajectory for Australian seafarers, providing a route back into shore-based marine roles once they have gained their seagoing qualifications and experience. This would facilitate the future supply of harbour masters, pilots and vessel traffic control personnel for PPA, other regional and Australian port operations.

Training agencies including South Metro and North Regional TAFEs and the Australian Maritime College in Tasmania would be collaborative partners in the provision of training modules. The facilities would also be progressively made available for use in training for the WA resources sector, such as train driver simulators and for targeted indigenous training programs.

5.5 PPA cadetship framework

Pilbara Ports Authority operates a comprehensive marine cadetship framework under which school leavers in the Pilbara Region are provided with sea experience in collaboration with TAFE training and shipping industry partners.

This framework has been established to be used by maritime employers such as shipping lines, port authorities and importers/exporters with an interest in supporting Australian employment in the industry.

The cadetship framework involves a support platform for young students embarking on maritime training (usually via South Metro TAFE in Fremantle) through the provision of bursaries and preliminary employment on board ships at sea. PPA connects cadets with shipping line employers through a number of crewing agencies and arranges mentoring and other forms of support for the cadets.

Cadets employed through these organisations are paid in accord with the labour laws covering the operation of the vessels. For instance, cadets working on ships carrying bulk exports from Pilbara ports to international markets are paid wages as set by international law. Cadets employed on ships or dredges etc operating in Australian waters are paid in accordance with Australian law.

Following their cadetships, trainees are well set up to pursue a maritime career either with PPA, other local maritime employers, or on ships operating around the world.

PPA publicises its framework to demonstrate the ease with which it can be put in place by motivated organisations and companies. As such it is a useful adjunct to the maritime career development and training pathways available in the Western Australian context.

5.6 Marine pilots

Every port relies on the service of dedicated marine pilots who safely bring large vessels to and from berths, with their exclusive knowledge of channel navigation, wave and tidal action etc.

Marine pilots in WA are employed by both port authorities and private businesses. During the Covid pandemic, our dependence on local based pilots became apparent when cross-border movements of FIFO specialists were severely curtailed.

Western Australian port authorities since then have developed plans to recruit and train local residents to take up these positions and thereby shore up future port capability in the face of future destabilizing events.

Marine pilots have challenging roles in ensuring the safe movement of vessels between berths and outer anchorages. Any vessel incidents compromising the safety of the vessel and the utility of the berths and channels etc can be very costly. Pilots are therefore required to complete very high standards of training and to have substantial prior experience as vessel masters.

Maintaining the supply of local, experienced and trained pilots in WA ports is a key requirement within the WA maritime sector. The very small scale of the Australian flagged and crewed fleet makes it difficult to supply experienced mariners to fill these specialist roles in ports. The heavy training requirements add to this scarcity. In recent times, the ability to train effectively using sophisticated simulators provides the opportunity to reduce the reliance on at-sea experience...

5.7 Suggestions for improved maritime training

In consultation with industry, develop a 'Pre-Sea' training course that can provide introductory skills and be specially designed for those who are interested in a career locally and internationally as a marine engineer on blue water vessels.

A possible work experience component with maritime industries could be explored to further attract and promote careers in the maritime sector.

Developing a Maritime qualification to high school students with inherent focus of the career options and industries in the Maritime sector. The qualification could be endorsed by AMSA and possibly offer a period of 'credit' into a particular MAR qualification.

Review of the current MAR Traineeship offerings and review content and scope to enhance pathways and increase marketing opportunities to the industry and potential employers.

Providing career paths for WA workers

Ideally, a locally flagged fleet would provide a natural training ground for Australian workers seeking to enter the maritime workforce. Shipping based in Australian waters on regular coastal and international schedules would be the backbone of the industry.

However, in the real world, no such platform exists. Shipping servicing Australian ports is provided by international lines, often as an adjunct to more significant northern hemisphere operations. Shipping line operations and practices are not therefore greatly influenced by Australian government training and workforce policy.

Despite this, there are opportunities to be developed through which improved career pathways can be offered. Some internationally owned shipping lines are sufficiently invested in their Australian operations as to offer some level of support for programs aimed at increasing local labour participation.

Similarly, some categories of importers and exporters have some untapped interest in this space, as major economic players in certain WA regions.

The most obvious initiatives for development are training schemes under which local trainees gain sea time essential for their experience and qualifications, on vessels providing regular or frequent services to their home ports or state. These could include:

- Vessels employed on liner schedules on Australian circuits hubbed through Singapore or other Asian ports
- RoRo vessels linking Australian ports with Japanese, Korean or Malaysian hubs
- Bulk iron ore vessels employed regularly on Asian trade from the Pilbara Ports

Some companies operating in these trades have expressed in-principle interest in participating in a scheme of this nature.

WA Government training incentive schemes

The WA Government, through the Department of Training and Workforce Development administers a range of mechanisms for the support of trainees and their employers. These include incentives for employers of trainees in a number of industry sectors and areas within WA. Various types of subsidies and allowances are available, based on the special circumstances applying to the sector or region.

The Construction Training Fund is one of these. In operation since 1990, it provides grants to employers of apprentices in the construction trade, and is funded through a levy on all building projects of value greater than \$20,000 undertaken within WA.

A bespoke scheme to support the employment of Western Australian trainee seafarers could be funded either via a levy on shipping or through a variety of other mechanisms.

Reflecting the nature of shipping schedules, any training initiative of this nature would naturally have some advantages as a national scheme.

Trainees at all levels (eg masters, engineers, deckhands) could gain experience on vessels operating on these types of circuits with relatively short, frequent stints on board vessels operating between Australian ports. A scheme under which a pool of trainees from around Australia were employed by shipping lines (separately or together) would provide significant training and career enhancement benefits, without great financial impost.

6 SUPPLY CHAIN RESILIENCE

6.1 Overview

The nature of supermarket distribution networks and inventory management has been a focus of attention since the rail freight disruption in February 2022. Less attention has been paid publicly to supply chain risks for other types of goods, equally important but less obvious in the community. These include construction materials, notably steel, manufactures and mining inputs, all of which are somewhat dependent on supply from eastern states

Emergency rail outage response system

Arc and Australian Railways Association have prepared a list of proposed works for submission to the Commonwealth Government (expected early October).

Inland rail project has raised the profile of rail freight in the conversation. East Coast weather this year caused many disruptions to rail corridors in NSW/Qld. Most impacts on export industry etc, rather than households (as in WA).

In the wake of this year's flooding events, ARTC has developed a \$170m resilience program for its national network, including the east-west corridor. A heavy focus of the program will be hydrological analysis of flood-susceptible stretches between South Australia and Kalgoorlie.

In WA, Arc Infrastructure has identified a program of proposed works to be carried out on the national network, with support from the Australasian Railways Association (ARA).

These include

1. Rail track upgrades
 - New 5km passing lanes at two locations in SA to provide passing opportunities as well protection against flooding closing the track.
 - Improved drainage at many locations (raising track, improving culverts etc)
 - Treatment of potential washaway locations between Perth-Northam - following an incident in 2017 which closed the track for a week.
2. Communication, management
 - Improved rail incident recovery processes (information sharing)
 - Investment in intermodal sidings and capability at key locations eg Avon, Merredin, Kalgoorlie to facilitate truck/train transfer for recovery from major outages. Currently there are no locations on the east-west track within WA where this can be done.

In November 2022, further flooding that has closed the Sydney-Broken Hill-Adelaide-Perth corridor for long periods, exacerbated by a major derailment on the Melbourne-Adelaide railway, led to the increased pressure on supplies to WA once again. Train services from NSW and Victoria were reduced to virtually zero for 1-2 weeks, and will continue at reduced levels into January 2023.

Fortunately, lessons from the earlier incident had been learned. Supermarkets had been maintaining higher inventory levels of critical stocks, so that the effect of supply shortages was less immediate.

Communications links between agencies, interstate rail authorities and supply chain interests were activated quickly and decisions were made that allowed rapid

engagement of road and sea transport. These links and protocols need to be maintained for urgent deployment as needed in future, as climatic risks grow over time.

Australian Rail Track Corporation (ARTC) has recently announced a program of flood mitigation investigations which will identify the highest risk sections of the interstate network and seek to protect rail assets and services from future climatic events.

It is however, unlikely, that capital works along the inter-state rail corridor could defend against flooding which can occur in a many locations along the route.

The rail network will remain the dominant supply chain link for east-west domestic freight, but coastal shipping policy needs to be adjusted to make provision of domestic capacity more cost-effective for freight shippers to access.

Logistics/distribution throughout North-West and remote WA

The enormous size of the state of WA presents logistics challenges at the best of times. Perth is the only metropolitan centre and the state's general freight and logistics base. The Port of Fremantle is the dominant container handling port and the prime means by which imported goods gain access to Western Australia.

Several international container shipping lines provide services to Fremantle as part of their regular round-Australia schedules, ensuring that sea freight prices are competitive at that port. The ability to bring international containers into other WA ports is limited by the lack of scale, higher shipping costs and lack of logistics and customs infrastructure.

Consequently, large volumes of general freight and mining inputs are routinely driven by truck from Perth to centres and mining camps in the Pilbara, Kimberley and Goldfields regions, over distances of up to 2,000 km. Traffic count data suggests that approximately 120 heavy vehicles per day make this journey in each direction, equating to an estimated minimum 3 million tonnes of freight per year heading north, and possibly 2 million tonnes of minerals product heading south.

These heavy freight moves generally utilize the Great Northern Highway in preference to the North West Coastal Highway.

Northern and western regions are susceptible to natural events such as cyclones and fires which can severely disrupt logistics operations, with heavy costs.

Remote indigenous settlements are particularly expensive to service with basic goods, over long distances and challenging road surfaces.

Improved availability of shipping services should be able to make a difference to the transport challenges for some of these types of goods and for some destinations in the north-west of the state.

Previous usage of shipping along the WA coast has been based on supply from Fremantle and required significant state subsidy. The last ‘state shipping’ service was discontinued in 2013 as it proved unable to effectively compete with road transport, due to timeliness issues and lack of steady demand.

Potential for use of shipping in NW WA

More recently, direct shipping from Singapore to the Pilbara ports has begun to increase in popularity, especially with the supply inputs of the resource sector. Two shipping lines are now providing regular services which take considerable cost out of the Singapore-Fremantle-Pilbara pathway (via the Great Northern Highway). Further increases in service frequency will make this pathway even more attractive, for goods being imported from Asia.

Extension of these types of services down to Perth or across northern Australia to Queensland could provide year-round options for some grocery items, under some new supply chain arrangements.

At present, the berthing options available to the direct shipping services in the Pilbara are limited and congested. These ships share common-user facilities in Port Hedland and Dampier with a range of other trades and ships.

The development of Lumsden Point (in Port Hedland) and the Dampier Cargo Wharf will provide for greater berth access for direct shipping. Improved berthing capacity at these ports could be augmented by some common-user storage infrastructure (eg warehousing and cold stores) which could create a viable alternative path to these remote markets for Australian supermarkets and their suppliers.

At present, major supermarket stores in these centres have larger than usual storage areas to accommodate any supply shocks. Purpose-built common user warehousing, combined with cost-effective shipping options would relieve stress on the road transport systems and provide some inventory benefits for the entire region.

6.2 Remote areas food security

Floods and cyclones can affect the supply of foods and essential services to remote and indigenous communities across northern Australia. Grocery supply chains for

these communities are fragile, relying on small scale supermarket transport networks and often in the absence of freezers and refrigerators in the communities.

High road transport and storage costs mean that basic goods sell at large mark-ups compared to prices in larger centres.

During floods and bushfires, the supply of goods into remote areas becomes even less reliable and affordable. Improved overall supply chain resilience for these communities and for the charitable sector could result from investment in shipping options and centralised logistics assets.

7 ISSUES FOR CONSIDERATION

7.1 National Issues

In November 2022 the WA Taskforce made a submission to the Commonwealth Taskforce highlighting some interim conclusions on the most promising directions for future policy development.

Strategic fleet

Any strategic fleet needs to be established nationally, rather than by states such as WA on their own. By far the greatest fraction of WA's 1 billion tonnes of annual sea freight volumes is international trade:

- international, 98% (eg containers, bulk exports, bulk imports, cars etc)
- interstate, 2% (eg alumina, containers, mineral sands, fertilizer)
- intra-state, < 1% (eg fuel, fertilizer, oil/gas supply sector)

A strategic fleet of any substantial value would need to be most active in the international and interstate space, helping guarantee essential supplies of imports (household goods, fuel etc) from key global hubs and eastern states distribution networks. In times of genuine emergency, export capacity would be a secondary consideration, though still vital in more extended emergency contexts.

A strategic fleet most likely would consist of a commercially self-sufficient nationally flagged fleet which could be co-opted into emergency service as needed from time to time.

The most important aspect of a national strategic fleet initiative would therefore be the policy changes to provide the commercial conditions under which Australian flagged vessels could be competitive with foreign-flagged ships in targeted sectors of the economy. These sectors would be those supporting import commodities essential to the domestic economy and wellbeing of Australian citizens, including fuel and some crucial industrial inputs.

Fortunately Australia is virtually self sufficient regarding food and most population centres have reasonably proximate access to fresh produce, meat and dairy products.

Ultimately the economic wellbeing of the nation depends greatly on international trade of all kinds, beyond the guarantee of critical emergency supplies (like food and fuel). However, the case for establishment of a national fleet servicing second order economic needs such as the container trade and bulk exports, both heavily dominated by international shipping lines, will be a major focus of the Commonwealth's research.

Coastal shipping

The current national regulatory regime for the shipping industry is not in practice supporting the aims of an Australian shipping industry. There are two shipping registers in operation, and a combined total of only 13 flagged ships. The regulatory regime and the Coastal Trading Act are not serving to make it commercially attractive for Australian companies to put nationally flagged vessels into operation. They also make it harder for international vessels to carry domestic cargo between Australian ports.

The entire regime needs rethinking in order to make it possible for Australian flagged and crewed vessels to compete authentically with foreign shipping lines, at least in certain critical industry sectors.

We note that the Strategic Fleet Taskforce's Terms of Reference numbered 3-7 provide the scope for the full range of these issues to be properly examined by the Taskforce.

Currently, containerised freight between eastern states and WA may be carried by international carriers serving these ports on their international schedules (under Temporary Licences). Some carriers target this domestic market deliberately from time to time, by making slots available regularly, while others avoid this type of trade, especially if it adds operational complexity to their schedules. The viability of this domestic trade is also variable with prevailing sea freight rates.

International shipping has an inherent competitive advantage over any dedicated Australian domestic service for containers, being able to add domestic volumes at marginal cost to pre-existing services.

Under a more favourable coastal shipping regulatory regime, a dedicated Australian-flagged coastal service could be more competitive than it would be under the current regime. The parameters for such a service should be closely examined by the Commonwealth Taskforce on behalf of all the states whose ports could support a coastal service.

For instance, a domestic service linking the major ports of Queensland, NSW, Victoria, South Australia and Western Australia could fill a gap in the market and provide some basic hybrid shipping capability for a strategic fleet, servicing critical needs in the container and RoRo markets.

Maritime Training and career pathways

For a country highly dependent on shipping and sea freight, we have a very thin locally trained and based maritime workforce. The lack of flagged shipping ensures that there are relatively few jobs available to Australians seeking employment in this field. Positions at sea are also subject to international rates of pay, which are generally well below those available under Australian law.

Consequently there are only small numbers of trainees enrolled in maritime training programs around the country. The training capability exists for greater demand that would arise from an improved outlook for Australian maritime workers that could arise from a broad reform of national shipping policy.

Time at sea is an important component of maritime qualification; yet there are few accessible opportunities for Australians to gain this experience. A strategic flagged fleet would provide the platform for much more local time at sea for trainees, with the additional benefit of providing realistic earnings for Australian residents.

There is also the opportunity to work with international shipping lines that regularly service Australian ports so that training positions can be provided for Australian on these vessels. Some shipping lines have indicated informally that they would participate in schemes under which they could provide time-at-sea training on round-Australia schedules, with some level of public sector support.

These types of supported schemes could take many forms, under either national or state industry support mechanisms, of which many exist serving other sectors, such as the construction sector, or remote area employment.

Landside supply chain resilience

The flooding events of early 2022 led to a re-evaluation of WA's dependence on the east-west railway corridor for a large percentage of its groceries and a range of industrial goods. At that time, it became clear that:

- grocery inventory levels under just-in-time models did not provide much protection against major disruptions to rail service
- the ability to quickly transfer custom from rail to road transport and shipping was limited
- communication and co-ordination of responses had to be rapidly built, virtually from scratch

The full recovery of supermarket stock levels took several months. Fortunately, the private sector and government agencies have learnt important lessons from this event, which are currently being deployed in response to some similar disruption to the railway supply chain through November 2022. Flooding in NSW has closed the Sydney to Adelaide link, while a derailment in Victoria also cut services for over a week.

Fortunately, supermarkets had built up their local WA inventory levels to higher levels in anticipation of disruption risks, and in response to the earlier event. Communication channels were quickly reactivated. State and Federal government agencies have been able to co-ordinate approvals to facilitate additional long distance road transport capability. The impact of this latest disruption on the WA community has so far been much less significant than the first event.

However, the ability for shipping to take up a share of the freight lost to the rail network remains fairly limited. The additional costs, double handling and administrative burdens ensure that shipping options fall behind road transport, which is more agile and responsive to changed circumstances.

The Commonwealth's Taskforce should examine how modal shift to shipping for general freight under emergency conditions can be facilitated in time to make a realistic difference to cross-country supply chain needs.

7.2 Initiatives of significance to Western Australia

Coastal shipping policy improvements

Current national coastal shipping policy does not achieve its aims of supporting Australian-flagged shipping in competition with international ships.

There are sectors where it makes sense to have Australian operators placed on an equal footing with international providers, and this can be achieved without the need for subsidies, if policy settings are corrected.

These include:

- Taxation reforms to level the playing field (income tax, dividend withholding tax, payroll tax etc)
- Some form of cabotage for purely domestic voyages, especially regular bulk haulage tasks
- Changes to logic of the Australian International Shipping Register (AISR), under which ships currently are required to work ‘off the coast’ for half the year
- General incentives to provide a competitive edge to Australian ownership and crewing practices

Reform of national shipping policy on this regard would provide Australian companies with an incentive to invest in shipping. Western Australia would provide many opportunities for a competitive Australian fleet to establish a meaningful presence in the market.

Domestic Coastal Service – Strategic Fleet

The introduction of new, subsidized, standalone Australian flagged services may be an outcome of the Commonwealth’s Strategic Fleet review. If this does eventuate, WA should seek to take advantage of the opportunity to have a dedicated RoRo/container service on the Perth-Melbourne-Sydney corridor.

This service would serve several purposes:

- Provide competition for the long distance rail services
- Additional capacity in surge times
- Some emergency capability
- A permanent training vessel/service

Such a service could be provided by a small flexible RoRo vessel capable of carrying containers, motor vehicles and various forms of break bulk cargo.

Subsidisation of this service would be necessary as it would be competing with international carriers able to handle coastal cargo at lower marginal costs.

One way to reduce the costs of the service would be to deploy it to serve niche markets via regional ports such as Bunbury and Geelong, rather than capital city ports. This would provide a point of difference with existing services and possibly

take advantage of greater berth availability. Customers located outside the capital cities could see some benefit in such a service, defraying the landside freight costs that they otherwise face.

Partnerships with existing service providers

Notwithstanding the outcomes of the Commonwealth Taskforce's inquiry, substantial benefits could be available through partnerships of various forms with existing shipping operators.

Container shipping lines currently providing regular scheduled services to Australian ports could provide guaranteed capacity to domestic consignments on certain routes, possibly at regulated rates (to ensure commercial utility to local freight users).

Container and RoRo shipping on regular schedules could provide ongoing training opportunities under a state or nationally administered sponsorship scheme involving training institutions.

Maritime training initiatives

Various types of shipping could be signed up to provide training opportunities for WA trainees, including:

- Domestic bulk shipments, protected by some form of cabotage arrangements
- Opportunistic bulk export voyages under the PPA cadetship program (or similar)
- Container shipping as above
- Oil/gas supply shipping

Remote area connectivity

There is potential for shipping and logistics initiatives to address the cost of providing essentials to northern regions and remote communities, under both normal and emergency conditions.

Nearly all general freight needs of the communities of the Pilbara and Kimberley regions are delivered by road transport from Perth, over distances between 1,500km (to Karratha) and 3,000km (Kununurra). It is possible that shipping could provide alternative for some of this freight under a more favourable coastal shipping regime.

Note – the unprecedented flooding in the Kimberley in January 2023 created long term disruption to the highways and roads across the region. Barges were used to keep supplies up into Derby and the western Kimberley region while roads and bridges were repaired.

This type of long term disruptive event brings in to focus the potential for vessels from a future ‘national strategic fleet’ to provide supplies of all kinds to communities and businesses in the region.

The resource sector is beginning to make increasing use of shipping for the delivery of mining equipment and other inputs, into Pilbara ports from Singapore. The development of improved port facilities at Port Hedland and Dampier in coming years will further assist this trend.

New general shipping capacity in Pilbara ports could be harnessed for shipping to service household needs, and particularly those of remote communities throughout the Pilbara and Kimberley regions currently dependent on Perth-based supply chains operated by supermarket chains.

Improvements to these networks could include the provision of publicly funded warehousing and cold store facilities in key regional centres which could both reduce distribution costs and provide some supply chain resilience during weather events and other disruptions.

North-west WA supply chains

Under a more favourable national policy regime, direct shipping from Singapore could provide the basis of a more extensive coastal service extending eventually to Perth. At this point, it would be viable as a means of supplying general freight to the Pilbara and Kimberley regions.

This service would be more competitive once Lumsden Point development frees up berth capacity in Port Hedland for improved service reliability.

Supply chains would be further augmented by the provision of co-located common-user warehousing and cold stores in Port Hedland and/or other centres which would improve the viability of shipping-based supply of various types of goods (groceries and mining inputs).

East-west supply chain resilience

Flooding and fire events will occasionally cause substantial interruptions to long distance rail and road services. Lessons learned regarding communications

protocols and early decision-making on road freight permits and lifting of shipping restrictions must be locked in.

Nationally funded efforts to reduce the risks of washaways on various susceptible sections of the interstate rail network will be supported.