

Freight Policy Reform: Consultation Paper

April 2024



Acknowledgment of Country

Transport for NSW acknowledges the traditional custodians of the land on which we work and live.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation’s First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples’ cultural and spiritual connections to the lands, waters and seas and their rich contribution to society.





Minister's Foreword

I am pleased to share the Consultation Paper for the Freight Policy Reform Program (Reform). The Consultation Paper is a critical step in the reform program, which will investigate and review the policy settings that apply to different parts of the supply chain. The Reform will identify short, medium and long-term actions for Government to support a resilient freight sector that will in turn enable us to develop our local manufacturing capabilities and improve road safety.

For most of the community, the vital supply chains that provide the goods we rely on, from technology and consumer goods, building materials to life saving medicines are, for the most part, invisible. It is only when the implications of a substantial break in the supply chain, including delays in the delivery of goods and subsequent increases in costs, that it becomes visible to the wider community.

Our state economic growth and prosperity depends on the safe, efficient and reliable movement of goods. Moving these goods efficiently relies on a complex and interconnected network that includes shipping and ports, roads, rail and intermodal terminals. Government has a key role in making this network operate effectively - from the investments we make in infrastructure, how we operate our networks and our policies and regulations.

With population growth, net zero emission targets and technological advances simultaneously impacting both the freight and passenger transport sectors it is imperative that we develop a reform program that is shaped by the expertise of industry so we can respond to these opportunities.

To this end, I have appointed a Freight Policy Reform Program Advisory Panel, led by Kerry Schott AO and including Lucio Di Bartolomeo and Hermione Parsons, all of whom have extensive experience in the freight sector. The Panel will support the development of this significant freight reform program, and will be a source of independent advice and assurance on the policy reform.

I am confident that this initial phase of consultation will greatly benefit the development of the Reform's public policy and guiding principles, a draft of which will be outlined in an Options Paper that will be released later this year for further consultation.

I look forward to watching the evolution of this significant reform program and working together along the journey.

Jo Haylen MP
Minister for Transport

Reader's Guide

This consultation paper is the first stage of the NSW Freight Policy Reform Program. The Panel seeks your views on key issues to guide policy development about freight in NSW.

This reader's guide is an overview of the paper to assist you to navigate to the areas of most relevance to you.

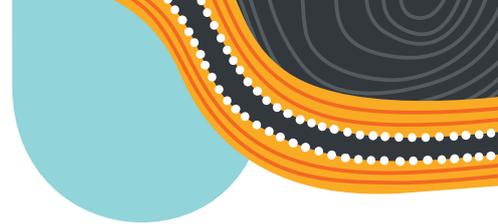
- 1. Introduction** – context, guiding principles and the panel's terms of reference.
- 2. The freight task in NSW at present** – an overview of the current freight chains and systems in NSW including export and imports, interstate and intrastate freight movements and the regulatory environment.
- 3. The changing freight task** – highlights the key drivers of change over the coming years including population growth, climate change and decarbonisation and technology.
- 4. Strategic issues** – identifies some of the key issues that are present or emerging that warrant consideration in terms of Government's policy and potential actions.

5. Discussion questions – we seek your input on these questions relating to policy about the freight chains and system overall as well as specific areas of freight.

The full paper is available for your review and to provide a common understanding of the freight system in NSW. Sections 4 and 5 will guide you to the issues and questions for which we are seeking your input.

As part of the consultation we will accept written submissions and we also have guiding questions, with indicative areas for consideration. You can answer all questions or choose to provide input on particular areas only.

We will also be undertaking direct stakeholder engagement over the coming month with information sessions to provide further information on the program.



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1 Introduction



1 Introduction



On 25 January 2024, the NSW Minister for Transport announced the NSW Freight Policy Reform Program (Reform).

Ultimately the Reform will deliver a comprehensive strategic reform agenda and action plan to optimise freight transport in NSW.

The Reform will involve policy reviews relating to different parts of the freight system, particularly about road, rail and ports. Critical facilities connecting and supporting the supply chain such as intermodals and industrial lands will also be considered, recognising they play a part in connecting the movement of goods across the network.

To support the development of this significant freight reform program, an independent advisory panel (Panel) has been established: Kerry Schott AO, Lucio Di Bartolomeo, and Hermione Parsons. All have extensive experience in the freight sector.

The Panel has been appointed by and will report to the NSW Minister for Transport and will be a source of independent advice and assurance on the policy reform.

The NSW Minister for Transport has requested the panel's assistance in developing policy and guiding principles about six matters, outlined in the Terms of Reference (section 1.2).

1.1 Approach

The first stage of the Reform is to seek views from industry and other interested parties. In recent years reviews of freight have focused on one link in a freight chain, network or mode of transport. This Reform is intended to examine freight chains as a system recognising all points and links in the chain. The freight industry is only as efficient and productive as all its parts allow.

To assist in consultation, this paper is structured as follows:

- **Section 2:** the freight task in NSW at present – the major supply chains and freight flows and the infrastructure networks, including the policies and regulations that support them
- **Section 3:** the changing freight task – the major changes likely to shape the NSW economy, influence future patterns of demand and supply and impact the freight sector and key supply chains
- **Section 4:** the strategic issues – the opportunities and challenges evident or likely to emerge for the freight task and in that context, what is the government role as an infrastructure owner and in policy, planning and regulation
- **Section 5:** discussion questions – for input from you or your organisation to help inform the Reform.

You are invited to respond to the discussion questions (Section 5) on the issues. The feedback from this Consultation Paper will inform the development of an Options Paper, which will be released for consultation in mid-2024. The Options Paper is intended to set out guiding principles, outline initiatives and interventions available to government (identifying those that offer the greatest benefit) and set out proposed measures of success.



You are invited to respond to the discussion questions

1.2 The Terms of Reference

The NSW Minister for Transport has requested that the Panel assist in developing policy and guiding principles about six matters:

1. The role of the NSW Government, Australian Government and industry in making a step change in freight transport.
2. The major ports in NSW.
3. The road and rail network.
4. The supporting metropolitan and regional intermodal terminals (IMTs) and other enabling transport infrastructure.
5. Consideration of freight in the identification and use of industrial land.
6. Embedding freight considerations into transport planning, prioritisation and investment decisions.

The guiding policy principles are to be used to inform the development of short, medium and long-term actions that will be driven by the NSW Government in collaboration with industry and the Australian Government.

In providing advice on the Freight Policy Reform Program, specific regard will be given to:

- Whether the current rail freight policy framework is delivering on its objectives and remains fit for purpose in today's operating environment to deliver an effective rail network for the movement of goods.
- Whether differing market design solutions are required for different rail tasks (e.g. containers to port, bulk to port, construction materials, interstate freight, intrastate freight) to support greater modal shift to rail, giving regard to the costs, benefits and public benefit associated with any proposed reforms.



Cargo ship berthed at Port Kembla

- The short, medium and long-term plans for the major port operators and potential impacts on port operations such as the changing coal task, consideration of the implications of Independent Pricing and Regulatory Tribunals (IPARTs) determination about the Port of Newcastle and potential development of a container port at Port of Newcastle, to identify the best transport outcomes, in particular road and rail connections, and public value for the people of NSW.
- Road freight priorities and opportunities to improve the network capacity and capability and increase the proportion of modern, safe, sustainable and productive vehicles operating on NSW roads.
- Opportunities for sustainable road funding models that support the National Heavy Vehicle Road Reform including delivering more efficient and demand-driven pricing of road services.
- How industrial land is being identified, used and valued and how land use planning can better accommodate the current and future needs of the supply chain as NSW grows.
- How to optimise freight networks to support the growing freight task and better enable the safe, sustainable and productive movement of goods, ensuring an effective response to changing markets, the transition to net zero emissions and new and emerging technologies.
- Whether current transport planning and investment processes adequately recognise the importance and value of freight for our industries and communities, including consideration of planning for urban freight and supply chain resilience.
- Whether current organisational arrangements within Transport for NSW for freight policy, operations and industry engagement provide the appropriate level of influence and access to decision makers to drive reform.

1.3 Guiding Principles

In addressing the Terms of Reference the Panel proposes using the following guiding principles to undertake this review.

Freight plays a critical role - as part of the integrated transport system and as part of our cities, towns, suburbs and regions. Freight needs to be given priority consideration as part of the transport system and as part of strategic land use planning.

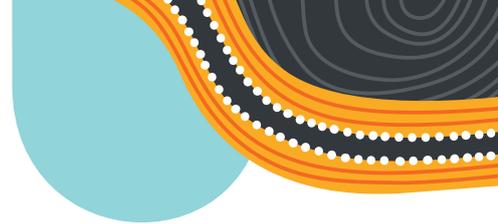
Governments have a role to ensure the freight system makes best use of our roads, railways, ports and intermodal terminals – which requires consideration of all the costs and benefits – financial (cost of transport, impact on cost of living and value of exports), social (eg. safety, congestion, lifestyle impacts), environmental (eg. emissions, noise impacts) to identify the policy settings required to align the freight system that achieves the greatest outcomes (in terms of greatest benefit and lowest cost) with the preferred commercial models that make up the freight system.

Competition must be encouraged and well balanced - the interconnected nature of the freight system means the application of National Competition Policy needs to recognise the operational realities of network services within the market.

Access and charging frameworks should drive the use of the safest, cleanest and most productive freight vehicles and technologies. Charges within the freight chain should be supporting investment to optimise the freight system and driving improved outcomes in terms of how freight is transported.



Freight plays a critical role as part of the integrated transport system



The cost and complexity for freight users and customers accessing and using the transport network should be minimised. Inefficiencies in the freight system, including a lack of coordination and a lack of transparency, need to be addressed in order to support improved operating models and deliver better options for freight customers.

NSW needs to align with and influence the national agenda – the NSW freight system is part of the national freight system, including industry operations; transport networks and policy and regulatory settings. The nature of the freight chain, and interdependencies between the interstate and intrastate tasks, means alignment with the national approach is essential.

Public and private investments should be effectively utilised to deliver improvements to the freight system. Government and industry continue to make significant investments in infrastructure and equipment to support the efficient movement of freight. It is imperative that those investments are effectively utilised to realise the benefits.

1.4 The importance of freight policy in NSW

The freight transport and logistics sector is critical to the economic prosperity of NSW. Freight enables people to receive the goods they demand and allows suppliers to move their goods to where they are demanded. The cost of transport is embedded in the cost of goods and taken from the value of exports. As such, inefficient freight logistics chains add to the cost of goods (and living), increase community impacts, lower economic productivity and competitiveness of our businesses and industries.

While the freight sector is largely commercial, governments have a key role. Governments do not directly operate freight services but do:

- own much of the infrastructure
- provide indirect services
- regulate operations including safety requirements
- decide the policy settings and regulations for how freight markets function and evolve.

Policy settings determine things such as access provision, charges for use of the transport networks, the types of road and rail vehicles that can be used on the networks and the framework that guides private and public sector planning and investment decisions. Government policy, market design and regulation affect safety, efficiency, sustainability and productivity of the freight task.

An effective freight policy is one that allows and encourages the freight industry to do what it can do best – move goods safely, sustainably and productively – while ensuring that these markets operate in a way that maximises public benefit. This means creating the environment in which the freight sector can innovate, evolve and add value to the NSW economy, while ensuring that the market does not generate unnecessary costs or impacts that are borne by the community or the broader economy. It also means that government interventions, whether these be enabling (such as through provision of public investment) or behaviour constraining (such as through economic regulation), must be carefully designed and implemented to allow freight markets to operate effectively and include measurable outcomes that demonstrate public benefit.

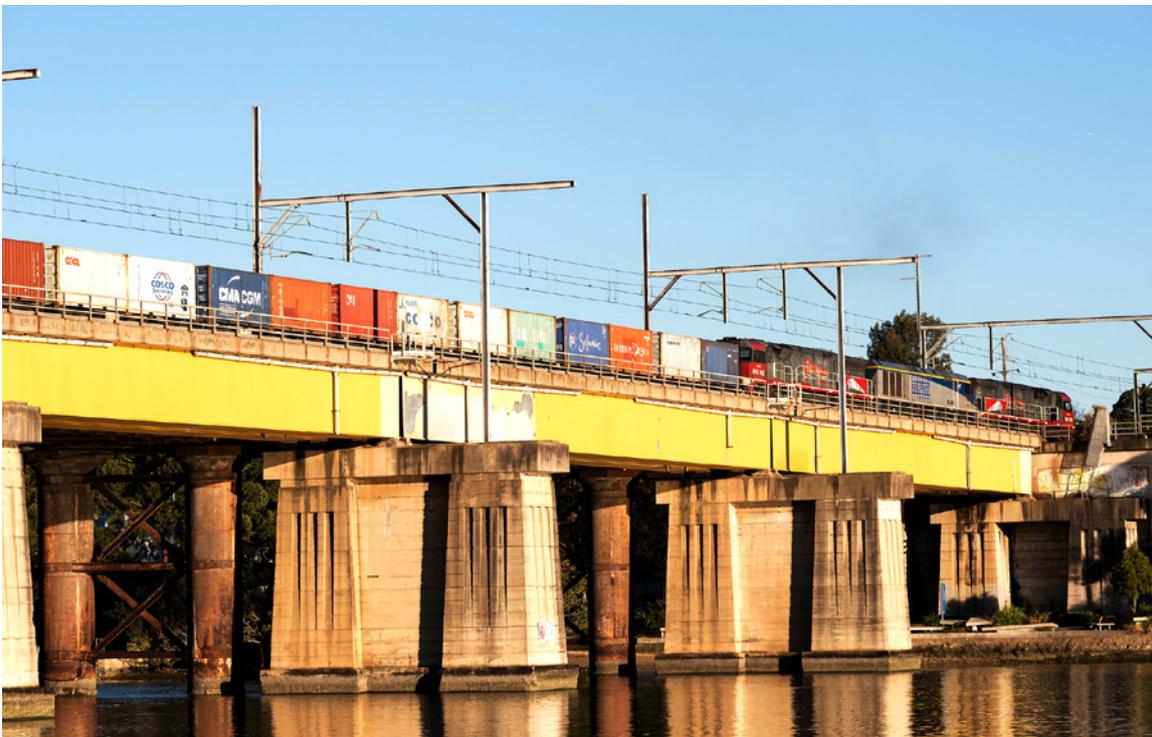
This Consultation Paper covers two areas, consideration of broader public policy and guiding principles and consideration of several more specific matters for NSW.

It has been nearly two decades since comprehensive and system focused freight policy reviews occurred in NSW, such as carried out by the Freight Infrastructure Advisory Board Review in 2005.¹ Since then there has been a sequence of significant changes including:

- privatisation of government operated rail services
- transfer of large tracts of rail infrastructure to Commonwealth control
- leasing of the three major ports to private sector operators
- widespread uptake in the use of higher productivity vehicles
- billions of dollars of public funding invested in transport infrastructure for all users
- significant private sector investment in infrastructure including motorways and some supporting rail infrastructure.

There are further significant changes facing the NSW freight industry and two seem particularly important:

- Population growth increases demand for freight services and for housing. This dual demand and resulting density makes planning decisions about transport network expansion, industrial land, terminals and depots more important than ever. These changes, along with others, underscore the importance of having a freight policy that clearly sets out government's role, the outcomes government is seeking to achieve and how it will achieve them.
- The transition to a net zero economy by 2050 will have an important influence on transport generally. Transport is one of the major emitting sectors in the Australian economy and more specifically NSW is a major exporter of coal, which is expected to face a significant decline in demand.



Freight train crossing John Whitton Bridge over Parramatta River

¹ Freight Infrastructure Advisory Board 2005, Railing Port Botany's Containers: Proposals to Ease Pressure on Sydney's Roads.

2 The current freight task in NSW



2 The current freight task in NSW



2.1 Introduction

Freight is a derived demand. Freight flows exist because a demand for goods is present at some distance from where they are produced. The choice of how to move the goods is governed by several factors including the cost of transport, the time taken, the types of goods being moved, equipment and choices available. Choices available include:

- what freight operators use to move their goods
- the infrastructure availability -ports, airports, road, rail, terminals, depots and warehouses
- regulation, planning and policy governing service requirements and availability
- workforce capability, capacity and talent.

This section provides a snapshot of the major freight movements in NSW.

There are three types of freight movements in NSW, though all overlap to some extent:

- exports and imports
- interstate and transit freight
- intrastate freight.

Freight movements are by sea, road, rail or air and are supported by ports, airports, terminals, depots, distribution centres and handling facilities. A freight logistics chain works well when all the links are efficient and goods move in the most competitive and cost-effective way, determined by the cost (including social costs) and service quality. A freight logistics chain is only as efficient as all its parts allow.

In NSW, there are links in most freight logistics and supply chains that can be improved, especially relating to productivity, sustainability and resilience (see Section 4). These weaknesses lead to higher cost in freight and may result in higher prices and costs for the NSW community, consumers and businesses.

2.2 Exports and imports

2.2.1 Overview

Export and import trade is centred around NSW's three primary ports: Botany, Kembla and Newcastle, with some high value or time critical trade carried by air. Apart from coal exports, as shown in Table 2.1, NSW's trade is import rather than export dominant hence the importance of container freight logistics. In the national context NSW has about 31 per cent of the Australian population, 38 per cent of the imports (by value) and 18 per cent of the exports.²

NSW import trade is more diverse than exports as shown in Table 2.2. These imports are largely refined petroleum and containerised goods. Port Botany is the main import destination and handles almost all containerised imports as well as the major share of bulk liquids and gas. Port Kembla manages passenger motor vehicles and some bulk goods. Port of Newcastle as well as being the largest coal export port also handles a range of imports.



Stacked containers

² Department of Foreign Affairs and Trade, 2023, NSW Factsheet 2022/23

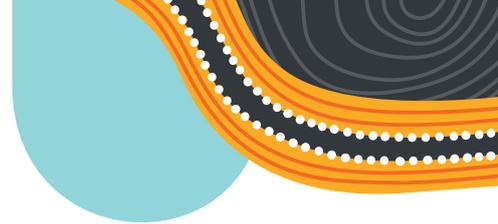


Table 2.1 The value of NSW export goods in 2022/23 financial year³

Commodity	Value (AUD \$ million)	Percentage (%)
Coal	54,959	52
Gold	4,351	4.1
Wheat	3,293	3.1
Refined petroleum	2,423	2.3
Aluminium	2,264	2.1
Beef, fresh, chilled, & frozen	1,886	1.8
Medical instruments (incl veterinary)	1,612	1.5
Meat (excl beef), fresh, chilled, & frozen	1,557	1.5
Measuring & analysing instruments	1,119	1.1
Oil-seeds & oleaginous fruits, soft	867	0.8
Other commodities	31,341	29.7
Total	105,672	100

Table 2.2 The value of NSW import goods in 2022/23 financial year⁴

Commodity	Value (AUD \$ million)	Percentage (%)
Refined petroleum	15,376	9.1
Telecom equipment & parts	14,401	8.6
Passenger motor vehicles	11,238	6.7
Computers	9,288	5.5
Medicaments (incl veterinary)	9,208	5.5
Pharm products (excl medicaments)	5,721	3.4
Medical instruments (incl veterinary)	3,524	2.1
Goods vehicles	3,327	2.0
Misc. manufactured articles, nes ⁵	2,533	1.5
Edible products & preparations, nes	2,227	1.3
Other commodities	91,275	54.3
Total	168,118	100

2.2.2 Port Botany

Port Botany is privately and commercially operated by NSW Ports under a 99-year lease that started in 2013. The three container freight stevedore businesses at Port Botany are privately owned and commercially operated by DP World Australia, Patrick Terminals and Hutchison Ports. NSW Ports directly operates the bulk liquid multi-user terminal.

³ Department of Foreign Affairs and Trade, 2023, NSW Factsheet 2022/23

⁴ Department of Foreign Affairs and Trade, 2023, NSW Factsheet 2022/23

⁵ Not elsewhere specified (nes) is used for items that are not mentioned elsewhere in a classification system

Freight is moved to and from Port Botany by both rail and road, with some imported bulk liquids directly piped to their destinations.

In 2022, Port Botany handled:

- 2.8 million TEU of containerised freight (1.3 million TEU full imports, 0.4 million TEU full exports, 0.8 million TEU empty exports and 0.3 million transhipped containers that are unloaded from one ship and leave the port on another ship⁶
- 5.6 million revenue tonnes of predominantly bulk liquids and gas⁷

Road network

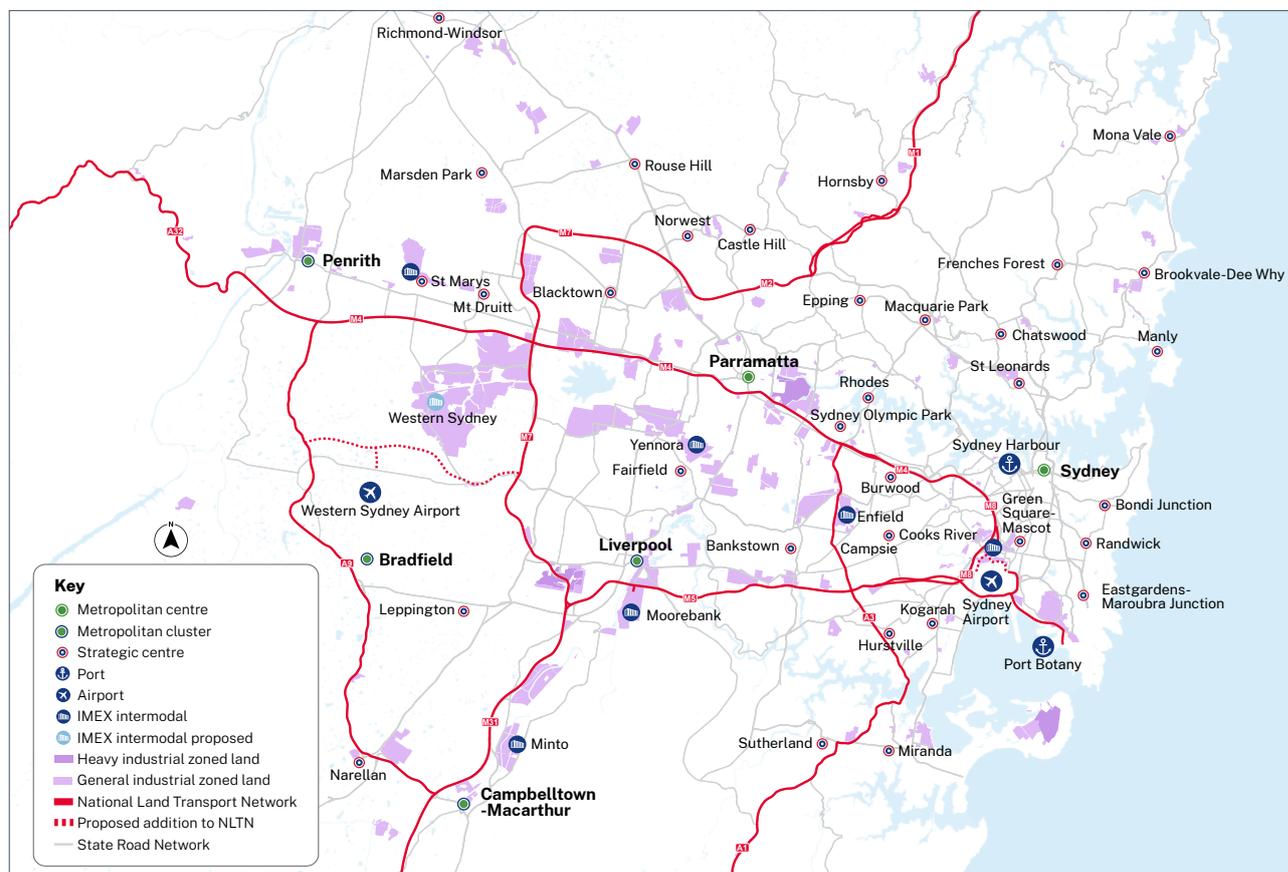
About 4,700 trucks access Port Botany on a typical weekday to service both containerised freight and bulk liquids.⁸ Arrangements for trucks at the container stevedores are governed by the Port Botany Landside Improvement

Strategy (PBLIS) introduced in 2010 to improve truck management at the Port. The arrangements governing container trucks at Port Botany are discussed later in Section 4.

Port Botany is close to the wider Sydney motorway network – the M5 to the southwest, the M8 connecting to the M4 to the west and the M1 connecting to the M2 to the north (Figure 2.1). This motorway network allows connections to major highways at further distance from Port Botany. The motorway network is a strong freight link though it is tolled and at times is heavily congested.

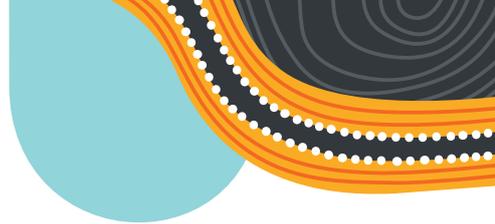
The share of freight to Port Botany carried by rail rather than road is about 14 per cent.⁹ Despite government objectives to increase the share of freight rail this has not happened with rail freight share falling by about five to six per cent since 2017.¹⁰

Figure 2.1 Sydney’s metropolitan road network



Source: Transport for NSW

6 Transport for NSW, 2024, Open Data – Freight Data – Port Botany
 7 Transport for NSW, 2024, Open Data – Freight Data – Port Botany
 8 NSW Ports, 2023, NSW Ports 2063-our 40 Year Master Plan, p.74
 9 Transport for NSW, 2024, Open Data – Freight Data – Port Botany
 10 Transport for NSW, 2024, Open Data – Freight Data – Port Botany



This decline has occurred even though Port Botany has on dock rail facilities at each of its three container receipt sites. These port rail facilities are directly connected to the Port Botany rail line, part of the Metropolitan Freight Network (MFN) leased, managed and operated by the Australian Rail Track Corporation (ARTC), an Australian Government owned company. Duplication of the final three kilometres of single-track section of the Port Botany rail line was completed in February 2024, providing a significant increase in track capacity.

Rail network

The MFN connects to the ARTC's interstate network via the Southern Sydney Freight Line and to the Sydney Trains shared network, which is dominated by passenger traffic, particularly at peak periods.

The Country Regional Network (CRN) is the originating network for some port bound trains and all feed into the ARTC or Sydney Trains network bound for Port Botany.

Paths are allocated for trains up to 1,800 metres in length across the ARTC managed network.¹¹ This is the preferred length for interstate freight trains.

For intrastate freight movements (to and from regional NSW to Port Botany precinct), the usual pathing request is for trains between 600 and 1200 metres.

There are train length restrictions on parts of the Sydney Trains managed (mixed-use) network, including:

- Main North and the Main West lines,¹² freight train length is restricted to 1,500 metres
- Illawarra line, freight train length is restricted to 900 metres.

Both ARTC and Sydney Trains managed corridors allow 25 tonnes wagon axle loading.

Trains on the Port Botany Line operate up to 25 tonne wagon axle loading, consistent with other major rail freight corridors in NSW. At present, the maximum siding length at the Port is 600

metres, with longer trains needing to be 'split' in the Port Botany yard (or before arrival) to access stevedore terminals. Trains arriving from regional NSW are generally longer than the 600 metre siding length. Additionally, they carry mixed loads for multiple stevedores. These two factors require shunting and cross-checking of loading, which contribute to the complexities of rail operations.

Intermodal terminals (IMTs)

Trains to and from Port Botany are supported by regional and metropolitan IMTs. Regional IMTs are smaller than the metropolitan IMTs. The six metropolitan IMTs are:

- Moorebank
- Cooks River
- Minto
- Enfield
- St Marys
- Yennora.

Table 2.3 provides an overview of the IMT, operator, throughput, capacity and siding length.

Except for Moorebank (owned by National Intermodal Corporation, an Australian Government owned company), the IMTs each have a capacity less than 350,000 twenty-foot equivalent unit (TEU) per annum (Table 2.3). Cooks River and Enfield Intermodal Logistics Centre are located on the MFN, Moorebank is accessed via the MFN and the Southern Sydney Freight Line and Minto, St Marys and Yennora rely on access to the shared passenger rail network (Figure 2.2).

Moorebank and Enfield terminals handle the largest share of metropolitan port container volumes.

Moorebank is operated by Qube Logistics and Logos (warehousing) under contract with National Intermodal Corporation. A new interstate terminal will begin operations at Moorebank this year enabling receipt of trains 1,800 metres in length. This may allow an additional site where 1,200 metre trains could be 'split' prior to reaching Port Botany.

¹¹ ARTC, Route Access Standard (RAS) D45 Port Botany – Macarthur, p.7

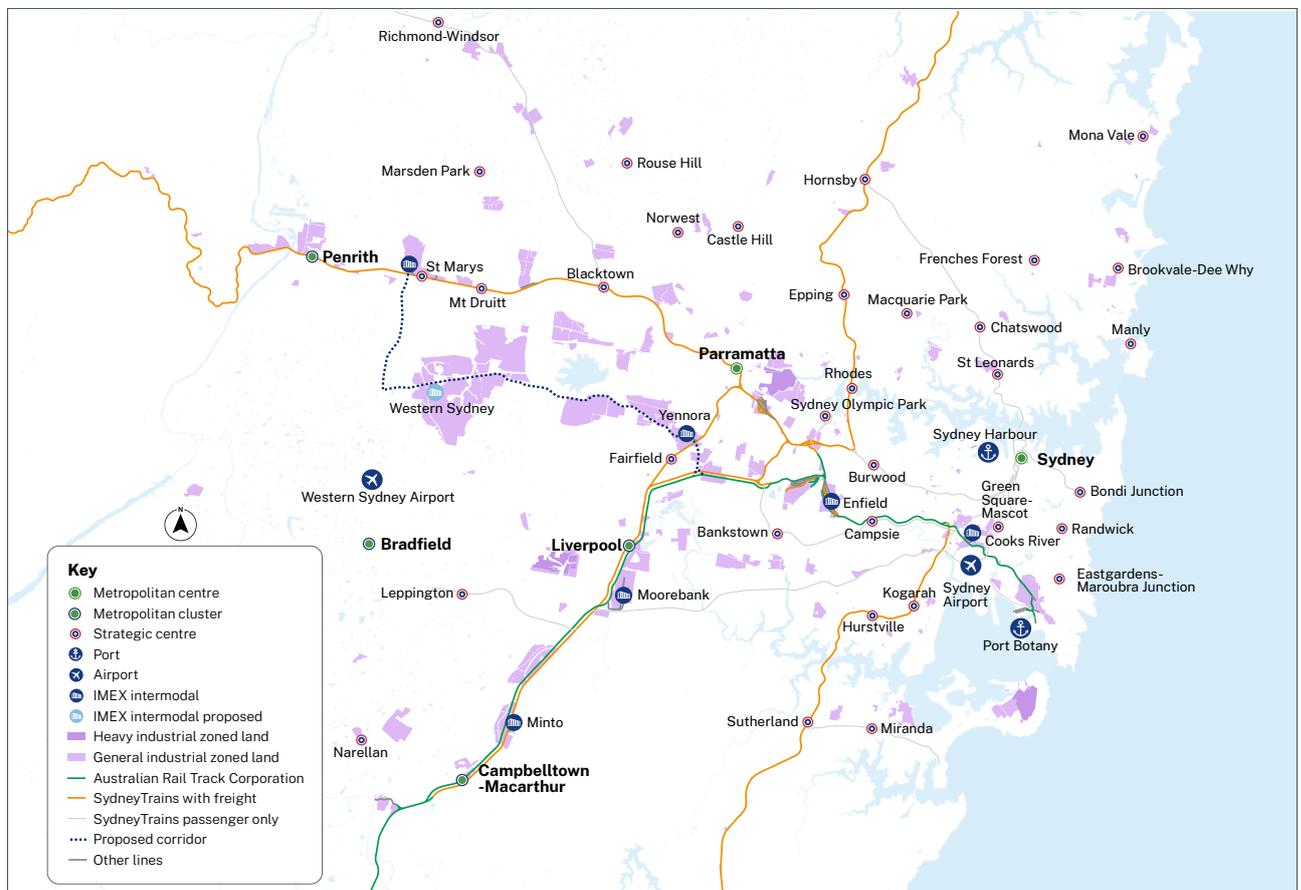
¹² Trains longer than 1,280m on the Main West are required to operate at lower speeds.

Table 2.3 Summary of metropolitan IMTs and rail network

Site	Operator	Approximate throughput 2022 (TEU)	Capacity (TEU/year)	Siding length (metres)
Cooks River	Qube (leased from NSW Ports)	35,848	330,000	600 ¹³
Enfield	Swift (leased from NSW Ports)	80,025	300,000	920 ¹⁴
Moorebank	Qube (for National Intermodal)	71,425	1,050,000	650 ¹⁵
Minto	Qube	41,656	200,000	600
Yennora	DP World/Southern Shorthaul Rail	40,700	150,000	530 ¹⁶
St Marys	Pacific National (joint venture with ACFS)	35,644	301,000	600 ¹⁷

Source: Transport for NSW

Figure 2.2 Metropolitan Rail Network and supporting Intermodal Terminals



Source: Transport for NSW

¹³ ARTC, 2015, 2015-2024 Sydney Metropolitan Freight Strategy, p.11

¹⁴ ARTC, 2015, 2015-2024 Sydney Metropolitan Freight Strategy, p.9

¹⁵ Parsons Brinckerhoff, Moorebank Intermodal Terminal Environmental Impact Statement –EIS Summary, P.lv

¹⁶ ARTC, 2015, 2015-2024 Sydney Metropolitan Freight Strategy, p.9

¹⁷ Site planning + design and Urbanco, St Marys Freight Hub Environmental Impact Statement.

Cooks River and Minto terminals are operated by Qube Logistics. Enfield is operated by Swift Logistics (under lease from NSW Ports) and St Marys is operated by Pacific National (together with ACFS Port Logistics).

In late 2023, DP World announced it was expanding its presence at Yennora, adding an additional 45,000 square metres to its existing 60,000 square metres facility.¹⁸ Southern Shorthaul Railroad have recently begun providing rail services to Yennora from the Port for DP World.

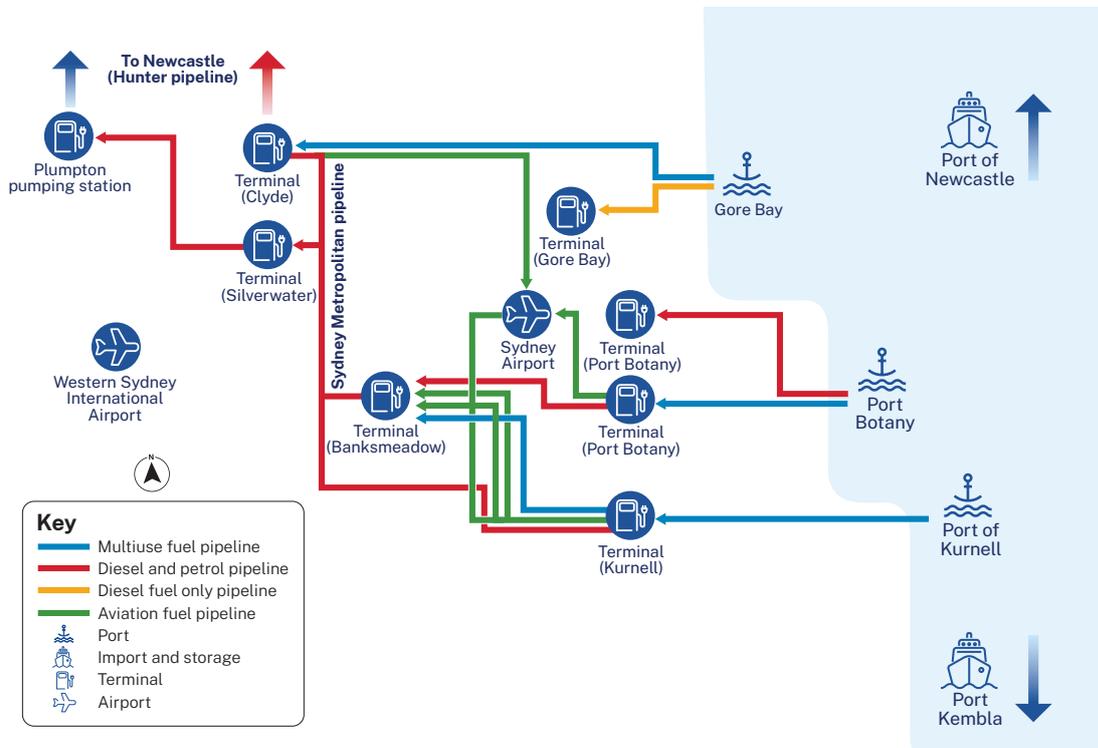
While most operators indicate that their terminals are open access (i.e. will service trains other than the terminal owner/operator's), Moorebank is the only terminal which has published open access protocols and procedures. At an operational level, Transport for NSW understands that all terminals have a single, predominant rail operator providing haulage services to and from Port Botany.

Sydney fuel supply chain

Of the bulk liquid imports that are transported via pipes, diesel and petrol are piped from Port Botany to storage facilities in Sydney via the Sydney Metropolitan Pipeline (SMP). Aviation fuel is piped to Sydney Airport (access to these pipelines is subject to agreement by the pipeline owners). Bulk liquids and gases, including LPG and ethylene are distributed via a dedicated pipeline to the nearby Botany Industrial Park. The Sydney-Newcastle Pipeline links bulk liquid import ports and storage facilities in Sydney to fuel terminals in Newcastle (Figure 2.3).

Pipelines are a critical component of NSW economic activity and as the economy decarbonises and the new Western Sydney Airport begins operations, they need further consideration (discussed further in Section 3).

Figure 2.3 Sydney fuel port terminal and pipeline supply chain



Source: Western Sydney International Airport¹⁹

¹⁸DP World, 2023, "DP World bolsters end-to-end logistics capabilities with expanded presence at Stockland's Yennora Distribution Centre"

¹⁹Western Sydney International Airport, 2023, Review of Aviation Fuel Supply Options May 2023, p.18

2.2.3 Port Kembla

Port Kembla is primarily a bulk port and has been privately operated by NSW Ports under a 99-year lease since 2013. The Port has a coal terminal and two grain terminals as well as terminals to handle roll on and roll off (RORO) vehicles, bulk liquids and other cargo.

Port Kembla currently handles all NSW motor vehicle imports in addition to dry bulk, bulk liquids and break-bulk commodities.

In 2022, Port Kembla handled:

- 12.8 million tonnes of exports, including 7.9 million tonnes of coal²⁰ and 2.58 million tonnes of grain²¹
- 5.1 million tonnes of imports, including 1.1 million tonnes²² of iron ore (for steel production) and 1 million tonnes of cement²³
- 0.37 million vehicles were imported²⁴ and 0.1 million tonnes of vehicle parts and accessories²⁵
- 2.3 million revenue tonnes of bulk liquids and break bulk.²⁶

Port Kembla handles a range of other dry bulk, bulk liquid and break-bulk imports and exports.

Road network

Road access to Port Kembla from the regions includes a steep descent on the escarpment and once in the Illawarra, is by Masters Road, Springhill Road and Five Islands Road, which link Port Kembla to the M1 and broader state motorway network (Figure 2.4). The Port currently receives an average of 800 trucks per day.²⁷

Rail network

Coal exported includes a mix of thermal and coking coal with around 60 per cent of this volume moved to port by rail. The rail mode

share for coal is influenced by a range of factors, including limited access to rail for many of the mine sites in the Illawarra region, lighter rail (which limits wagon loading to 75 tonnes) and network capacity constraints. On average, the coal terminal receives around seven trains and 420 trucks each day.²⁸

Port Kembla also receives bulk grain by both rail and road, stored and handled at the GrainCorp and Quattro Ports operated terminals.

Rail freight travelling to and from Port Kembla by the Illawarra Line is constrained by passenger rail services in the region. Freight services can be delayed for extended periods as passenger services are given priority.²⁹

2.2.4 Port of Newcastle

Newcastle Port is privately operated by the Port of Newcastle company under a 98-year lease that began in 2014. Two coal receipt facilities at the Port are operated by Port Waratah Coal Services and the Newcastle Coal Infrastructure Group. The Port also has two bulk grain export facilities and bulk liquids, dry bulk and other cargo facilities.

The Port of Newcastle has three bulk liquid import terminals operated by Stolthaven, Park Fuels and Australian Terminals Operations Management. The Port also handles project cargo including (at present) wind farm components that are imported and stored at the port before being transported by road.

Port of Newcastle has a substantial land area, the majority of which is used for port facilities including coal terminals, fuel storage and distribution facilities, silos for storing wheat,

²⁰ Transport for NSW, 2024, Open Data – Freight Data – Port Kembla

²¹ Transport for NSW, 2024, Open Data – Freight Data – Port Kembla

²² MariTrade, 2024, MariTrade - statistics

²³ Transport for NSW, 2024, Open Data – Freight Data – Port Kembla

²⁴ NSW Ports, 2022, Trade Reports 2022 – Port Kembla

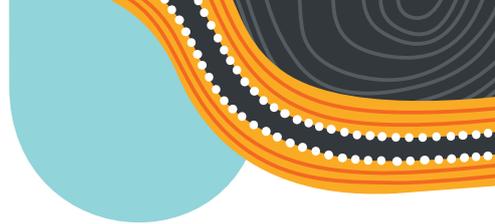
²⁵ Transport for NSW, 2024, Open Data – Freight Data – Port Kembla

²⁶ NSW Ports, 2022, Trade Reports 2022 – Port Kembla

²⁷ NSW Ports, 2023, NSW Ports 2063 our 40-year master plan for sustainable growth, Port Kembla road network, p.77

²⁸ Port Kembla Coal Terminal, 2024, About PKCT

²⁹ Infrastructure Australia 2016 Proposal: Rail Access to Port Kembla.



grains, cement and alumina and storage facilities for loose bulk cargo including mineral concentrates, fertiliser and magnetite. Land is also allocated to general industrial uses.

Newcastle is the largest coal export facility³⁰ in the world and its coal exports are around 48 per cent in value of all NSW exports.³¹ The Hunter Valley coal freight logistics chain is considered the most efficient freight logistics chain in NSW. Featuring rail receipt at mine sites and receipt and handling at port into vessels that is seamless in its operation. However, as the world decarbonises the coal trade is expected to decline, a trend that has already started.³²

In 2022, Port of Newcastle handled:

- 140.4 million tonnes of exports,³³ including 136 million tonnes³⁴ of coal and 3.2 million tonnes of bulk grain.³⁵ About a third of grain grown annually in NSW is exported (mostly in bulk), and Newcastle handles approximately half of this export task.
- 4.8 million tonnes of imports,³⁶ including 1 million tonnes of alumina and 0.48 million tonnes of fertiliser, the largest import dry bulk commodities by weight.
- 1.85 million tonnes of import fuels and 0.14 million tonnes of export ammonia (largest bulk liquids handled).
- 3,538 TEU of containerised goods³⁷ including 1,707 TEU exports and 1,831 TEU imports.

The Port also handled smaller volumes of other import and export dry bulk, liquid bulk and general cargo.³⁸

Road network

Port of Newcastle has direct access to the national heavy vehicle road network and dangerous goods route via Industrial Drive, providing interstate connectivity and links to major regions across the state. The broader

network of national highways is accessible from the M1 Pacific Motorway.

The Hunter Expressway between the M1 and Golden Highway provides an east-west 40-kilometre dual carriageway freeway connection to link with the Central West and Orana region including Dubbo and Parkes.

The New England Highway provides access to the New England Northwest region including Tamworth, Narrabri and Moree.

The A1 Pacific Highway to the north provides access to the North Coast and is the major highway link to Brisbane.

To the south the M1 provides road connectivity between Sydney, the Central Coast and Newcastle and existing freight distribution centre hubs that service the north and north-west Sydney and Central Coast markets (Figure 2.4).

Rail network

The Hunter Valley Coal Network (HVCN) is strictly defined for economic regulatory purposes and operates on a fully commercial basis (that is, access fees cover all operational and capital expenditure). It consists of a dedicated double track coal line between Port Waratah and Maitland, a shared double track line from Maitland to Muswellbrook and then a shared single track with passing loops, that runs north towards Gunnedah and west towards Ulan. The ARTC leases most of the HVCN from the NSW Government on a long-term basis and manages and operates the rail links to the Port of Newcastle.

As nearly all export coal moves to port via the HVCN, it supports axle loads up to 30 tonnes and train weights of up to 8,300 tonnes.³⁹

The predominance of coal and bulk grain exports result in an overall rail mode share for the Port of Newcastle of more than 95 per cent.⁴⁰

³⁰ Port of Newcastle 2023, Port Development Plan 2023-2028, p.35

³¹ Department of Foreign Affairs and Trade, 2023, NSW Factsheet 2022/23

³² Port of Newcastle 2023, Trade Report 2022, p.2

³³ Port of Newcastle 2023, Trade Report 2022, p.3

³⁴ Port of Newcastle 2023, Trade Report 2022, p.2

³⁵ Transport for NSW 2024, Open Data – Freight Data – Port of Newcastle

³⁶ Port of Newcastle, 2023, Trade Report 2022, p.3

³⁷ Port of Newcastle, 2023, Trade Report 2022, p.3

³⁸ General cargo includes break bulk, project cargo, heavy lift cargo - some examples include cargo in bags or bales, large machinery and wind turbines.

³⁹ State Environmental Planning Policies require that, for mines, most or all product is not to be moved by road, and most mines in NSW (in particular in the Hunter) have conditions of consent in their development approvals to use rail.

⁴⁰ Port of Newcastle, 2024, Rail Access

Figure 2.4 National Land Transport Network and NSW state road network



Source: Transport for NSW



Container freight at Port Botany

2.2.5 Role of the Country Regional Network (CRN) in supporting the export task

NSW's three primary ports are also supported by the CRN. The CRN is owned and almost entirely funded by the NSW Government. The network is managed and maintained by UGL Regional Linx under an operations and maintenance contract.

The CRN interfaces with rail networks (see Figure 2.5) providing direct connection to the ports:

- HVCN (ARTC) for Port of Newcastle
- MFN (ARTC) and the Sydney Trains managed network for Port Botany
- interstate track and Sydney Trains managed network for Port Kembla.

Most of the non-coal export freight for these ports are agricultural, predominantly grain, and have their origin points within areas serviced by the CRN.

Port Botany exports considerable amounts of containerised (as opposed to bulk) grain, reflecting that around 11 per cent⁴¹ of the total grain crop that is exported is now containerised. Almost 90 per cent of regional export containers that move to Port Botany are by rail⁴² from IMTs located in regional NSW.

Recent bumper harvests have seen some of the largest quantities of export bulk grain on record moved from the CRN through the Port of Newcastle and Port Kembla.⁴³ Port Kembla handled over 3.22 million tonnes in 2021 and 2.58 million tonnes in 2022.⁴⁴ Port of Newcastle handled 3.04 million tonnes in 2021 and 2.64 million tonnes in 2022.⁴⁵

Figure 2.5 NSW rail network



Source: Transport for NSW

⁴¹ <https://www.graingrowers.com.au/policy/grain-freight-and-supply-chains/graingrowers-container-port-policy>

⁴² See <https://www.nswports.com.au/keeping-nsws-economy-moving-paddock-port>

⁴³ Transport for NSW, 2024, Open Data – Freight Data – Port of Newcastle

⁴⁴ Transport for NSW, 2024, Open Data – Freight Data – Port Kembla

⁴⁵ Transport for NSW, 2024, Open Data – Freight Data – Port of Newcastle

However, the fact that the export grain task is generally made up of the surplus after domestic consumption is met presents transport challenges. This surplus, and so the transport task, can vary considerably from year to year depending on the growing conditions and freight origins. This variability and the lack of a consistent baseload level of traffic presents economic sustainability challenges for the western extremities of the CRN – the grain-only or ‘restricted’⁴⁶ lines.

The CRN varies significantly in terms of track capability. Axle weight limits vary from 25 tonne wagon axle loads on many of its main lines, down to 19 tonnes on some of the grain lines.

Differing track axle loads across the CRN can create challenges for efficient and seamless operations. These challenges increase considerably when rail operations need to traverse networks with different infrastructure managers, often with differing operating characteristics, engineering standards, operating systems and safe working rules.

This has been recognised as a nationally significant challenge, with the National Rail Action Plan⁴⁷ identifying that differing and legacy elements of rail development result in:⁴⁸

- limited flow of rail across networks due to technical, operational, regulatory and administrative inconsistencies
- difficult and costly interoperability because of the lack of integration across networks
- no incentive for local manufacturers to scale up or innovate as they serve small, fragmented markets.



Sydney Airport is
Australia's main air
freight import hub

2.2.6 Other port activity – Port Jackson, Gore Bay and Kurnell

Other port activities occur at Port Jackson and Gore Bay in Sydney Harbour, and at Kurnell in Botany Bay.

Port Jackson facilities include shipping berths at Glebe Island and White Bay that handle a small quantity of dry bulk shipping imports, operated by the Port Authority of New South Wales (a State-Owned Corporation). In 2022, the Port managed construction material imports, including cement and gypsum and handled bulk sugar and salt for chlorine manufactured for water treatment.⁴⁹

The Gore Bay Terminal is a fuel import terminal, operated by Viva Energy, which handles diesel, marine fuel oil, aviation fuel and gasoline.⁵⁰ Marine diesel and fuel oil are stored at the facility. Gasoline and aviation fuel are pumped to the Clyde Terminal in Western Sydney via a pipeline for storage and distribution. The Clyde Terminal has pipeline connection to Sydney Airport for aviation fuel supply and fuel products are transported by road from the adjacent Parramatta Terminal to destinations across metropolitan and regional NSW.⁵¹ Viva Energy is the operator of the Clyde and Parramatta Terminals.

In Botany Bay, the Kurnell Terminal is a fuel product import terminal operated by Ampol. This terminal is connected by pipeline to the Banksmeadow storage facility in the Port Botany precinct and Silverwater⁵² and provides aviation fuel to Sydney Airport. Connecting pipelines distribute petrol and diesel to storage facilities that are owned and operated by the SMP, a joint venture between Mobil and Ampol.⁵³

⁴⁶ The Restricted Network refers to a network of lines with light axle load limits that generally preclude the operation of mainline locomotives and rollingstock and is almost exclusively used for the haulage of bulk grain

⁴⁷ National Transport Commission 2020, National Rail Action Plan

⁴⁸ National Transport Commission 2020, National Rail Action Plan, p.5

⁴⁹ Port Authority of New South Wales, 2022, Sydney Harbour data.

⁵⁰ Viva Energy Australia, 2023, accessed 18 January 2024 at Gore Bay Terminal - Viva Energy Australia

⁵¹ Viva Energy Australia, 2023, accessed 18 January 2024 at Clyde & Parramatta Terminals - Viva Energy Australia

⁵² Exxon Mobil, 2023, accessed 18 January 2024 at Fuel terminals | ExxonMobil Australia

⁵³ Deloitte 2017, Western Sydney Airport Aviation Fuel Supply Corridor Options Report, p.35

2.2.7 Sydney Airport

While less significant in volume, air freight is essential for high value items that need to be moved within strict time limits. Sydney Airport handles half of Australia’s international air freight and a third of the domestic air freight task.⁵⁴

In 2022, Sydney Airport handled about 53 per cent of Australia’s international air freight exports (207,000 tonnes) which included perishables, machinery and pharmaceutical products headed to the United States, China and New Zealand.

Sydney Airport is Australia’s main air freight import hub and in 2022 it handled 55 per cent of international imports (220,000 tonnes), including electronics, machinery and apparel arriving from China, the United States, Hong Kong and

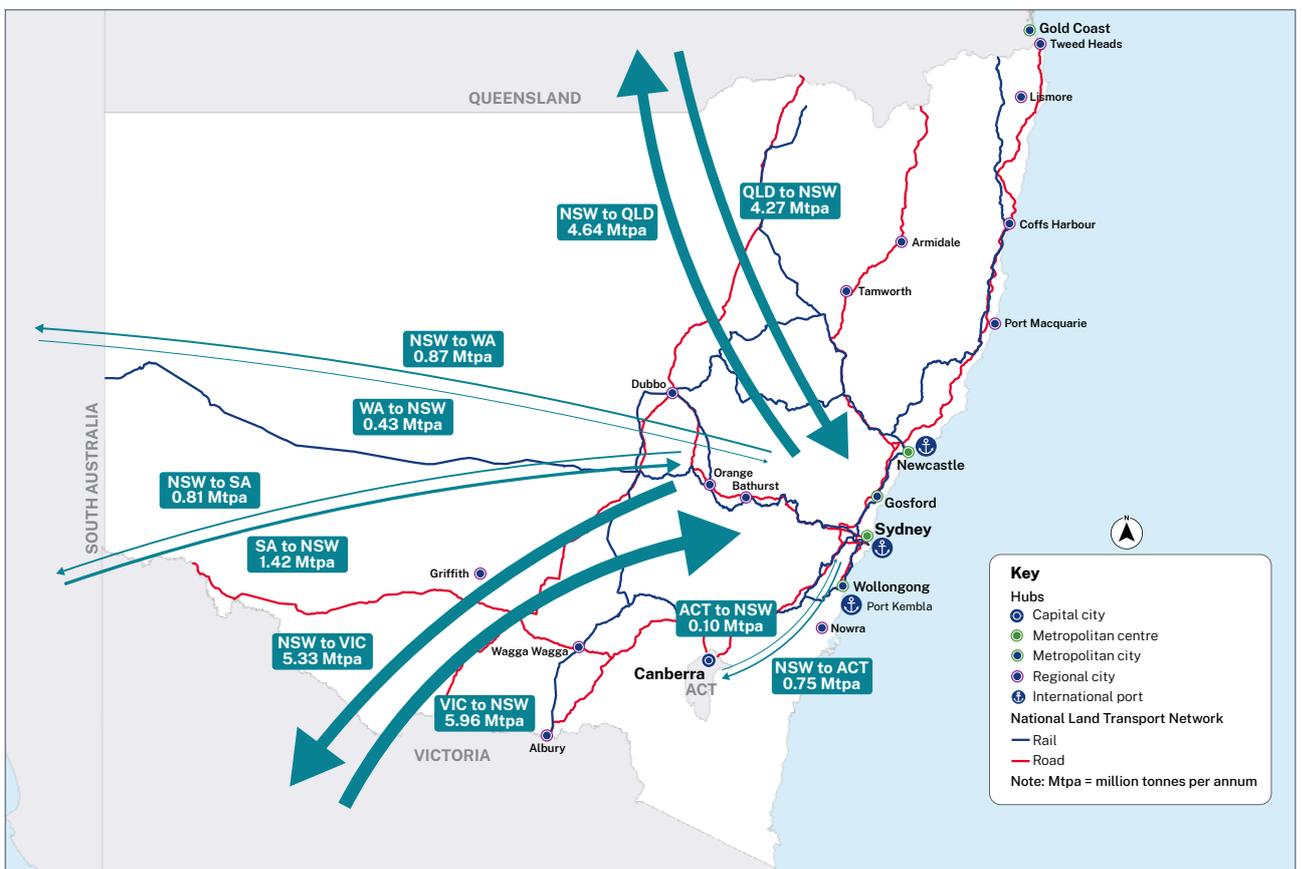
Singapore.⁵⁵ Passenger planes transport about 80 per cent of all air freight in the belly capacity of those aircraft. The remaining 20 per cent is carried in dedicated freight aircraft.⁵⁶

2.3 Interstate freight

The interstate task describes goods being moved between NSW and other states or territories. This section also considers transit freight, which describes movements that travel through NSW but start and end outside the state.

An overview of the interstate freight movements by volume per annum (excluding coal) is contained in Figure 2.6. While the transit freight task (5 million tonnes per annum) is small compared to interstate (24 million tonnes per annum) and intrastate movements (455 million

Figure 2.6 Interstate freight movements by volume (excluding coal)



Source: Transport for NSW Strategic Freight Model 2021

⁵⁴ Transport for NSW, 2018, NSW Freight and Ports Plan 2018-2023, p.29

⁵⁵ Infrastructure Partnerships Australia, 2023, 2023 International Airfreight Indicator, p.6

⁵⁶ Sydney Airport Corporation Limited, 2019, Sydney Airport Masterplan 2039, p.26

tonnes per annum),⁵⁷ the NSW road and rail network is critical to the efficiency of this task.

Most interstate movements are non-bulk freight and the most significant volumes are moved between the three east coast capitals – Sydney, Melbourne and Brisbane.

Road carries the greatest share of this interstate task, estimated at around 80 per cent compared with rail.⁵⁸

Rail still plays a significant role, though this tends to be more pronounced for longer hauls such as Sydney to Perth, and for the movement of bulk or specialised goods such as steel and grain. Similarly, for longer distance movements, shipping is also more competitive.

The role of coastal shipping is limited by law and regulations of maritime cabotage. This is a federal responsibility. However, there is still a modest freight task moved by ship between NSW and other states particularly Western Australia and it is estimated at 9.5 million tonnes.⁵⁹

2.3.1 Interstate road task

The NSW interstate road network forms part of the National Land Transport Network which is a network of nationally important road and rail infrastructure links and their intermodal connections. Roads categorised under this network help prioritise planning and investment decisions.

The Hume and the Pacific highways are by far the highest quality corridors in the interstate road network. They are fully duplicated, enabling road operators to complete inter-capital journeys in about 10 to 11 hours. This gives road a significant competitive advantage over rail for these movements. The high quality of these corridors also means they can support newer, innovative higher productivity vehicles.

In addition, a traffic light-free route through metropolitan Sydney, achieved through the duplication of the Hume and the Pacific highways and opening of the NorthConnex tunnel, has increased the competitiveness of road for the transit task between Melbourne and Brisbane. Although the distance is marginally longer than travelling via the Newell, the journey time is now equivalent. Travelling via Sydney also offers additional benefits for road transport operators including:

- higher quality roads reducing fuel consumption and vehicle wear and tear
- better access to labour (for operators running driver changeovers)
- better opportunities to optimise vehicle load utilisation, especially for operators with Sydney depots.

Outside the Hume and Pacific highways interstate road corridors in NSW are generally single lane. While the quality of the infrastructure is reasonable for the task that it supports and largely supports the use of newer, higher productivity vehicles, these corridors are less resilient to extreme weather events than the Hume and Pacific highways.

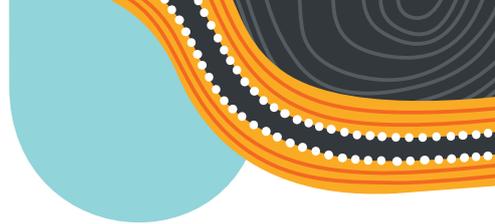
The interstate road task, in particular the inter-capital task, is largely non-bulk. In addition, as there is no requirement for intermodal transfer, the freight includes containers and palletised loads. In the case of smaller, lighter consignments such as parcel freight they are hand loaded.

Bulk road haulage does still occur for commodities such as grains, stockfeed, fuel, bitumen, aggregates and mining equipment, although these are more commonly movements from regional NSW to other states.

⁵⁷ Transport for NSW, Strategic Freight Model 2021

⁵⁸ Transport for NSW, Strategic Freight Model 2021

⁵⁹ BITRE, 2023, Australian sea freight 2020-21



2.3.2 Interstate rail task

Most of the rail lines that form part of the National Land Transport Network in NSW are managed by the ARTC. The three main interstate corridors are:

- the main south –links Sydney with Melbourne, via Wagga
- the main north –links Sydney with Brisbane via Grafton
- the main west –links Sydney with Adelaide and Perth/Darwin.

Most parts of the network support 25 tonnes wagon axle loads, though length and loading gauge varies. The main west line section from Parkes to Broken Hill is the least constrained, allowing 1,800 metre double stacked trains. The north and south lines can only accommodate single stacked trains, with the main north line also limited to 1,500 metre maximum lengths and 23 tonne wagon axle loads north of Stratford Junction (near Gloucester).⁶⁰

Interstate rail freight also relies on sections of the Sydney Trains managed network. Trains heading north from Sydney use the shared corridor between Strathfield and Newcastle. Similarly, some services heading west to Adelaide and Perth also move via the shared network over the Blue Mountains to Parkes (though more commonly these services are routed on the ARTC network via Cootamundra). Finally, some interstate movements from regional areas in NSW start their journeys on the CRN.⁶¹

This interstate network is supported by key interstate IMTs, both in metropolitan Sydney and regionally. Currently, the main interstate terminal in Sydney is located at Chullora and operated by Pacific National. This site, a former FreightCorp site, has significant constraints in terms of siding length and loading efficiency. It is, however, located on the MFN, providing good access to the ARTC interstate network that is unconstrained by commuter passenger services.

Additional interstate terminal capacity is coming online in Sydney. Aurizon recently started operations at Glenlee, a site in the south-west of Sydney which links directly to the ARTC's interstate network.⁶² Most relevantly, the interstate terminal at the National Intermodal Company's Moorebank site opened in early 2024.⁶³ This will provide a significant improvement in efficiency and capacity for interstate rail, offering 900 metre sidings, the ability to accommodate 1,800 metre trains and direct access to the ARTC's Southern Sydney Freight Line.⁶⁴

Regionally, Parkes is a key hub for interstate rail traffic, in particular domestic non-bulk movements. It is the starting point for the operations of double stacked trains west to Adelaide and Perth. It is at the junction with the Inland Rail corridor (currently under construction) and also located on the Newell Highway. Currently, only Pacific National operates a terminal at Parkes, however the NSW Government has set aside 4,800 hectares of land as a Special Activation Precinct and National Logistics Hub to support future terminal development and growth in rail freight.⁶⁵

There are several other key interstate IMTs, such as Bomen (near Wagga Wagga) and Ettamogah (near Albury). These sites tend to focus more on interstate export movements – that is, product moving from NSW to ports in other states for export – though they do also support domestic interstate movements.

The interstate rail task is varied, comprising both non-bulk and specialised/bulk movements. For non-bulk inter-capital movements to Melbourne and Brisbane, rail faces significant constraints in its ability to compete with road. The transit time along both these rail corridors is around 16 to 18 hours, at times longer. In addition, the extra time required to load and unload and to complete the last journey by road at each end, means rail cannot offer travel times comparable to road. In particular, it cannot offer the overnight service that road can.

⁶⁰ ARTC Route Access Standards General Information

⁶¹ See Figure 2.5 NSW rail network

⁶² Aurizon, 2023, Aurizon launches east coast container service

⁶³ Prime Minister of Australia, media release, April 2024 www.pm.gov.au/media/opening-moorebank-interstate-terminal-fulfils-long-term-vision

⁶⁴ Moorebank Intermodal Terminal, 2024, Interstate Terminal

⁶⁵ NSW Government, 2024, Parkes Special Activation Precinct

As a result, although rail has seen some growth on these corridors over the last decade, mainly between Sydney and Melbourne, the modal share along the North South Corridor is still strongly dominated by road.⁶⁶

Rail competitiveness in the non-bulk task improves with distance. Between Melbourne and Brisbane rail is estimated to have just under 30 per cent modal share.⁶⁷ For Sydney to Perth traffic it dominates with closer to 80 per cent mode share.⁶⁸ Inland Rail between Beveridge Terminal in Melbourne and Parkes in NSW is anticipated to be completed by 2027, with a possibility of further extension to Narromine after that and then beyond to Toowoomba and Brisbane's outskirts.

Rail also competes effectively with road in specialised and bulk tasks. This is particularly true for interstate movements to Victoria. There are several key commodities that boost the rail mode share for this corridor, including:

- steel from Port Kembla to Melbourne
- bulk grain from southwest NSW moving to export through Victorian ports
- wine from southwest NSW moving to export through Port of Melbourne

- paper product from southwest NSW moving to export through Port of Melbourne.

2.4 Intrastate, major freight flows within NSW (excluding coal)

Intrastate movements of freight, that is movements end to end within NSW, are generally:

- the movement of goods produced and consumed within the state (eg. grain to feedlot or coal to power station)
- the redistribution of goods that have been imported or are being exported via a distribution centre or other handling facility or terminal (e.g. goods imported and unpacked from a container to then be transported within the state from distribution centre to store).

As an import-dominant economy, the receipt and distribution of goods is a significant element of the freight and logistics task in NSW.

The major freight flows within NSW occur in the Greater Sydney region (Sydney City, Botany and Parramatta) and regional NSW, mainly the Illawarra, Hunter Valley, Newcastle and the



Cotton bales ready for loading onto truck

⁶⁶ Transport for NSW, Strategic Freight Model 2021

⁶⁷ ARTC, 2020, Business Case Briefing Paper 2, Business case assumptions and key findings, p.2

⁶⁸ Transport for NSW, Strategic Freight Model 2021

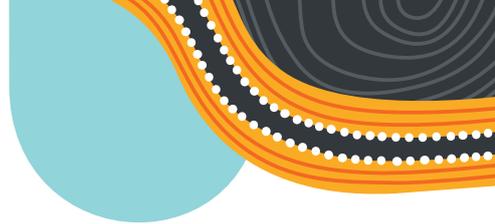
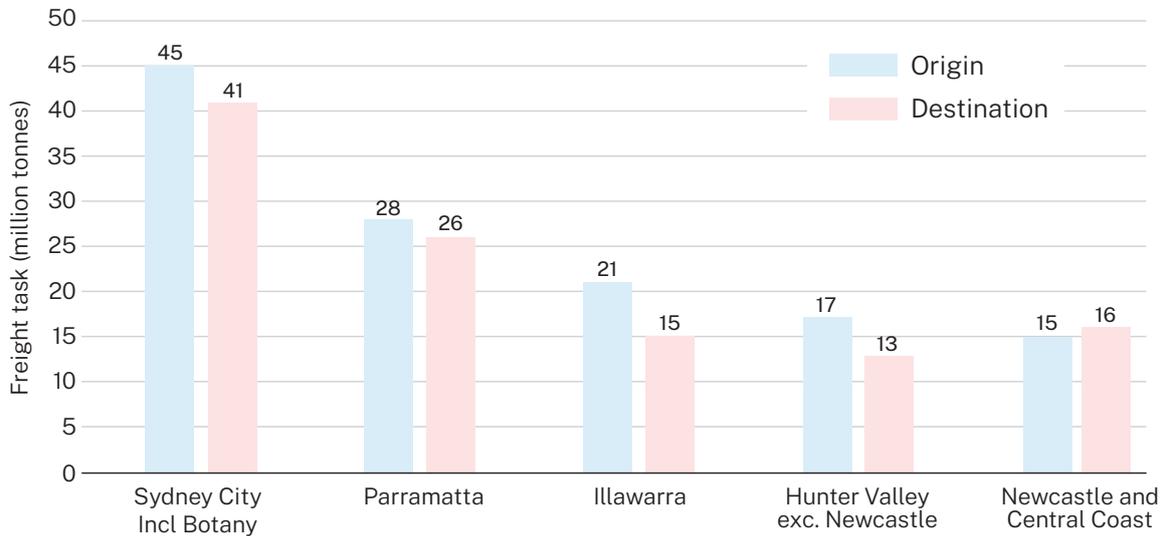


Figure 2.7 Key intrastate freight volumes (excluding coal)



Source: Transport for NSW Strategic Freight Model 2021

Central Coast.⁶⁹ This is not surprising given the distribution of the population. Figure 2.7 shows origin and destination freight volumes for these areas.

Greater Sydney

Most of the freight movements in Sydney City and Port Botany are containers, reflecting the location of the Port within this region. Other components include a wide variety of manufactured goods (e.g. equipment, chemicals and food), fuel, construction materials (aggregate, sand and cement) and consumer products. About 70 per cent of the import or empty containers are distributed to either western or south-western Sydney.⁷⁰

Parramatta

In Parramatta, more than 50 million tonnes of freight is moved across the region annually. Key commodities originating from Parramatta include

machinery and equipment and fuel due to its fuel storage facilities and fuel pipeline terminals based at Parramatta and its surrounds (including Clyde and Silverwater). Commodities arriving at Parramatta, as a destination, include containers, aggregate and sand.⁷¹

Regional NSW

Agriculture is the largest category of commodities moved in and out of regional NSW (Figure 2.8) with grain being the single biggest component. There is limited containerised freight except for commodities being moved for export.

Illawarra

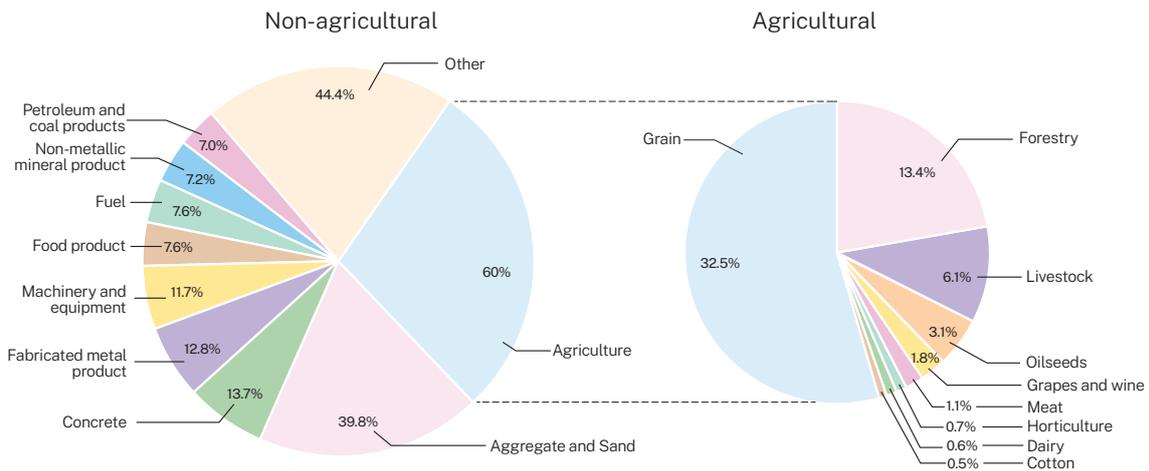
In the Illawarra, over 35 million tonnes of freight is moved across the region annually. Key commodities originating from and arriving into the region include aggregate and sand and fabricated metals.

⁶⁹ The freight hubs captured in Greater Sydney are at an SA3 (LGA) level whereas regional is captured at a broader SA4 level

⁷⁰ Transport for NSW, Strategic Freight Model 2021

⁷¹ Transport for NSW, Strategic Freight Model 2021

Figure 2.8 Overview of commodity volumes (million tonnes) in regional NSW (excluding construction and manufactures) 2021



Source: Transport for NSW Strategic Freight Model 2021

Other key commodities originating from the Illawarra include steel and grain. Steel is sent either interstate (Victoria, Queensland, Western Australia, South Australia) or to Greater Sydney mostly by rail (58 per cent). In 2021, 1.3 million tonnes of grain arrived from the Murray, Central West and Riverina regions entirely by rail, before being transported to Port Kembla⁷² for export.

Newcastle and Central Coast

About 30 million tonnes of freight is moved in and out of the Newcastle and Central Coast region annually.⁷³ Key commodities originating from Newcastle and Central Coast region include fuel as well as aggregate and sand, which either stays within the region or is sent to the other regional centres along the North Coast. Only a minority of freight is moved to Greater Sydney region.

Another key commodity transported in the region includes grain, which originates from the Far West and Orana, New England and Northwest and arrives into Port of Newcastle, predominantly by rail due to the longer distances travelled.

Hunter Valley excluding Newcastle

About 30 million tonnes of freight is moved in and out of the Hunter Valley annually.⁷⁴ Excluding coal in the Hunter Valley and freight exported at the Port of Newcastle, the commodity movements for the Hunter Valley focus on the movement of petroleum and coal products, which is mostly sent to Greater Sydney. The other key commodities include aggregate and sand which mostly stay within the region.



Livestock in Tamworth

⁷² Transport for NSW, Strategic Freight Model, 2021

⁷³ Transport for NSW, Strategic Freight Model, 2021

⁷⁴ Transport for NSW, Strategic Freight Model, 2021

2.5 Government policy and regulation

Virtually all components of the freight logistics chain are regulated as part of government policy. Significant areas of regulation that apply to the freight industry include:

- safety
- network access
- land use planning (the placement and operations of terminals and depots – at first by planning decisions, at both state and local government levels)
- other matters such as noise and permitted times of operations.

2.5.1 Road network

The current regulation of heavy vehicle access to the road network in NSW falls under the Heavy Vehicle National Law (HVNL). This national approach has been adopted by all states and territories excluding Western Australia and the Northern Territory. The HVNL and establishment of the National Heavy Vehicle Regulator (NHVR) delivers a national approach to regulating the use of heavy vehicles on roads with the objective of creating a safe and productive heavy vehicle industry.

Under the HVNL, access to the road network for Restricted Access Vehicles is the responsibility of the road managers. In NSW, the road managers are Transport for NSW for state roads and local councils for the local road network. The local road network is about 91 per cent of the total road network in NSW by length.

The 'NSW Heavy Vehicle Access Policy' sets out the NSW Government's policy concerning road access, with the objective to optimise safety, sustainability and productivity. The policy is implemented via national notices, schemes and permits issued by the NHVR for both state and local roads.

The 'National Freight and Supply Chain Strategy' identified that the freight sector has suffered from inconsistent decision-making, lack of certainty and inconsistent rules across borders. A lack of consistency in the consideration of freight in decision-making has compromised the ability of governments and industry to balance the economic benefits of moving freight efficiently with social and environmental outcomes. A lack of certainty inhibits the making of long-term investment decisions. A lack of consistent regulation across jurisdictions, creates confusion and duplication, resulting in costs for operators.

It is recognised that while access to the road network is essential for the efficient movement of freight, road managers face significant challenges balancing productivity with road safety, infrastructure capacity, environmental goals, public amenity and network planning and investment priorities. At an infrastructure level the road network should be built for efficient use, at the standard needed for the traffic on that route.

In April 2023, the 'National Access Framework for Heavy Vehicles' was adopted by infrastructure and transport agencies nationally. This is to reduce the impact of inconsistency in decision-making and provide increased certainty for industry and harmonised rules across borders.

The 'National Access Framework for Heavy Vehicles' is based on principles, actions, partnerships and reporting. The set of six principles below reflect the role road managers play in providing safe and efficient access for heavy vehicles on the road network:

- access should be enabled unless by exception
- foster collaboration and coordination between state and local road managers, third parties and industry
- harmonise access decision-making practices while encouraging innovation
- encourage the use of safe, productive and sustainable vehicles
- automate access assessment decision-making
- facilitate the exchange of information and open data.

2.5.2 Rail network

Rail network managers provide access in line with their relevant rail access frameworks, with the various approaches guided by the National Access Regime (Part IIIA of the *Competition and Consumer Act [Cth] 2010*).

The NSW Rail Access Undertaking applies to NSW rail networks and managers including:

- Metropolitan Rail Network (MRN) managed by Sydney Trains
- MFN managed by ARTC
- CRN managed by UGL Regional Linx (for Transport for NSW).

ARTC manages the key interstate rail corridors, except those that are part of Sydney Trains' managed network, under its Interstate Access Undertaking. It also manages the HVCN, with access provided under the ARTC's Hunter Valley Access Undertaking.

For the congested MRN, the Standard Working Timetable is determined by Transport for NSW, with detailed timetable development now transitioning back to Sydney Trains. Transport for NSW also sets the outcome specifications for passenger and freight services to guide Sydney Trains' development of the timetable.

Rail safety, governed by the Rail Safety National Law, is regulated by the Office of the National Rail Safety Regulator. In addition, the Australian Transport Safety Bureau and the Office of Transport Safety Investigations have a role in investigating safety incidents and accidents. Rail Infrastructure Managers (RIMs) manage safety through access conditions such as approval of rollingstock to operate on their networks.

There are also points of cross-over regulation, such as heavy vehicle access on roads over rail infrastructure (e.g. crossings) where road and rail regulations intersect.

2.5.3 Ports

The private port operators, NSW Ports (Port Botany and Port Kembla) and the Port of Newcastle, are partly regulated and are subject to the terms of their leases. These leases and relevant legislation require the operators to manage the ports in an economically efficient way and ensure investment in port infrastructure.

The port operators mainly lease stevedoring terminals at the ports to private operators. In some instances, the port operators directly operate terminals while others are privately owned and operated.

The Port Authority, a State-Owned Corporation, manages and operates the ports at Glebe Island and White Bay (Sydney Harbour), Eden and Yamba and has the safety role of Harbour Master at all NSW ports.

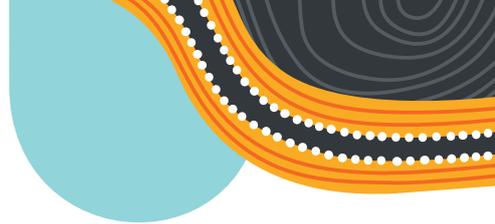
The Gore Bay and Kurnell bulk liquid terminals are privately operated by Viva Energy and Ampol.

Port Botany is also subject to the PBLIS, administered by Transport for NSW, which regulates landside servicing at the Port Botany container stevedore terminals.

Under PBLIS requirements, primarily applied to truck servicing, detailed rules are set for how the landside interface operates (for example booking of slots, number of slots per day and cancellation terms).

Stevedores and truck operators pay penalties to each other when PBLIS rules are not met. For example, failure to service a truck within the required truck turnaround time will see a stevedore pay a penalty to a trucking operator. Similarly, failure to adhere to a booking window will see a trucking operator pay a penalty to the stevedore.

Servicing rules are also regulated for stevedores and rail operators at the port rail interface.



2.5.4 Air

Airport regulation is the responsibility of the Australian Government. State and local governments do have an influence over the airport freight logistics chain through the road connections to the airports and the availability of terminals and depots around the airport.

In addition, key access roads (e.g., Airport Drive, Mascot) are privately managed by Sydney Airport Corporation and heavy vehicle access is impacted by the regulatory standards of the Civil Aviation Safety Authority.

2.5.5 Charging and funding

Heavy vehicle charging is comprised of a road user charge and a regulatory component, collected through state vehicle registration, as well as a component collected by the Commonwealth through the fuel excise. In addition, heavy vehicles pay tolls on Sydney's motorways with a truck multiplier, currently designed to recover the cost of infrastructure investment.

Despite these charging arrangements, road investment including new builds, upgrades and maintenance, are independently funded based on budget and program allocations.

The NSW Government provides a significant source of funding for road and rail networks. In regional and outer metropolitan areas, \$1.5 billion in funding is being provided in 2023 / 2024 to support council infrastructure. This includes the Regional Road Block Grant, the Fixing Local Roads and Country Bridges programs, the Regional Roads and Transport Recovery Package and the Railway Level Crossings program. There are also Commonwealth funded programs such as the Heavy Vehicle Safety and Productivity

Program. Transport for NSW also works with councils to administer disaster recovery funding and is supporting regional councils through the \$390 million Regional Emergency Road Repair Fund and a range of projects funded through the \$334 million Regional Roads Fund.

Rail access charges are set by the infrastructure owner, in line with the relevant rail access undertaking. For the NSW Rail Access Undertaking, pricing principles are included which set a floor and ceiling test. Access charges should fall within this band, with the Independent Pricing and Regulatory Tribunal (IPART) assessing compliance. To meet the floor test, access charges must recover the direct cost of access seekers using the network. This includes recovering the day-to-day costs of providing access but excludes a return on investment. Meeting the ceiling test requires that access charges should not exceed the full economic cost of providing access, which allows for a rate of return but not for monopoly profits.⁷⁵

Port charges include charges applied by port operators (NSW Ports, Port of Newcastle and Port Authority) for services such as navigation and wharfage. These are subject to light touch price monitoring regulation under the *Ports and Maritime Administration Act (PAMA) 1995*.

Stevedore charges are charges applied by stevedore terminals for terminal related services such as access, administration and infrastructure fees. These are regulated for rail and storage in some instances under PBLIS, but otherwise are not regulated beyond general commercial law.

⁷⁵ See - <https://www.ipart.nsw.gov.au/Home/Industries/Transport/Rail-Access/Rail-Access-Compliance>



Aerial view of Port Botany

3 The changing freight task



3 The changing freight task



The freight task in the future will be influenced by major factors, including:

- population growth locations and the changing workforce
- climate change and related policies
- changes in technology.

3.1 A growing and changing population

The first major, and arguably most significant, driver of change in the future freight sector is population growth.

3.1.1 General pattern of growth

Population growth is a primary driver of economic growth. Higher population generally results in higher consumption and business activity, which in turn increases the demand for freight services.

The population of NSW is about 8.2 million people. By 2041, this is projected to increase by over 20 per cent to 9.9 million⁷⁶ and by 2061 to 11.5 million.⁷⁷ The increase is concentrated in the Greater Sydney region where it is expected to be over 18 per cent by 2041, especially in and around Western Sydney. In regional NSW, growth is more modest and concentrated in the Hunter-Newcastle, Illawarra-Shoalhaven areas.

As indicated in Figure 3.1, expectations are by 2041:

- Sydney's population will increase from 5 million to about 6.1 million people with variances across the metropolitan areas, including:
 - about a 30 per cent increase in the Central River and Western Parklands cities, representing 490,000 and 370,000 people respectively (the Western Parkland City

stretches from the Blue Mountains to Fairfield and the Hawkesbury to Wollondilly; the Central River City stretches from The Hills to the Georges River and from Blacktown to Canterbury-Bankstown).

- about a 13 per cent increase representing 290,000 people in the Eastern Harbour City (stretches from Northern Beaches to Bayside and Strathfield to Waverley and the Sutherland Shire). Although there is less growth, this will remain the most populous region.

The regional population is set to increase to around 3.7 million people and become more concentrated in larger regional centres, such as Albury, Bathurst and Port Macquarie.

There is also about a 30 per cent increase in Lower Hunter-Greater Newcastle and Illawarra-Shoalhaven cities, representing 170,000 and 126,000 people respectively (Figure 3.1).

The rest of the state is projected to see a more modest increase of around 185,000 people, or 10 per cent more than current levels.

Many smaller towns and regions are not expected to see significant growth and in some cases may experience a reduction in the number of residents.

These increases in population, living standards and freight volumes are expected to continue beyond 2041. A related further increase in demand for freight services is projected.



Population growth drives increases in demand for freight

⁷⁶ NSW Department of Planning, Housing and Infrastructure, 2022, NSW Common Planning Assumption Projections: Metropolitan or Regional Projections

⁷⁷ NSW Treasury, 2021, 2021-22 NSW Intergenerational Report

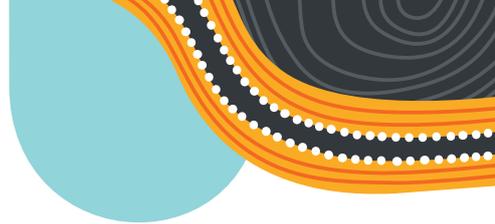
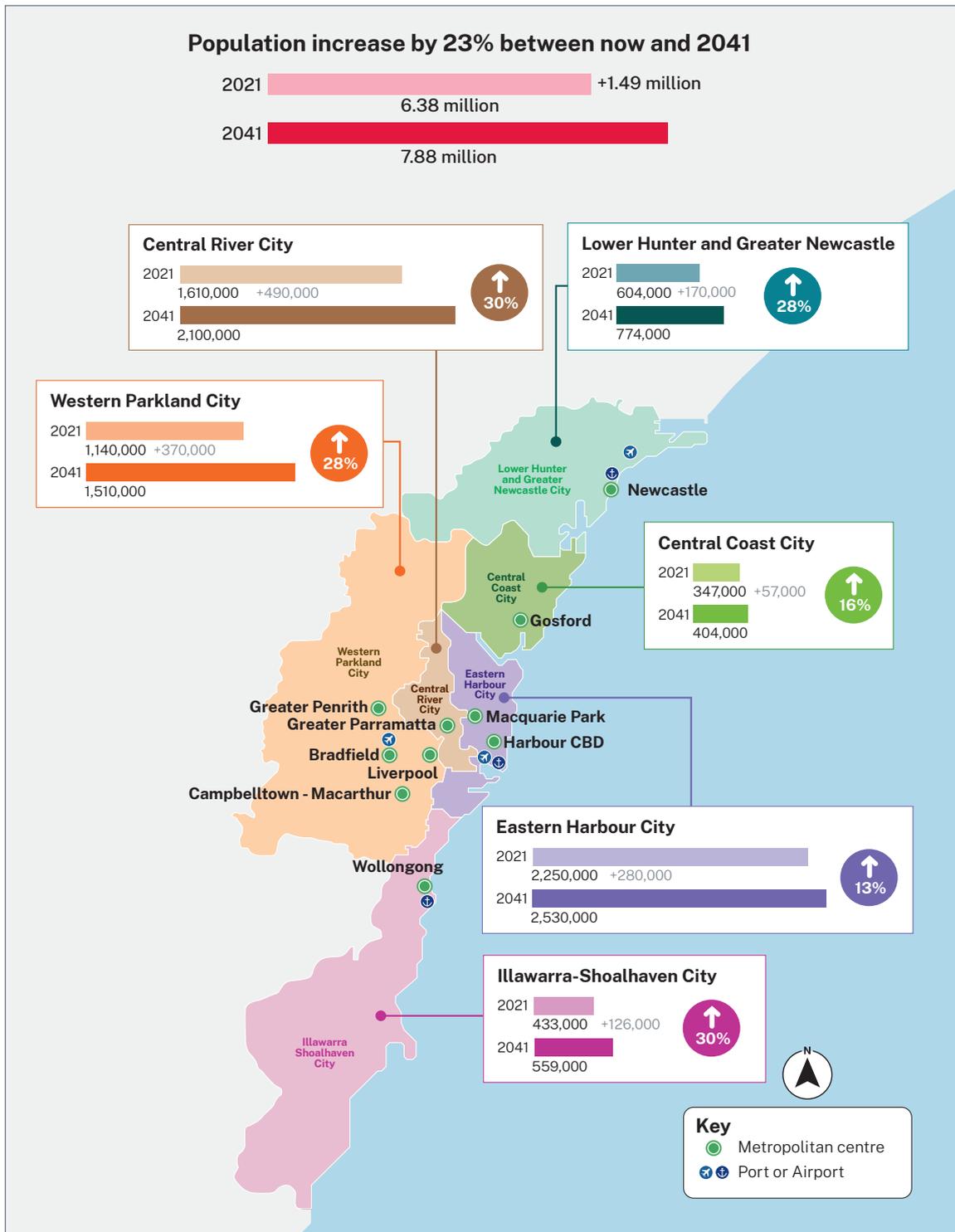


Figure 3.1 Projected population growth across the six cities region of Sydney to 2041



Source: Transport for NSW Strategic Freight Model 2021

Based on population and living standard projections, freight is forecast to increase compared to 2021 volumes (Figure 3.2) in locations by:

- 18 per cent (2031) and 26 per cent (2041), NSW
 - 23 (2031) and 41 per cent (2041), Greater Sydney
 - 22 per cent (2031) and 50 per cent (2041), Western Sydney
 - 14 per cent (2031 and 2041), regional NSW –with an expected decline in coming decades.

While there is an expected decline in coal export forecasts, other major regional commodities such as grain, beef, steel and cotton are expected to increase by about 25 per cent by 2041 compared to 2021 volumes.

The pattern of consumption is also projected to change with an increased demand for “publicly provided or funded services such as care and support services, as well as tourism, leisure, and time-saving services”.⁷⁸ This effect does not limit expected freight service demand.

The impact of other influences is difficult to forecast because the economy is undergoing a major transition as it decarbonises.

New industry based on relatively cheap renewable energy may expand and the mining of minerals in demand to assist in that transition may also commence.

Freight increases of this magnitude will affect every freight logistics chain. These increases will:

- put pressure on the demand for capacity in existing corridors including ports
- increase demand for terminals and depots
- increase the need for industrial land
- require expansion to new corridors.

The increase in freight demand, driven by population growth, is expected to be intense in Greater Sydney, particularly around the expanding Western Sydney areas of the Central River and Western Parklands cities. This will require more efficient operation of existing freight logistics chains, including greater productivity in the use of the infrastructure already in place.

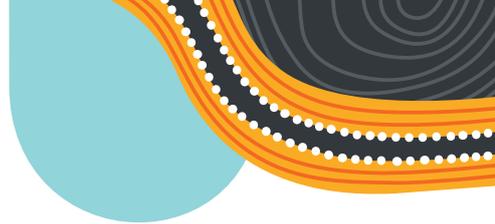
Figure 3.2 NSW freight volume projections between 2021 and 2041



Note: Percentage changes are compared to the 2021 baseline

Source: Transport for NSW Strategic Freight Model 2021

⁷⁸ Australian Treasury, 2023, 2023 Intergenerational Report, p.13



In addition, there will be demand for more industrial land in the growth areas, for terminals, depots, warehousing and facilities, to accommodate the type of freight moving along the logistics chain. In several instances, this implies the expansion of road and rail corridors and consideration of how to handle the type of freight being carried -containers, bulk or otherwise.

3.1.2 Industrial lands and land use planning

Competing demands for land use is a key challenge for Sydney. For logistics chains, proximity to the source of the goods, workforce and end customer influences efficiency and cost effectiveness. As such, industrial lands and freight corridors must be strategically planned to enable the coordination of functions, land uses and infrastructure and mitigation of community impacts.

The Greater Cities Commission's (GCC) 'Review of Industrial Lands Policy' found that industrial land location and supply is a fundamental aspect of an efficient freight supply chain.⁷⁹ A freight corridor will not be efficient and cost effective unless it is linked to freight handling facilities at terminals, depots and warehouses.

A Productivity Commission case study of commercial land use zoning found that regulatory intervention may be warranted in cases where there is a risk that leaving the allocation of land to the market would entrench poor land use outcomes.⁸⁰

With the forecast growth of metropolitan and regional cities, there is an increasing need for industrial land to carry out freight related activity. The increasing pressure on available land for other uses and zoning adds to the importance of this need. Without an efficient freight logistics chain, costs escalate for consumers and goods may not even be available locally.



Aerial view of Defence National Storage Distribution in Sydney

⁷⁹ Greater Cities Commission, 2022, Industrial Lands 'Retain and Manage' Policy Review, p.11

⁸⁰ Productivity Commission, 2020, Victoria's Commercial Land Use Zoning –Productivity Reform Case Study, p.6,38



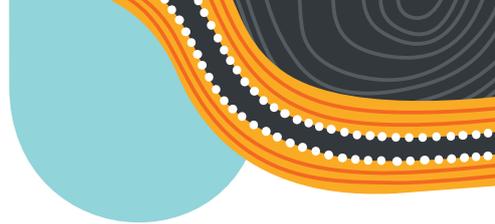
Aerial view of distribution centres at Eastern Creek in Western Sydney

Increases in population, living standards and freight volumes means industrial lands and freight networks must be included in land use and development planning. This will support the population, businesses and industries of a growing state.

Figure 3.1 demonstrates areas in need of planning attention and where more future freight services are expected. To support population growth and liveable cities, it is essential that freight considerations are embedded in the strategic land use planning for each area but also viewed across the city. As with considerations for open spaces and other supporting infrastructure, such as access to education and healthcare, the movement of freight to support growing populations and business activities is part of placemaking. This means a plan for both industrial land and freight corridors must be put in place and adhered to for future needs and benefits.

The Western Sydney Freight Line proposal recognises the need for a dedicated rail line to transport freight from Port Botany directly to a strategic location in Western Sydney, such as the Mamre Road Industrial Precinct in Erskine Park.

It is now established that the best option for increasing the use of rail in the short-haul container logistics supply chain is the co-location of supporting activities, such as warehousing and distribution, directly onsite at the IMT locations. This arrangement needs to be part of industrial land planning in the future. It offers many advantages, including seamless integration of operations, reduced transfer times from rail to road and improved efficiency in cargo handling. The approach eliminates the need for additional trucking between IMTs and external warehouses or distribution centres, minimising costs and enhancing operational efficiency. This has become the standard approach for the development of new IMTs such as Moorebank.



In cases where co-location of complementary activities with IMTs is not feasible, the next best option to support a competitive rail service is to locate these activities near IMTs. This also needs to be considered in strategic land use planning. Proximity still offers advantages in terms of reduced transport costs and quicker delivery times, as well as higher utilisation of assets for the final road pick-up and delivery leg. This can allow the intermodal trip (rail/road) to offer a competitive alternative to direct road haulage from Port Botany to the final delivery destination of the container.

However, the competitiveness of rail likely dissipates the further the final destination is from the IMT and the road pick-up and delivery leg increases. This is known as distance decay. As the distance from the IMT increases, so do logistical challenges such as increased transport costs, longer delivery times and potential disruptions. So, while proximity to an IMT provides benefits, there is likely to be a gradual decline in these benefits as the distance between the IMT and the final delivery destination grows.

Where freight rail does not exist and/or the cost of the second transport leg for imported containers (from a rail based IMT to the end destination) is too great, road-based intermodal freight terminals, strategically located close to importers and exporters, can improve productivity and reduce community amenity impact. These road-based freight terminals offer an opportunity to connect higher productivity vehicles, shuttling container freight to and from the port with local, fit-for-purpose delivery vehicles, servicing local importers and exporters. Road and rail based IMTs will play an essential role in the management of Sydney's growing freight task.

Western Sydney Airport is set to begin operations in mid-2026. The airport, intended to operate without curfews, is expected to see dedicated freight aircraft that will take advantage of the strategic location and operating conditions. The airport is being developed with dedicated and advanced freight handling and logistics facilities on site. It is recognised that 80 per cent of freight is moved in passenger planes and so a significant proportion of air freight will continue to move



Aerial view of Yennora distribution centre

through Sydney Airport. The fuel requirement for the airport operations, particularly aviation fuel, will initially be moved to the airport by road. Planning work has been carried out to develop a pipeline when volumes warrant such investment. Planning for the safe and sustainable transport of aviation fuel from Port Botany to Western Sydney Airport by road will need to be achieved for the foreseeable future.

Accompanying the Western Sydney Airport is the planned Aerotropolis, an employment precinct targeting high skill jobs across the aerospace and defence, manufacturing, healthcare, freight and logistics, agribusiness, education and research industries. Depending on the businesses and activities at the Aerotropolis, it is expected that this location may become a new freight generator and planning is required accordingly.

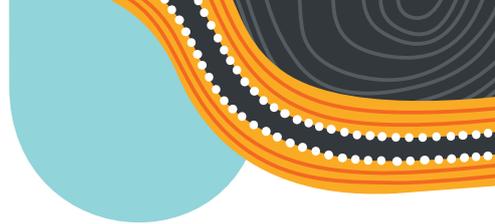
3.1.3 Future containerised freight

Another major impact of population growth will be the increase in container traffic, particularly in Greater Sydney, where the population increase is concentrated. The forecast of import containers distributed across Sydney indicates growth overall and the concentration of that growth in Western Sydney.

There will continue to be a stable increase in the amount of freight required to be moved across NSW. While the decline of coal will have an impact on the total freight volumes, particularly those moving on rail, containerised and general freight movements will continue to grow in demand. That demand will follow the population and industrial lands with increasing volumes expected to be moved to Western Sydney.



Intermodal freight hub in regional NSW



To support the forecast increase in Port Botany import container handling, NSW Ports recognises that investment in infrastructure and terminal operating equipment will be required to service increased volumes. The port operator has started increasing on dock rail capacity at one stevedore which, when completed, will deliver a one million TEU capacity on-dock rail terminal. In its 40-year masterplan, NSW Ports foreshadows a medium-term plan to increase total on-dock rail capacity across the three stevedores to three million TEU annually.

A container terminal at Port Kembla is expected to be developed if Port Botany reaches capacity. The port operator plans to develop additional berth capacity at Port Kembla at first to facilitate offshore wind turbine installation in the proposed Illawarra offshore area. This port facility is expected to then transition to container trade as Port Botany nears capacity, beyond 2045.⁸¹

The Port of Newcastle is also exploring the development of a container terminal.

Port Kembla and Port of Newcastle are not as close to Western Sydney import demand as Port Botany. As such, Port Botany is expected to continue its dominance in the container task.

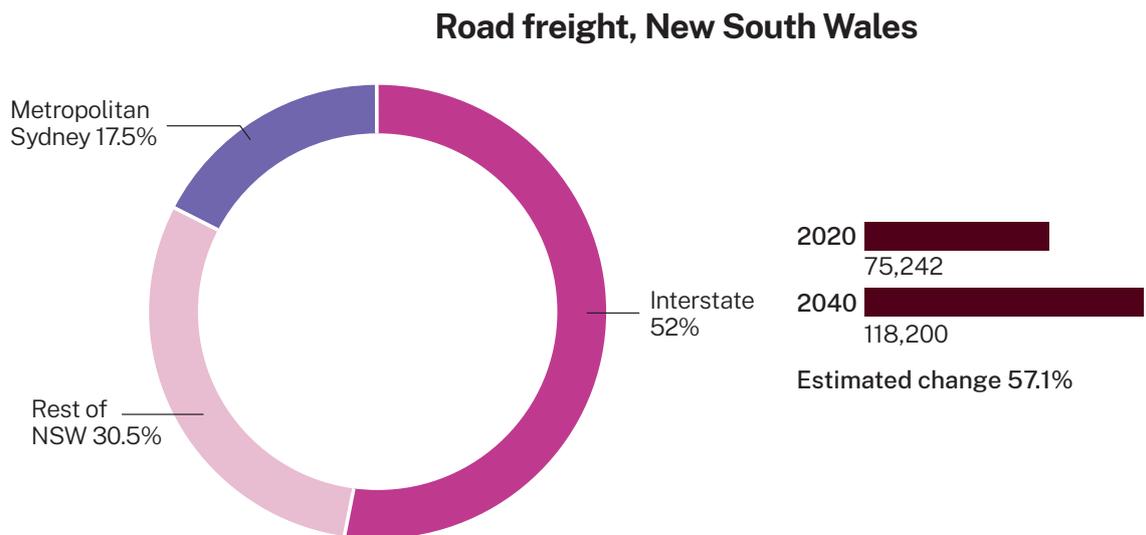
3.1.4 Future road and rail freight

By 2040, road freight is projected to be 57.1 per cent above 2020 levels in NSW (Figure 3.3).

The interstate road task is expected to be 84 per cent above 2020 levels, increasing from 39.1 billion tonne kilometres to 71.9 billion tonne kilometres, potentially impacting road safety, road funding and investment prioritisation, at both a state and national level.⁸²

Notably, as outlined in Figure 3.4, the road freight volumes moved within metropolitan Sydney and within regional NSW are lower volumes than the interstate road freight task. The road freight moved within metropolitan and regional NSW is also projected to increase at a slower rate than the interstate freight volumes to 2040.

Figure 3.3 The increasing road freight task (billion tonne kilometres)



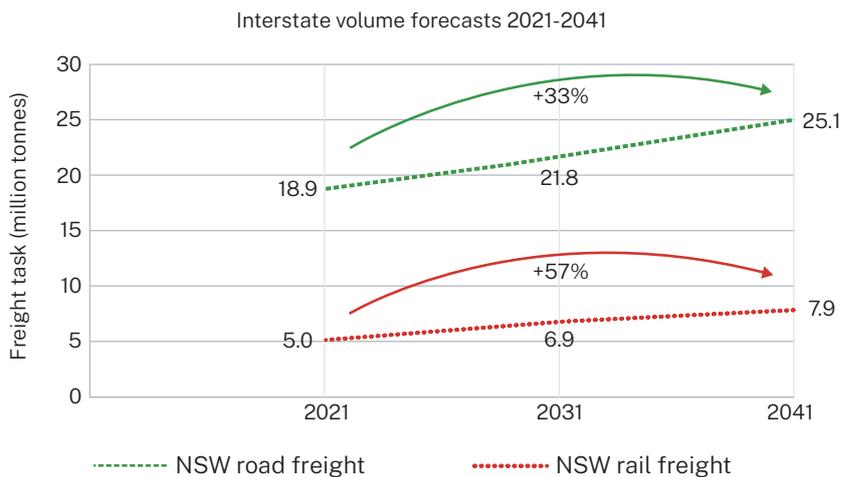
Source: BITRE Research Report 155 – Australian road freight forecasts 2022

⁸¹ NSW Ports, 2023, NSW Ports 2063-our 40 Year Master Plan, p.62

⁸² BITRE Research Report 155 – Australian Road Freight Forecasts 2022

The projected growth in the interstate freight task (Figure 3.4) shows an expected increase in road and rail freight both coming into NSW and travelling out of NSW.

Figure 3.4 The projected road and rail interstate task



Source: Transport for NSW Strategic Freight Model 2021

The projections show more modest percentage increases in road freight than rail freight (33 per cent compared to 57 per cent).

While road and rail freight growth rates are projected to be slower in comparison with historical growth, the forecasts still imply relatively significant increases in road freight volumes and the number of freight vehicles on the road network which would have a significant impact on the NSW freight system.

Freight moves on road and rail networks that are shared with passenger traffic and the capacity of those networks will be impacted by the increasing freight task. The impact of increasing congestion on roads is currently intended to be mitigated by increasing modal shift from road to rail and increasing use of higher productivity vehicles (less trucks required for the same freight task).

For rail freight to be a viable and competitive option, the network needs to be accessible, reliable and cost competitive. Planning for rail freight paths on and through the shared network will require increasing focus and priority from

government, particularly as rail shuttling of export and import containers to and from the port will be essential to reduce road congestion.

The Freight Infrastructure Advisory Board (FIAB) Report of 2005 identified the potential need for freight trains to operate at a standardised 600 metres in length, to optimise the effectiveness of rail operations from Port Botany to a network of metropolitan IMTs. Public and private investments including at the port and IMTs,⁸³ continues to align with a move to standardised 600 metre operations. The benefits of this approach were also acknowledged in the findings of the 'Independent Review of the Ports and Maritime Administration Act (PAMA) and Port Botany Landside Improvement Strategy' (PBLIS),⁸⁴ which recommended that the benefits of adopting a 600 metre length as a common train standard for port rail operations should be further examined.



Road and rail freight are both projected to grow

⁸³ Freight Infrastructure Advisory Board, 2005, Railing Port Botany's Containers: Proposals to Ease Pressure on Sydney's Roads, p.5-6

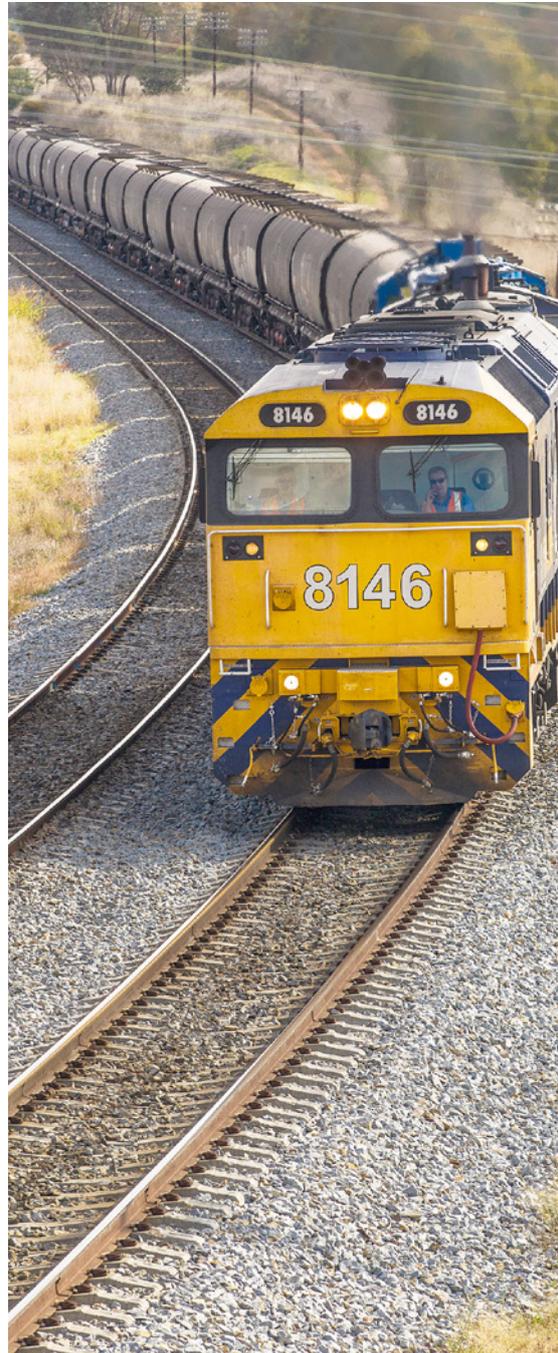
⁸⁴ Willett, 2023, Independent Review Ports and Maritime Administration Act & PBLIS Final Report, p.196

Inland Rail

Part of the Inland Rail Project (funded by the Australian Government) is under construction. This first stage of the project from Melbourne to Parkes will be complete by 2027 and provide a significantly improved rail link for that part of the project. Construction standards allow trains of 1,800 metres in length and double stacking of containers. The rest of the project, through to Brisbane, is likely to be completed in the late 2030s.

The intention of this project was to reduce the number of truck movements between Melbourne and Brisbane and offer a time competitive service that could see freight travel between those two cities within 24 hours. Benefits to NSW of the completed project include reduced road congestion and emissions, avoided road crashes, reduced road maintenance costs and improved connectivity to other domestic markets and major east coast ports (in Victoria and Queensland).

Even with completion of only the first stage, Inland Rail can have a significant impact on the movement of freight in NSW. There is better rail access to the Port of Newcastle and the NSW Government has identified four Special Activation Precincts on the alignment (Moree, Narrabri, Parkes and Wagga Wagga). Two of these, Parkes and Wagga Wagga, can attract industry to rail and there is already evidence of significant success in doing so at Wagga Wagga.⁸⁵ Several industry initiatives are being pursued at Parkes and terminal and rail freight operators have purchased or reserved land at Parkes for their future use. Connectivity through Parkes to the west is improved by this first stage of work, where the build supports 1,800 metre double stacked freight trains.



Freight train on rail line

⁸⁵ Schott, K, 2023, The Delivery of Inland Rail: An Independent Review, p.57

3.1.5 Changes in the workforce

Around five per cent of the current workforce nationally is employed in the transport, postal and warehousing industry, though this ABS classification gives only limited cover of all the jobs in the logistics and freight industry.⁸⁶

While the industry does offer jobs with a range of skill requirements, including some low skilled work, freight companies are becoming complex and demanding a higher skill and capability level. There are increasing jobs in technical areas including scheduling, logistics technology and robotics.

In recent years, the industry is devoting more resources to training and education and to encouraging new employees to the sector. Linfox, for example, has spent \$30 million on vocational and graduate education over the decade from 2005. Since the COVID-19 pandemic the need for new workers has increased. Job vacancies reached record highs in mid-2022 and while

data suggests the worst of these shortages are easing, vacancies remain above pre-pandemic levels, with around 20 per cent of businesses still reporting vacancies (compared to around six to seven per cent pre-pandemic).⁸⁷

In response, the industry has funded the Wayfinder initiative to create a Supply Chain Career Map of 150 roles, covering various parts of the supply chain from basic entry level jobs to executive management positions⁸⁸

Notwithstanding these efforts, several challenges remain. These include an ageing workforce, a lack of workforce diversity, a poor understanding of the industry by the general population and more readily accessible pathways for potential entrants. The industry is heavily male dominated, with females comprising less than 25 per cent of the total workforce. Although year on year growth trends have been impacted by COVID, it is estimated that total employment in this industry will grow by around six per cent in the five years to 2026.⁸⁹



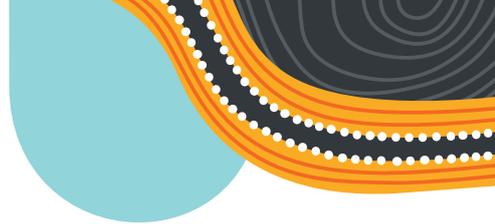
Heavy vehicle drivers checking their load

⁸⁶ Jobs and Skills Australia 2023, Transport, Postal and Warehousing

⁸⁷ Australian Bureau of Statistics, Job Vacancies, Australia November 2023

⁸⁸ Wayfinder 2023, Career Map – Supply Chain & Logistics

⁸⁹ Australian Government, 2022, Labour Market Insights – Transport, Postal and Warehousing



Heavy vehicle driver completing a cargo movement coordination at Port Botany

Recent research commissioned by Transport for NSW highlighted the impact of some of the challenges in attracting new truck drivers. It found that:

- the lived experience of current drivers is poor, leading both to workforce attrition and feeding into negative perceptions of the sector
- poor perceptions of the industry are dampening demand within the prospective driver pool
- there are a lack of clear pathways into the sector which make it difficult for prospective drivers to enter the workforce
- there are concerns among women about driving being a safe working environment.

Truck driving skills are changing. Modern vehicles and freight operations are sophisticated and meeting safety requirements and managing your own health is mandatory. The uptake of automation and rapid technological innovation is also driving changes elsewhere in the transport and logistics workforce.



Changes in technology mean a growing demand for new skillsets

Recent research has identified that many jobs in the transport and logistics sector are readily adaptable to greater levels of automation and computerisation.⁹⁰ Evidence of this trend is already apparent in existing automated warehouses and more recently, in automated rail operations, including the Sydney Metro and iron ore operations in the Pilbara.

The increasing sophistication of machine learning and artificial intelligence suggests that automation may become more common in roles with less controllable and non-routine environments involving both manual and cognitive functions, such as cargo agents and delivery drivers.

These changes mean a growing demand for new skillsets and an additional challenge in attracting these skills to the industry. Recent research by Swinburne University, citing the Australian Academy of Technology and Engineering, found that “Australia’s transport sector is least prepared in terms of skills availability (concerning autonomous vehicles) and in terms of infrastructure readiness”.⁹¹ Noting freight transport is only one aspect of the freight logistics task.

⁹⁰ Frey and Osborne as cited Stanford and Grunhoff, 2020, The Future of Transportation Work: A Summary Report

⁹¹ Swinburne University of Technology, 2023, Creating our future transport and mobility workforce: Understanding the workforce implications of transport digitalisation and automation in Australia.

3.2 Climate change

The second driver of change in the future freight sector is climate change.

Climate change is already having a major effect on freight operations in NSW. Flooding at levels never experienced, along with catastrophic and widespread fires, has raised the issue of freight supply chain resilience to a high level of importance. This applies to road and rail corridors, as well as other links in the freight logistics chain.



Climate change is already having a major effect on freight operations in NSW

At the same time government policy at both state and federal level has moved to implement lower emissions targets, placing obligations on the private sector and public sector to decarbonise. Transition to net zero will mean change to some industries and practices and the emergence of new industries and new ways of doing things.

3.2.1 Network resilience

Over the last three years there were 141 closures of key road corridors caused by significant weather events (Figure 3.5). Of these closures, 120 (85 per cent) were a result of flooding.⁹²

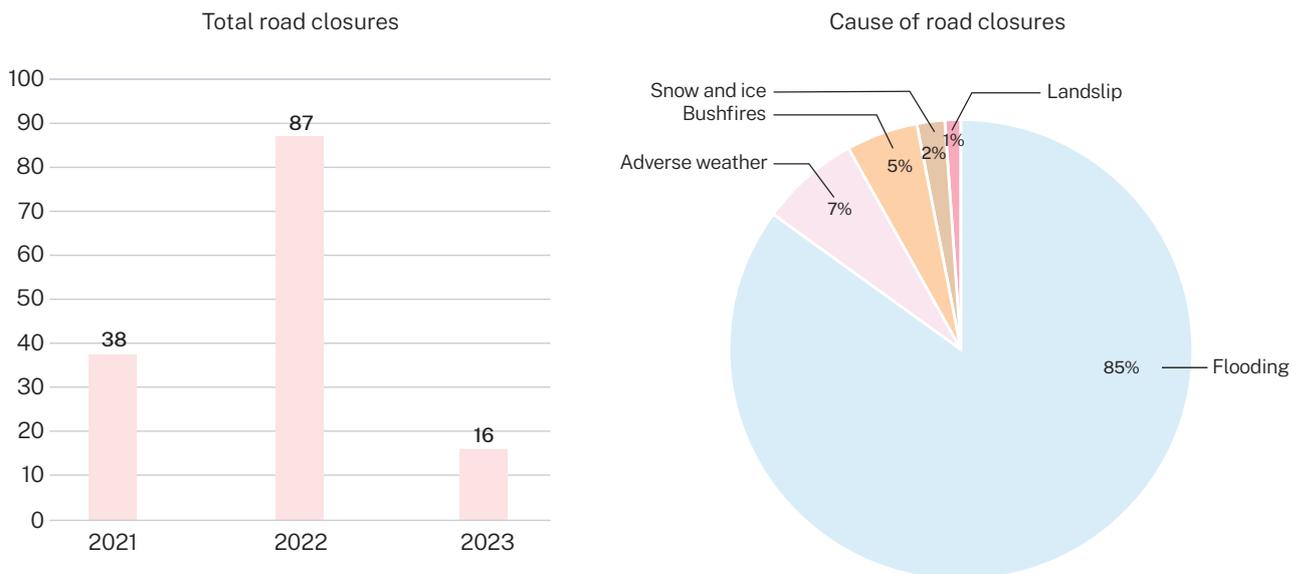
As a result, communities were cut off and key freight routes restricted for extended periods.

Road and rail freight corridors have faced significant impacts and disruption due to weather events. While road offers more agility and opportunity for alternative routing,⁹³ it is not an option for all freight, such as bulk commodities or other products with particular loading requirements, to switch to road.

The effect of poor resilience in rail corridors is considered to have contributed to a loss of mode share by rail.

To ensure resilience of freight networks, improvements in corridors are needed, along with contingencies to support alternatives when required.

Figure 3.5 Road closures on key freight routes 2021-2023



Source: Transport for NSW

⁹² Transport for NSW

⁹³ CSIRO, Road and Rail Supply Chain Resilience Review September 2022, Figure 4 -Impacts matrix for NSW p.9

3.2.2 The decline in coal demand

The most significant change expected in the NSW export trade is the decline of the coal trade. This is directly linked to global efforts to decarbonise and move away from fossil fuels. The trend is already evident and the forecast of coal exports through the Port of Newcastle shows significant decline in future years.

Australia's largest export market for thermal coal is Japan. Exports to Japan peaked in 2015 and Japan is expected to halve its coal fired power capacity over the next two decades.⁹⁴ A similar trend is apparent in other major export markets (such as South Korea and Taiwan),⁹⁵ as well as in domestic power generation.

This is a major issue for the future of the Hunter region where coal is by far the dominant port trade. This is also an issue for the state as coal makes up 52 per cent of exports (by value) and adds significant revenue to the Hunter region and to the NSW Government directly through royalties and other less direct routes. In 2021/22, coal royalties contributed around \$3.5 billion in revenue to the NSW Government.⁹⁶

It is noted that while the economic impacts of the decline of coal are significant, freight remains a derived demand and a reduction in coal movements is not detrimental to freight logistics itself. The use of coal-related transport infrastructure, particularly the Port of Newcastle and Hunter Valley rail network, will change as the economic activity of the region transitions.

The declining coal task also has potential landside implications for the Port. The Hunter Valley Coal Network (HVCN), leased to the Australian Rail Track Corporation (ARTC), is the highest quality and most efficient freight rail network operating in NSW.



Aerial view of full and empty freight train coal carriers

⁹⁴ IEEFA, 2019, Japanese thermal coal consumption approaching long term decline, p.2

⁹⁵ IEEFA, 2019, Japanese thermal coal consumption approaching long term decline, p.2

⁹⁶ NSW Mining, Exploration and Geoscience, 2024, "Royalties rates"
Accessed at <https://meg.resourcesregulator.nsw.gov.au/invest-nsw/nsw-mineralresources/royalties>

Declining coal volumes will result in the loss of an efficient freight logistics chain in the state but leave significant additional capacity on this network. In addition, the Port of Newcastle is seeking to diversify to compensate for this likely loss of export volume and secure the future of the Port (and local economy).

The Port of Newcastle has opportunities to expand activities. It has developed a plan to diversify.⁹⁷ The Port plans to develop a container terminal⁹⁸ and facilitate growth of other commodities such as bulk liquids, vehicles and general cargo. Developing a clean energy precinct is also planned, covering onshore and offshore wind turbines, as well as hydrogen, ammonia and other energy sources.⁹⁹ The Port also has the potential to facilitate other maritime activities and increased cruise visitation.

Coal exports will also be impacted at Port Kembla. The Port expects a diversification in the types of minerals handled over the next 40 years as well as an increase in construction material supply. An LNG import terminal is currently being developed, the first in NSW, which will have the capacity to supply around 70 per cent of the State's needs.¹⁰⁰ The Outer Harbour development is planned to increase berth capacity to cater for offshore wind turbine construction and installation and later this area is to be converted to a container terminal when Port Botany nears capacity.¹⁰¹

3.2.3 Renewable energy equipment demand

Reaching net zero emissions depends to a large extent on decarbonising electricity and further electrification of other activities and business. To encourage lower emissions intensity in electricity, the NSW Government is advancing the implementation of a policy to expand renewable energy generation. Development is focused on five Renewable Energy Zones (REZs) where wind and solar power plants are being built (Figure 3.6).

Freight requirements in the short term to move infrastructure is exposing corridor limitations. Equipment such as solar panels, wind turbines, wind blades and transformers need to move from the Port of Newcastle and Port Kembla to the New England, Central-West Orana and Southwest REZs. It has been estimated that an additional 25,000 Oversize Overmass (OSOM) movements will be required, along with upgrades to the road network.

3.2.4 Other developing industries

It is hoped that the energy transition will lead to the development of other industries in Australia and it has been argued that with such good renewable energy resources, we have an advantage in energy intensive industries. To encourage the development of such industries, there has been a government interest in the hydrogen industry to provide energy for the export market.

Hydrogen is also being explored as a possible alternative fuel for road and rail freight, although the preferred solution and technology continues to evolve. NSW as well as other states are investing in a Hume Highway initiative, a Newcastle Hydrogen Hub, an Illawarra Hydrogen Hub and the East Coast hydrogen refuelling network for freight. A Memorandum of Understanding has been established between NSW, Queensland and Victorian governments, to support the delivery of an East Coast Refuelling Network.¹⁰²

The NSW Government is supporting the development of the Hunter as one of Australia's largest hydrogen hubs. The Hunter has access to existing high voltage transmission infrastructure, a skilled workforce and access to one of the world's largest energy export terminals at Port of Newcastle. There is also existing commercial scale production and use of hydrogen at Orica's ammonia facility which exports around 130,000 tonnes of ammonia.¹⁰³

⁹⁷ Port of Newcastle 2023, Port Development Plan 2023-2028, p.35

⁹⁸ Port of Newcastle 2023, Port Development Plan 2023-2028, p.37

⁹⁹ Port of Newcastle 2023, Port Development Plan 2023-2028, p.35

¹⁰⁰ Squadron Energy, <https://www.squadronenergy.com/our-projects/port-kembla-energy-terminal>

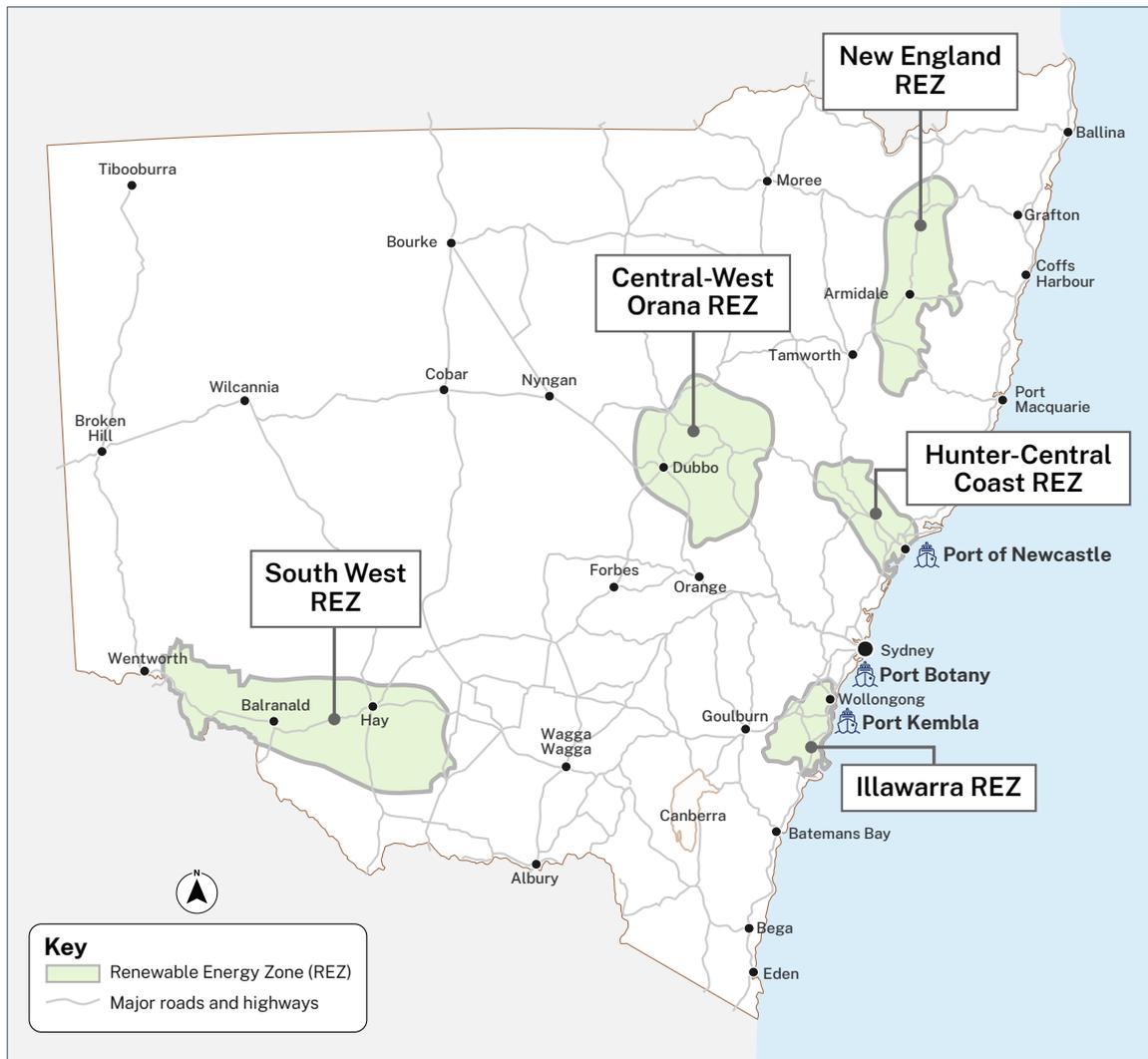
¹⁰¹ NSW Ports, 2023, NSW Ports 2063-our 40 Year Master Plan

¹⁰² NSW Government, www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes/hydrogen-refuelling-network-funding

¹⁰³ Department of Planning, Industry and Environment 2021, NSW Hydrogen Strategy, p.47

Green ammonia provides opportunities in the domestic and international markets for fertiliser and will require future freight services. A further example of an energy intensive industry where Australia may have an advantage is green steel. Port Kembla has a fully integrated steelwork and a facility of this size using hydrogen could produce green steel for domestic and export trade.

Figure 3.6 The locations of the five Renewable Energy Zones



Source: NSW EnergyCo, Renewable Energy Zones

3.2.5 Zero emission vehicles

In addition to changing demand for commodities, the way we move freight will change as the transition to net zero emissions drives a change in freight transport. The 'NSW Towards Net Zero Emissions Freight Policy' recognises that there is a transition that at first, requires reducing emissions through improved productivity and efficiency of freight, using existing and available technologies, moving more on rail as well as modern and higher productivity vehicles. Rail freight produces 16 times less greenhouse gas emissions¹⁰⁴ and is four times more fuel efficient compared to road freight.¹⁰⁵ Optimising the role of rail within the overall freight task in NSW is a key opportunity for reducing freight emissions.

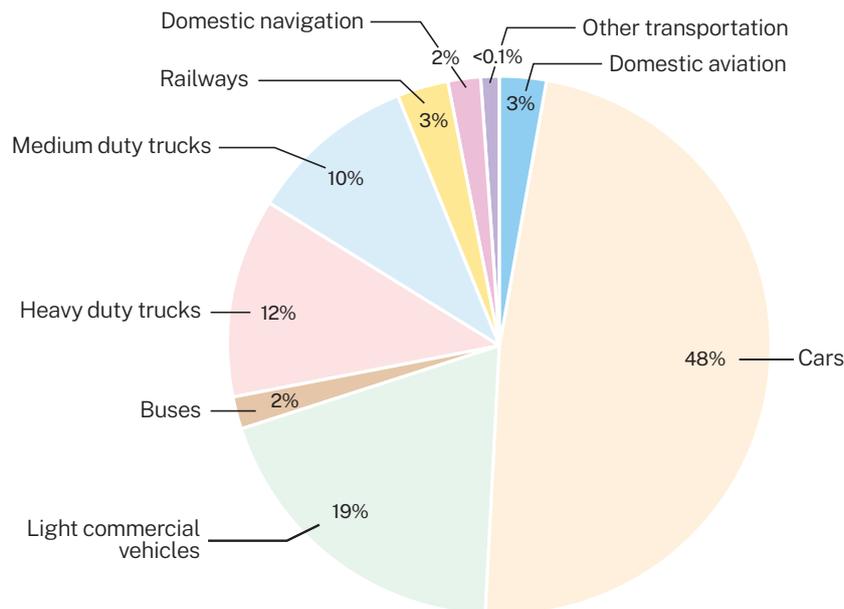
Decarbonising freight is critical to achieve net zero emission targets, particularly given the increasing freight task. In 2021, the transport sector was the second largest greenhouse gas producer generating around 25 million metric tonnes of CO₂e (mtCO₂e) which accounted for 19 per cent of total emissions in NSW.¹⁰⁶

In 2022, Australian freight activity totalled 795 billion tonne kilometres, transported mainly by road, rail, domestic maritime shipping and air.¹⁰⁷

Medium and heavy duty trucks account for 22 per cent of the total transport greenhouse gas emissions in NSW, while rail accounts for only three per cent of emissions (Figure 3.7). At the same time, new zero emission vehicles and rail locomotives continue to evolve and are now becoming available. Government needs to support the adoption of new technology, encouraging transition through equivalent and timely access to road and rail networks and ensuring the charging infrastructure required is available.

Road freight, short haul and urban freight transport can provide immediate opportunities for reducing emissions, subject to the availability of recharging infrastructure. By implementing available solutions in short-haul freight, Australia can start reducing 51 per cent of its freight emissions immediately.¹⁰⁸

Figure 3.7 Greenhouse gas emissions by vehicle type



Source: Australian Government, Department of Climate Change, Energy, the Environment and Water, Australia's National Greenhouse Accounts

¹⁰⁴ Deloitte Access Economics, 2017, Value of Rail: The contribution of rail in Australia', p. iv

¹⁰⁵ Benefits of Inland Rail - Inland Rail, www.inlandrail.artc.com.au/what-is-inland-rail/benefits/

¹⁰⁶ Transport for NSW 2023, Towards Net Zero Emissions Freight Policy, p.12

¹⁰⁷ Climateworks Centre 2023, Delivering Freight Decarbonisation: Strategies for reducing Australia's transport emissions - Summary Report, p.10

¹⁰⁸ Climateworks Centre 2023, Delivering Freight Decarbonisation: Strategies for reducing Australia's transport emissions - Summary Report, p.7

3.3 Emerging technology

The third driver of change in the future freight sector is changing technology. There are several technology changes, used internationally, being implemented or trialled in the Australian freight sector with many relying on digital technology and advanced manufacturing:

- autonomous vehicles are operating on mines
- telematics enables communication between vehicles and infrastructure, supporting access that would otherwise be restricted
- battery electric and hydrogen heavy vehicles and rail locomotives are entering the market
- 'dark' warehouses and logistics facilities are being developed across the state.

Patrick Terminals and NSW Ports have invested \$190 million in significant upgrades to the Patricks Sydney Autostrad rail terminal, developing automated rail, with the plan for four

600 metre sidings when works are complete.¹⁰⁹ NSW Ports plans to subsequently invest in on-dock rail at the other two stevedores to provide capacity for one million TEU per year at each stevedore.

3.3.1 Automation

There is a very real potential for automation to continue to radically change some aspects of the freight transport and logistics chain. Examples include:

- productivity gain through automated container logistics at the ports and IMTs
- investment in fully automated distribution centres
- automated materials handling equipment in logistics warehouses.

While technology and regulation are still developing about connected and automated vehicles (AV), there is increasing automation on our roads, railways, ports and warehouses.



Freight truck delivering container to be loaded onto a cargo ship at Port Botany

¹⁰⁹ NSW Ports, www.nswports.com.au/nsw-ports-and-patrick-terminals-commence-work-190-million-project-double-dock-rail-capacity-port

The integration of AV technologies in road freight is rapidly increasing, with several trials across Australia of technology already in use overseas, including:

- the development and deployment of autonomous trucks for a range of freight use cases including long-haul transportation
- platooning¹¹⁰ on highways
- port operations
- waste collection, mining and agriculture.

This will lead to potential improvements in efficiency and safety and drive changes to demand.

There is also a growing focus on efficient and sustainable last-mile delivery solutions, especially in response to the rapid rise of e-commerce. Electric vans, drones and autonomous delivery vehicles are becoming more common in urban areas to address congestion, noise and emissions concerns.

While most projections indicate the uptake of highly automated trucks will remain low over the next decade, significant improvements to whole-of-life costs are expected to be seen from 2030 onwards as technology matures and market supply increases.¹¹¹

The adoption of Intelligent Transport Systems (ITS) incorporating technologies such as real-time data analytics, telematics, geo-spatial system mapping and Connected Vehicle systems, will continue to enhance the overall efficiency of road freight operations, as do higher productivity vehicles and performance-based vehicle standards. Intelligent systems optimise routes, reduce congestion, increase safety and improve fleet management.

Greater integration of digital technologies, including Internet of Things (IoT) devices, artificial intelligence and machine learning and intelligent road sensors, is enhancing connectivity across the freight network. This enables smarter asset management, better safety management and a

more productive use of assets. Most importantly, technological advancement and automation offers the opportunity to optimise use of the freight transport and logistics networks, supporting greater integration with passenger transport through increased use, especially during off-peak and extended hours.

In terms of the workforce, increasing automation is generating new, highly skilled employment opportunities within logistics and freight transport. It is also recognised there are significant workforce shortages in the industry. This new workforce requirement is posing a challenge across the freight industry and business community at large. The use of automation is expected to assist in securing the future of the industry and help overcome workforce shortages.

3.3.2 Data and telematics

Telematics in vehicles and Cooperative Intelligent Transport Systems (C-ITS) infrastructure offers significant opportunities for informed network management, leading to greater optimisation, standards and condition of the networks.

There is an opportunity for the heavy vehicle industry to support governments by allowing greater access to road data to inform government road investment decision making. This would not only deliver public benefit, but also ensure road investment aligns more closely to the demand for road services.

The development of national data and telematics frameworks is intended to bring together the various use cases, as well as data sources to harness the data available most effectively for the management of freight infrastructure.

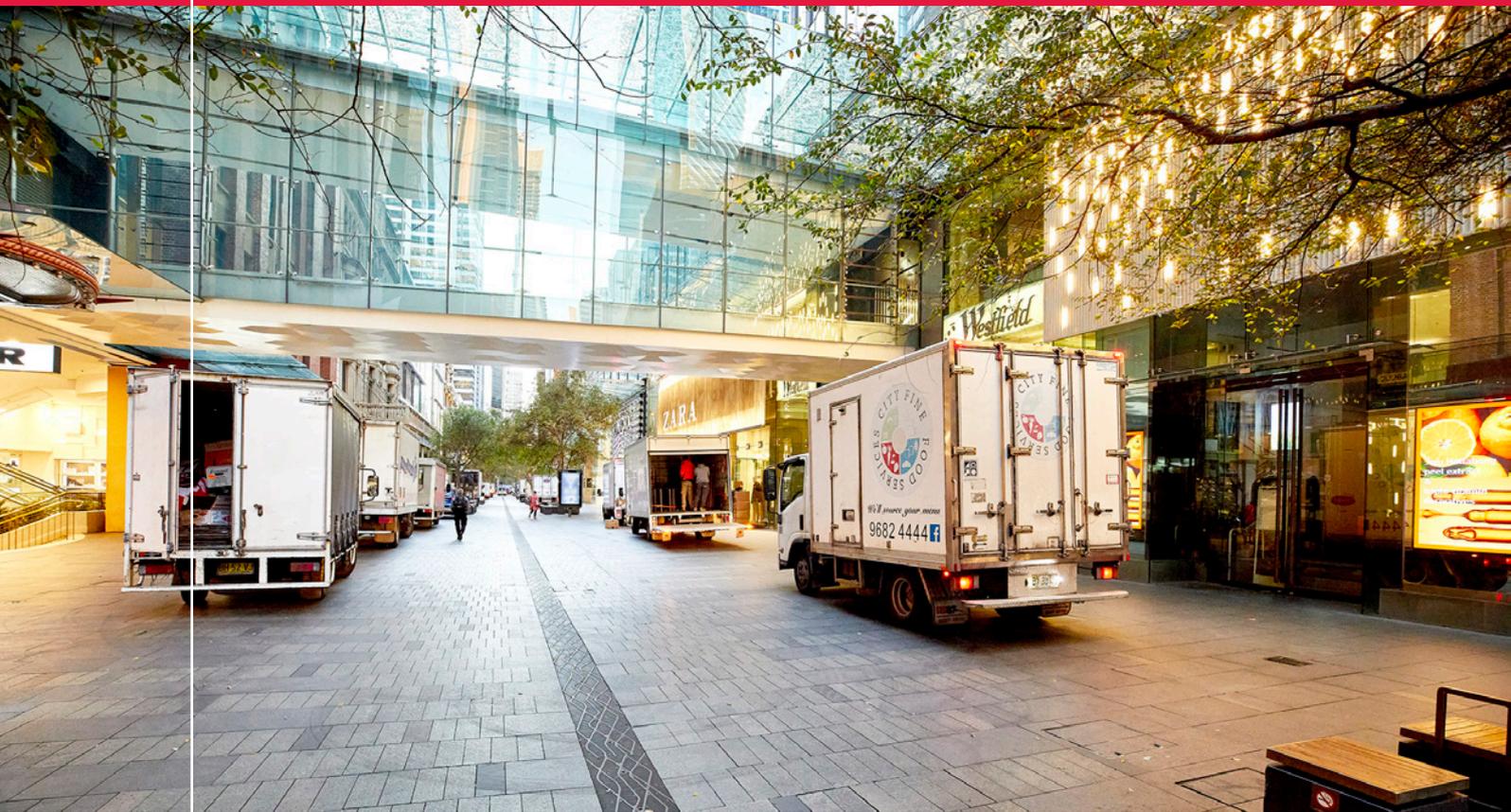


Automation is being increasingly integrated in freight chains

¹¹⁰ A platoon of connected automated vehicles that drive as a group and exchange information, so that they can drive in a coordinated way, allowing for very small spacings, which supports road safety and efficiency.

¹¹¹ Element Energy, Cambridge Econometrics and Connected Places Catapult 2020, Market Forecast for Connected and Autonomous Vehicles

4 Strategic issues



4 Strategic issues



4.1 The entire freight logistics chain

The productivity and efficiency of the freight task is determined by every link in the chain being realised as part of an independent system. The focus of the Reform is not just on one part of the freight task but all the parts of the many logistics chains across which that task is conducted.

The most efficient freight logistics chain in NSW is carrying freight that is declining in demand –the movement of coal in the Hunter Valley from mine sites to export vessels at the Port of Newcastle. This freight chain is among the best in the world because the cargo is efficiently loaded at the mine site in a timely manner to meet export vessel requirements which are relayed ahead while the vessel is approaching port; the cargo is then unloaded efficiently at the port for timely vessel receipt (after some blending at port if required). The cargo then travels to its destination having been loaded at the mine site and transferred to the vessel by specialised stevedores, with minimal delay and efficient port handling. The chain is as seamless as possible.

Achieving this freight chain outcome was not easy even though the cargo is one type of good (bulk coal) and the freight chain is based on a single transport mode (rail) and going through a freight focused port in an industrial regional city. Its efficiency depends on everyday coordination between many parties, the rail asset owner and rail operators, the receipt vessels and the mines and the handling and management of port activities by stevedores and the port.

Agreements between these parties about operational coordination at a practical level is critical including agreement about charges for rail services, asset maintenance, port handling,

stevedore and other port charges. While the coal miners are competitors, they have cooperated on improvements to the freight chain, benefitting all. Governments, both state and federal, facilitated this coordination over several years. The lesson from this efficient freight chain, is the value of practical coordination for all participants.

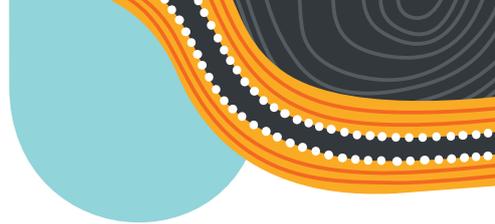
The key issue is how much of the current freight task in NSW can be integrated and coordinated for everyone's benefit, rather than each link (such as a port) trying to maximise its position and ignoring the rest of the activities on the chain. This comes at a cost to the entire chain.

The cost of poor coordination and cooperation is ultimately passed on to the consumer or final recipient of that freight. The cost can also be so great that it stops business from starting or causes an existing one to fail. The system, including all points and links in the chain must be optimised as we keep sight of the entire logistics chain. This is not necessarily a problem that government solve, it requires a partnership approach.

4.2 The role of government

The role of government must be clear and facilitate the efficient operations of the many freight chains in NSW.

Traditionally government and parts of the freight industry have been slow to adapt and respond to the need for change. This reflects the complexity of the system as well as the significant capital investment, public and private, supporting the freight logistics chain. Despite that complexity and investment, the system needs to change to meet the future challenges outlined in section 3.



Industry must:

- accommodate the growing population especially in Sydney
- adopt new technology and take new approaches and opportunities
- introduce and continue measures to meet lower emissions targets.

Furthermore, this must be done quickly enough to meet the demand in an efficient way.

Freight customers drive the demand for change. This is expected to drive the need for more capacity, more efficient transport and services and lower emissions vehicles and approaches. This will only be achievable if government and industry work together.

There are two main roles for government in NSW. The first is to provide the major rail and road networks where the private sector is unable to do so at a reasonable cost. Governments (state, federal and local) do so within their budget parameters and collect charges from the users of those networks. They also plan the future network needs and reserve industrial land for corridors and facilities to meet those needs.

The second major role is to facilitate freight operations.

Government needs to set policy direction and take action to achieve its objectives. Regulatory intervention may be required in some markets, consistent with the principles of Better Regulation where it is necessary to do so. The public policy requirements for such matters as safety, planning and environmental outcomes, including lower emissions, may warrant regulatory approaches.

In the Hunter Valley coal chain example, government worked in partnership with industry to develop an approach to cooperation and harmonisation. There was then regulation

supporting those agreed terms including enforcement of use of the rail corridor for freight through planning requirements for mine operators. Importantly, while government facilitated and ensured that the final cooperative outcomes reached by the private sector were competitive, the government stepped aside while industry worked out these arrangements. They were arrived at by discussion with the rail owner and rail operators, the port and the mines. The outcomes covered such matters as rail and port charges, maintenance arrangements and port operational procedures, including coal handling. Government involvement was to ensure that the outcome was competitive and referrals to the Australian Competition & Consumer Commission (ACCC) and IPART as relevant occurred.

From these public policy matters flow operational requirements including vehicle standards, network charges, licence standards and so on. Anti-competitive behaviour should be monitored so new entrants and new technology is not blocked from entering the industry. Other than those roles, government should ensure regulatory intervention is based on necessity and not interfere or prohibit industry to do what it should do best.

In general, governments should not inhibit the smooth flow of freight unless it is about a public policy outcome. What governments can do on an ongoing basis, is monitor that their actions and the interactions between the various levels of government, are not causing unnecessary issues.



Government has a role to facilitate efficient freight operations

4.3 Challenge of integration

Freight crosses multiple government jurisdictions (local, state, federal) and multiple road and rail networks. In Australia this brings a multiplicity of regimes covering amongst other things:

- safety regulations
- rail signalling systems
- different vehicle requirements
- different licensing conditions
- different approaches to land use of the network
- different charges for network use.

It is not unusual for countries to have multiple jurisdictions, for example, networks in the European Union, the United States and Canada. There are examples suggesting integrated freight logistics chains can be established in these situations and Australian practice, including in NSW, can improve.

In addition, ports, intermodal terminals, depots and warehouses should not be seen as standalone facilities. They are critical parts of the integration challenge and there are many current constraints that impact utilisation and efficient use.

The freight task can be improved and made more efficient, however, future trends (section 3) add further integration challenges, including:

Population growth

The growth in population and related freight demand means more pressure on shared transport networks. The road and rail networks in NSW are shared with public transport and in places the pressure is already such that freight traffic cannot operate effectively and at times cannot operate at all.

Shared rail lines need to optimise capacity use to support more freight trains while also moving more passengers on time.

An increasing number of passenger vehicles will share the roads with heavy vehicles moving freight. The road network needs to be optimised to ensure no increase in safety risks, lower emissions, manageable interactions between trucks and cars as freight vehicles become larger and heavier and finally, minimal congestion on the road networks.

Industrial land and land use planning

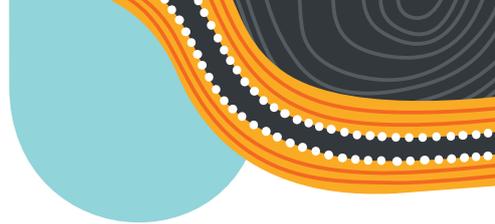
With the projected population growth, planning must address this and integrate freight chains within urban considerations. The current situation in Greater Sydney (section 3.1.2) must be addressed as well as considering how to manage further expected population growth and demand for other land uses. In regional NSW, it is also important that plans support existing and developing industry.

Network resilience

Resilience in freight chains is of increasing importance as extreme weather events become more frequent and further challenge the integration and prioritisation of freight and passenger movements. Recent experiences demonstrate the high costs to the freight industry and consumers when road and rail networks are out of service for extended periods.



Freight train at Yennora Intermodal Terminal



4.3.1 Shared road networks

Road network maintenance and upgrades

The freight road network in NSW has seen significant improvements given continued investment in key upgrades over the last decade. This includes the duplication and upgrade of the Pacific and Hume highways. There are remaining sections of these highways which still present a constraint to heavy vehicle movements, particularly the Sheahan Bridge on the Hume Highway near Gundagai and Hexham Bridge on the Pacific Highway in Hexham (noting plans are in place with the M1 to Raymond Terrace works to address this restriction).

The Newell Highway, another key freight route, supports end to end access for road trains. However, the road is subject to flooding. To support greater freight movement and reduce closure times, flood mitigation and heavy-duty pavement work is underway.

Recent investments, 38 additional overtaking lanes and safety upgrades along the Newell Highway, are expected to provide about 33 minutes of travel time savings along the length of the Newell Highway from the Victorian to Queensland border.

Ongoing, sustainable funding for road maintenance is a challenge for state and local governments. Increased road use, combined with more extreme weather events, contribute to an increasing maintenance requirement in a fiscally constrained environment.

Currently the revenue from heavy vehicle road charges, largely collected by the Australian Government and by state governments through registration, is not directly linked to road maintenance funding. Rather funding is distributed through grants programs and is subject to application, which impacts long-term planning and the opportunity for sustainable workforces. Further, maintenance funding cannot be capitalised which creates budgetary constraints.

The Australian and NSW governments must consider how to ensure that funding for road maintenance and upgrades is available in a more regular way rather than the variable manner it occurs at present. Steady, predictable funding, potentially with recognition of maintenance as an ongoing capital investment, would enable planning of an optimal maintenance program over the medium and longer-term, rather than being carried out in a reactive and short-term manner.



The Newell Highway

Road resilience

Resilience remains an issue in parts of the network (section 3). The NSW Government is committed to improving the standard of the network when recovering from natural disasters – ‘building back better’. This strategic approach must build the ongoing resilience required in the network.

Planning has also identified key corridors and available alternatives so that responsiveness is improved if there are road closures.

Implementation must follow and road users should be made aware of alternative routes.

The resilience of the road network is of increasing importance for freight networks as climate events become more extreme. The work being done by both governments and where it is being done, must be evaluated for effectiveness with industry input in due course.

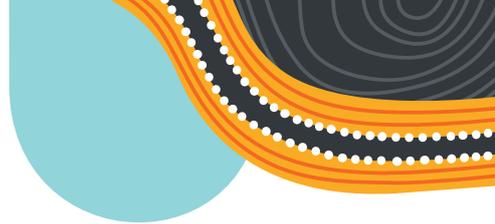
Optimising the benefits of modern heavy vehicles

Road freight will remain a dominant aspect of the freight logistics chain with commercial, medium and heavy vehicles all playing a role in delivering freight along the chain and to its final destination. It is imperative that road freight movements support other modes, particularly rail freight and commercial land is available to optimise hub and spoke freight distribution, particularly across Greater Sydney.

Access for safe, sustainable and productive road freight movements is largely focused on heavy vehicles, particularly higher productivity vehicles which have restricted access. However, access conditions for all vehicles moving freight contributes to the efficiency of the sector. Management and planning relating to rail crossings, access to retail centres, movements



Grain carrier truck unloading grain



through urban places and access to the port, are all matters that impact road freight and need to be considered beyond heavy vehicle access alone.

New truck technology promises to increase productivity on road corridors. Higher productivity vehicles, including longer combination vehicles and other configurations that allow for increased payload capacity, are becoming more prevalent. This trend is increasing efficiency, reducing the environmental impact per tonne-kilometre and improving safety outcomes.

The number of modern higher productivity vehicles, particularly vehicles within the Performance Based Standards (PBS) Scheme, have grown more rapidly compared to the total growth of new registrations for heavy vehicles. In the last five years the total of new approvals of PBS vehicles have doubled, whereas the heavy vehicle market has grown by 20 per cent over the same period.¹¹² The National Transport

Commission (NTC) has forecast that under a moderate growth rate of seven per cent, there will be between 15,000–20,000 vehicles in the PBS vehicle fleet in Australia by 2034.

The PBS vehicle fleet has several advantages. It provides:

- A better safety performance in terms of braking capability and rollover stability. In addition, vehicles are often equipped with other modern safety features (including automated emergency braking, lane keeping assist, driver monitoring systems and side underrun protection). PBS vehicles have been found to be involved in 46 per cent fewer major crashes per kilometre than conventional vehicles.¹¹³ (Austroads have estimated that if the entire freight task was completed by such vehicles, it could save up to 96 lives by 2030).¹¹⁴



Mechanical grape harvesting

¹¹² National Heavy Vehicle Regulator 2020, Performance Based Standards, Australia's PBS Fleet, p. 3

¹¹³ National Transport Commission 2018, Reforming the Performance Based Standards scheme Policy paper, p. 8

¹¹⁴ Austroads 2014, Quantifying the Benefits of High Productivity Vehicles, p. i

- Significant potential to reduce emissions and optimise the capacity of the existing network, thereby reducing the number of vehicles on the road and total kilometres travelled. This has a net positive effect in terms of reduced congestion and infrastructure wear and tear, as well as reducing exposure to air and noise pollution and safety incidents.
- Innovative designs with more axle groups to carry a higher payload. More axle groups reduce the impacts on bridges and pavement. PBS vehicles do not cause additional road wear despite carrying heavier loads than their conventional counterparts. PBS vehicles are estimated to have reduced total road and bridge maintenance expenditures in NSW in 2015-16 by about \$21 million.¹¹⁵ These savings will grow as more of the freight task is carried through PBS vehicles.

Given these advantages it is not surprising that from 2007 to 2019, PBS vehicles that replaced conventional heavy vehicles across Australia offered several sustainability benefits, including:

- the removal of over 2,700 trucks from roads
- a reduction in fuel consumption by over 800 million litres
- a reduction in heavy vehicle distance travelled by over 1.6 billion kilometres
- a reduction of carbon emissions by 2.2 billion kilograms.¹¹⁶

These vehicles require access to other links in the supply chain to be able to realise the benefits they offer. Access for PBS vehicles to strategic sites, including key industrial lands, special activation precincts, major freight throughways such as ports, airports and IMTs, is a key factor in the draft 'Heavy Vehicle Access Policy'.

It is notable that state-wide PBS access to IMTs is currently at just over 50 per cent. There are 56 operational IMTs statewide with 29 having PBS 2B or greater road access. In Greater Sydney, eight out of 12 IMTs have PBS 2B or greater road access which greatly improves the efficiency of moving containers with two forty-foot containers able to be carried on one vehicle load. Considering this in the context of the overall freight system and end to end movement of freight, this efficiency contributes to the greater use of rail to the IMT.

The advantages of modern higher productivity vehicles, including PBS vehicles, need to be balanced alongside consideration of smaller passenger cars on the same roads. Greater acceptance and understanding of the role of heavy vehicles sharing roads with passenger vehicles and their contribution to road charges is necessary. Consultation by government and the industry about the further use of higher productivity vehicles should not be overlooked. This should explain the advantages to safety, fewer heavy vehicle numbers and lower emissions, along with an explanation of where the vehicles are able to access and where they are not.

The introduction of modern heavy vehicles has been occurring and with it an increase in productivity. To continue this trend the acceptance of these vehicles is vital and more understanding of the benefits, including safety improvements and potentially lower cost impacts, is required.



Greater acceptance of heavy vehicles sharing roads with passenger vehicles is necessary.

¹¹⁵ National Transport Commission 2018, Reforming the Performance Based Standards scheme Policy paper, p. 8

¹¹⁶ National Heavy Vehicle Regulator 2020, Heavy Vehicle Productivity Plan 2020-2025, p. 25

4.3.2 Shared rail networks

Rail access and coordination

There is a declining mode share for rail. NSW has three different rail networks each with different managers (section 2). There are opportunities to improve coordination, as identified by the recent reviews focussing on rail freight access, including:

- the Auditor-General's Report into Rail Access in Greater Sydney
- Independent Pricing and Regulatory Tribunals (IPART)'s Review of the Rail Access Undertaking
- Independent Review of Sydney Trains' Rail Infrastructure and Systems.¹¹⁷

In their reviews, the Auditor-General and IPART noted the coordination challenges that arise for rail freight operators on their part of the freight supply chain.

In NSW much of the rail network is shared with passenger activity and rail operators struggle to get access to train paths. Access is particularly difficult in the Sydney Trains network where passenger traffic has priority, especially during peak times and network operators allocate freight paths on an 'ad hoc' basis. (This is not to suggest that the allocators do not try to find freight paths but rather that the system relies on relatively informal methods.)

About 50 per cent of freight trains use ad hoc paths, issued at short notice as part of the management of day of operations rather than through a planned timetable.

A freight level of service has been established to embed freight requirements into the Sydney Trains contract and its standard working timetable, but it is recognised that access to paths needs further improvement.



Aerial of freight train at Hexham

¹¹⁷ An independent panel comprised of Carolyn Walsh (panel lead), Arthur Smith and Peter Medlock conducted the review.

Access is also hampered for new entrants who face restrictions partly caused by the ‘ad hoc’ allocation of freight train paths, as well as the fact that high value paths are generally ‘grandfathered’ and retained by incumbents.

It is also important that different rail networks harmonise their train requirements for length and weight. Different parts of the network may always have different requirements that are suitable but there is a need to check these requirements are harmonised and coordinated as far as possible.

The IPART ‘Review of the NSW Rail Access Undertaking’ identified several areas where greater certainty, transparency and accountability would benefit both access seekers and access providers and encourage growth in the rail freight market. At a high level, the key areas of reform identified by IPART include:

- **Pricing:** Although the risk is constrained on most parts of the network to which the Undertaking applies, access seekers would benefit from greater transparency around access prices.
- **Customer engagement:** Access seekers face an imbalance in bargaining power and are impeded in their ability to effectively negotiate and make informed decisions.
- **Non-price terms of access:** It is difficult for access seekers to negotiate non-price terms of access due to a lack of clear principles underpinning how capacity is to be allocated, limited transparency around available capacity and day-to-day management of rail freight operations and a lack of interoperability between networks.
- **Underinvestment:** As a result of the above, freight industry access seekers are discouraged from entering the market or expanding their operations and are deterred from new capital investment in infrastructure and rolling stock.

As both freight and passenger services increase, it will become increasingly important to have effective access arrangements and provide a reliable level of service.

Access to train paths needs better coordination across the three different rail networks noting particularly issues in accessing the Sydney Trains network. Measures need to be identified and implemented to improve this problem.

Rail system interoperability

There are at least 10 different signalling and train control systems in Australia. Within the 10 different systems, each jurisdiction has its own distinct safe working rules.¹¹⁸

Without uniform application of practices across networks (and jurisdictions) or an obligation to ensure alignment with adjacent networks, operators face the reality of complying with a multitude of different policies.

There is a tendency to change signalling and train control systems to align with existing rules and safe working principles. This can result in bespoke systems being implemented that may not align with other versions in operation.

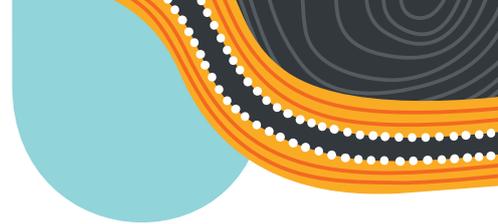
Typically, Rail Infrastructure Managers (RIMS) determine whether a change in safe working practices is required with costs passed on to operators.

The use of multiple signalling and safe working systems creates a burden for rail management and businesses, the maintenance of systems and the need to train drivers in different systems.

Multiple systems:

- add cost and time to train and onboard staff for operators
- limit staff mobility across networks, lines and rolling stock
- contribute to an environment in which it is more difficult and costly to maintain rigorous adherence to safe working practices.

¹¹⁸ A safe working system is a set of operating rules and procedures that define the interaction between workers and the engineered systems for the safe operation of a railway.



There is also an impact on rail productivity and competitiveness. Different rules mean it becomes uncommercial for above rail operators to compete for some markets given different rules and systems for track (below rail) maintenance, track possessions and safe access to the track.¹¹⁹

A mass restriction on one part of one network is going to carry across to all networks on which the train travels. As a result, the most restricted access condition ends up being the maximum allowable mass for the journey.

It is recognised there will be different capacities and conditions for travel on networks, particularly comparing the Metropolitan Rail Network (MRN) and Country Regional Network (CRN). However, harmonisation of conditions and shared processes, such as assessment and approval of rolling stock, would support more efficient rail operations.

Recent work by the NTC has drawn attention to the importance of interoperability of signalling systems.¹²⁰ The Australian Rail Track Corporation (ARTC) network operates alongside the wider MRN and the CRN and all must have interoperable signalling systems.

At present, there are different signalling systems being considered on the Eastern Seaboard which are incompatible and would have safety and productivity impacts. Freight trains traversing the Sydney network would be at risk of operating at a lower level of safety if the signalling systems are not compatible. This outcome is not acceptable.

A lack of interoperability between the signalling systems on connected networks will create significant ongoing costs as alternative solutions will be required (e.g. keeping lineside signals, dual fitting locomotives, other technological solutions). It is also imperative that the systems being implemented in NSW, VIC and QLD are also interoperable so as not to compound existing pain points.

The interoperability across different network systems is critical for safety and efficient operations. Agreement between jurisdictions and network owners and operators around train size requirements (length and axle load etc), signalling systems, safety requirements and driver training, should be addressed with some urgency.

Rail resilience

In addition, reliability and resilience of the rail network is paramount to supporting the movement of freight on rail and encouraging greater modal shift. The limited alternatives for freight that moves on rail that are available in the event of a closure, and the impact of a significant delay on the end to end journey, means plans and responsiveness are critical to build resilience into the rail network.

Resilience to impacts to the rail network is necessary to support reliable rail freight services to secure greater modal shift.

4.3.3 Constraints at ports

Landside transport to optimise capacity

Port Botany is and is expected to remain the most important container port in NSW. The Port Botany container supply chain includes multiple parties and requires high levels of coordination. Being an interconnected supply chain, inefficiencies (or disruptions) in one part have potential flow on effects and consequences for the cost of freight in NSW.

Over time, Port Botany capacity will be somewhat limited by infrastructure on the quayside, noting the trend of increasing ship sizes. As such, the landside needs to be optimised to enable the port to operate to its full capacity. The efficient movement of containers into and out of the port by rail and road is integral to port operations.

¹¹⁹ Below rail managers are responsible for rail track infrastructure and related facilities, above rail operators are entities that operate the rolling stock (trains) that use the infrastructure managed by the below rail managers.

¹²⁰ National Transport Commission, 2024, Rail Interoperability (<https://www.ntc.gov.au/transport-reform/ntc-projects/rail-interoperability>)

Increasing volumes of containers, particularly imports to support the growing population with improving living standards, will arrive at Port Botany and be distributed across the state. NSW Ports projections of capacity would see an almost threefold increase in the volume of containers moving in and out of Port Botany.¹²¹ This cannot be achieved without innovation and changes in the equipment being used by the container stevedores (which is happening). Also, it cannot be achieved unless a greater share of containers are moved to and from Port Botany by rail.

Rail access to Port Botany is critical to maximising throughput at the port. The dedicated freight line, owned and operated by ARTC, has just been duplicated between the Southern

Sydney Freight Line and Port Botany. This is helpful for terminal operations with access to that route but elsewhere, freight trains face the difficulties of access to the Sydney Trains network.

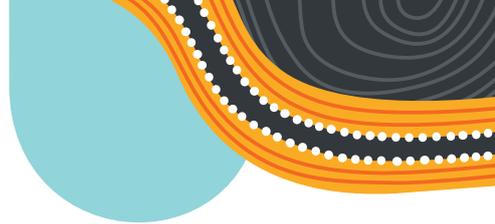
In the immediate term more coordination to improve access on this network is needed. In the medium and longer-term a new line, the Western Sydney Freight Line is likely to be required.

Container movements at Port Botany will increase over time. It is critical that equipment and practices at the port modernise and freight rail links work smoothly to increase the modal share of rail. Without these changes capacity will not increase to meet demand.



Aerial view of Sydney Airport

¹²¹ NSW Ports, 2023, NSW Ports 2063-our 40 Year Master Plan, p.26



Planning for changing commodities and port activity

The potential growth in bulk liquids, such as fuel and gas and the need for safe and sustainable transport of those goods, is an important issue for transport networks and the community.

The Port of Newcastle has good rail links, with access to central and northwest areas of NSW (where bulk traffic currently uses alternative freight routes), available land at the port and a need to expand its operations as coal declines over the next decades. This has led to consideration of a container port. Whether this opportunity (and others) eventuates remains to be seen.

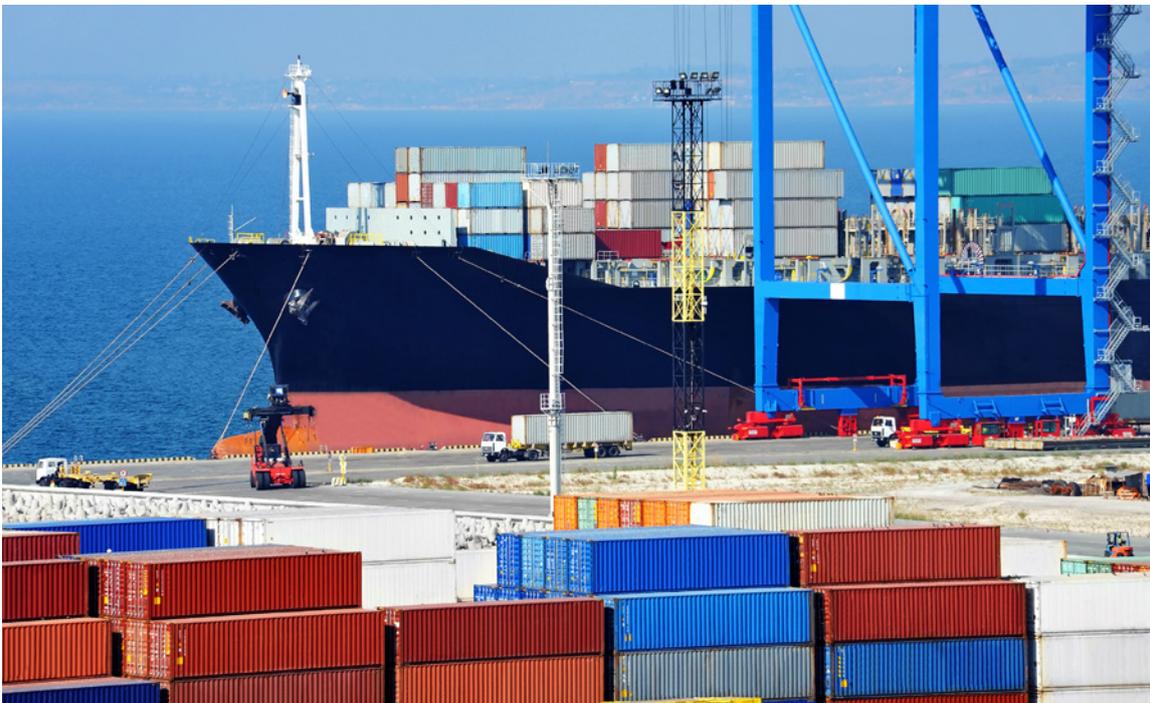
Port of Newcastle will have spare capacity and land as coal exports decline. This is an opportunity for both the port and its rail and road connections to expand into different types of uses. Port Kembla has geographical challenges for road and rail connections due to a steep escarpment. This needs careful consideration if

future container transport and other expansion is intended to occur. A rail connection through Port Kembla to Western Sydney via the long-planned Maldon-Dombarton rail line remains possible, but where and when additional capacity can best be accommodated should be considered.

Port regulation

In addition to infrastructure support, regulatory settings need to encourage the optimisation of operations at our ports, as happened at Newcastle many years ago, to support rapid growth in coal export volumes.

The Port Botany Landside Improvement Strategy (PBLIS) was largely introduced to address poor landside servicing and congestion around the port precinct. The Independent Review of PBLIS¹²² has recognised the success of PBLIS in addressing congestion and inefficiency issues including decreasing the average turnaround time for trucks and increasing the reliability for truck operators. However, the review also found



Container ship at Hutchison Ports

¹²² Willett, 2023, Independent Review Ports and Maritime Administration Act & PBLIS Final Report

that landside container movement could be carried out more efficiently and at lower cost to all involved than PBLIS currently allows. PBLIS has not supported change in line with other changes in the market, has a high administrative cost for all parties in the system and does not incentivise improved performance.

The PBLIS review made 21 recommendations which form a suite of enhancements to PBLIS, including the introduction of a new performance-based scheme. The intent of the recommendations is to establish current operating levels as a baseline benchmark but provide greater flexibility to encourage and support innovation and changes to operating models that deliver greater productivity. The centrepiece recommendation is to introduce a new scheme focused on performance and outcomes rather than prescriptive regulation, while preserving the safety net of regulation if required. Change will be necessary to move the projected volumes through the port and across the city.

The commercial relationships and issues of market power at the port are, like most elements of the freight system, complex. Charging across the supply chain needs to support ongoing viability of operations and investment in infrastructure, to remain fit for purpose, while maintaining cost-effective transport for our exporters and consumers.

The regulation of one charge at one connection point in the supply chain, the cap on rail servicing (lift rates) charges and booking cancellation terms at stevedores, has been recommended for removal given it is not successful in supporting growth in rail. Indeed, it potentially has an unintended consequence and impedes operational improvements that would deliver rail productivity and efficiency gains.

The recommendations made in the PBLIS review, excluding recommendation 18 to engage NSW Ports – the private port operator – as a service provider to administer elements of PBLIS, which has been ruled out by Government, need to be considered and implemented in a timely manner.

Stevedore charges and port charges

In January 2023, the Federal Productivity Commission Inquiry into the long-term productivity of Australia's maritime logistics supply chain¹²³ confirmed the NSW Government position, outlined in the submission to the Inquiry,¹²⁴ that stevedore charges should be considered at the national level, not by the jurisdictions individually.

Port charges, unlike stevedore charges, are applied by port operators (Port Authority of New South Wales, NSW Ports and Port of Newcastle) and are subject to price monitoring, but not price regulation. These charges, applied to services such as navigation and wharfage, need to balance supporting future investment in infrastructure while minimising the cost burden. Future investment in infrastructure ensures our ports are safe, competitive and fit for purpose (and the future). While the cost burden is ultimately reflected in the cost of our goods and value of our exports.

The Federal Productivity Commission also considered the oversight of port charges including the 'light touch' monitoring approach in NSW and found that there was no case for further regulation of port operators.¹²⁵ This finding was supported by the Independent Review of the Ports and Maritime Administration Act (PAMA) and PBLIS which found that independent price regulation of port charges was not suitable.¹²⁶

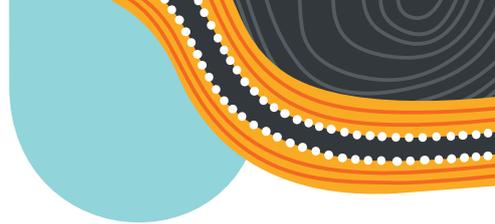
The recommendation by the Federal Productivity Commission to implement a mandatory industry code for stevedore charges at the national level should be considered by the Australian Government.

¹²³ Productivity Commission, 2022, Inquiry into Australia's Maritime Logistics System Final Report, p.43

¹²⁴ NSW Government, 2022, Submission to the Productivity Commission Inquiry Maritime Logistics System, p.7-8t

¹²⁵ Productivity Commission, 2022, Inquiry into Australia's Maritime Logistics System Final Report, p.41

¹²⁶ Willett, 2023, Independent Review Ports and Maritime Administration Act & PBLIS Final Report, p.70



4.3.4 Issues at terminals and depots

Vehicle access and operations

Road access to terminals and depots is better than rail access but is not without issues. Entry and exit must be planned to avoid congestion and allow easy entry and egress. Rail networks plan for this carefully so that train paths are not blocked and remain accessible. While roads can get very congested at terminals, causing lengthy and costly delays and safety issues for traffic.

Both large and small vehicles, including small vans, also have problems. Delivery to destinations in urban areas is regulated. Access to roads may be prohibited based on vehicle size. This must be known in advance and not imposed later when previously planned delivery and receipt activities become constrained or impossible.

Similarly, supermarkets and shopping precincts are subject to local restrictions and environmental noise requirements. However, after agreement, the requirements are often changed. For example, agreement and planning approvals allow the development of a large shopping precinct in a local area. Over time, denser urban development may lead to noise complaints and further restrictions on operations. The cost of such retrospective interventions must be understood.

‘Last mile operations’, including access for smaller freight vehicles, should be considered as part of the total freight chain. Retrospective restrictions on movements can be unexpected and constraining.



Current IMT capacity is limited and will not meet the growth demands in Greater Sydney

Rail market access

Rail access to IMTs is constrained by both the ownership of terminals and their capacity. While notionally open access and in Moorebank’s case, contractually so, the practical reality is that terminals operated by a specific rail freight operator do not seem to be used by other rail operators. It could be argued that rail operators use their terminal ownership to strengthen their market position.

This matter was partially tested in relation to the Acacia Ridge IMT. The ACCC challenged the terminal being purchased by Pacific National based on the likely effect of substantially lessening competition. However, this was not upheld by a Full Federal Court decision (and application for appeal was rejected by the High Court in December 2020), which relied on the rail operator’s access undertaking as providing assurance that competition would not be substantially lessened.¹²⁷

The size and capacity of terminals in Greater Sydney is a clear physical constraint. All intermodals, except Moorebank, face immediate capacity limits and are constrained in the length of train that can be received or sent outwards. Within this area, a train length of 600 metres appears to be an acceptable standard but for long interstate trains (1.3-1.8 kilometres), the length needs to be split on receipt before onward journeys through the Sydney Trains network and to Port Botany. This will be possible at Moorebank’s new interstate terminal but is impossible elsewhere. See section 2 for an overview of the terminal capacity.

The current levels of IMT capacity and service are limited and will not meet the growth demands in Greater Sydney. Moorebank has capacity to service the southwest but more capacity is required elsewhere.

¹²⁷ Australian Competition and Consumer Commission, 8 December 2020, ACCC’s Pacific National appeal will not be heard by the High Court | ACCC

4.4 Industrial land, planning, infrastructure and workforce

Strategic land use planning

Strategic land use planning, the planning for our cities, zoning of our lands and conditions related to the operations of our developments, needs to consider the critical nature of freight for our communities, businesses and industries.

New developments, growing communities, workplaces, industrial facilities and social places all have freight requirements. Planning for the movement and delivery of that freight is an integral part of successful planning. This is a fundamental consideration as the state prioritises addressing the housing shortage. Increasing density will require increasing volumes of freight. However, the rezoning of industrial land will potentially increase distances freight is required to travel resulting in increased congestion and interactions with trucks, emissions and cost of living.

The availability of industrial land for freight operations, including the handling, consolidation and distribution of goods, will dictate the nature of the freight task across the city and state. To accommodate increasing freight movements with increasing pressure on our shared networks requires strategic planning now and critical reservation of lands for industrial purposes, including freight and logistics.

Freight must be embedded in strategic land use planning across the state.

IMT infrastructure

Moorebank is the standout example of optimising the opportunity for IMTs to be successful; however, location is key and proximity matters. Most containers are transported from Port Botany to western Sydney. There is a missing link in the rail freight network and a dedicated freight line to western Sydney, combined with a large IMT, needs to be given consideration as a priority.

In addition, utilisation of existing infrastructure needs to be considered to ensure the available capacity on our networks is being optimised. The public and private investments in capital were all based on potential benefits and these benefits must be realised to support pressure on industrial land, planning and demand for infrastructure.

New infrastructure may be required to support western Sydney and growth of freight across metropolitan Sydney.

However, new investment is not the only solution. Better use of existing infrastructure is possible and should be considered to optimise the freight logistics chain and the outcomes for the community.

Freight industry workforce pathways

The current workforce needs to expand and change to handle the existing and growing task. A shortage of truck drivers is evident as is the lack of highly skilled workers with the data analytics, technology and freight operations knowledge necessary to improve productivity, sustainability and resilience.

Before the COVID-19 pandemic, freight logistics supply chains were the hidden enabler. The pandemic brought them to centre stage and now the industry is recognised as critical to protecting and enhancing our way of life.

A new perception is required to overcome historical lack of enthusiasm for a career in supply chain freight logistics. The workforce also needs to diversify. It is one of the fastest aging male dominated workforces and needs to upskill to manage the new technologies expected and increasing sophistication of the industry and customer expectations. Greater use of data and telemetry, more advanced trains and trucks and measures to lower emissions, all add to the challenge.

Government also has a role to support the industry to develop the skills, capability and capacity to meet its needs and deliver on economic and community objectives.

Career paths within the freight industry are required to attract a more diverse and skilled workforce.

5 Discussion questions



5 Discussion questions



5.1 Consultation process and timing

As part of this first phase of consultation, you are invited to make a written submission via our online portal in response to each of the below queries. Please note that you are requested to limit the length of your submission to 10 pages.

Transport for NSW and the Panel will meet with representatives from a cross-section of key stakeholders throughout the consultation period to discuss:

- responses to this Consultation Paper
- feedback relating to the 20 Port Botany Landside Improvement Strategy (PBLIS) Recommendations
- the draft Heavy Vehicle Access Policy

Following consultation, policy options will be developed and an Options Paper published for the next round of consultation, currently intended to take place later this year.

5.2 Policy and guiding principles

The Panel has been asked to assist in developing guiding principles and policy about six general matters:

1. The role of the NSW Government and Australian Government and industry in making a step change in freight transport.
2. The major ports in NSW.
3. The road and rail networks.
4. The supporting metropolitan and regional intermodal terminals (IMTs) and other enabling transport infrastructure.
5. Considerations about freight in the

identification and use of industrial land.

6. Embedding freight considerations into transport planning, prioritisation and investment.

Discussion question one:

1a. In relation to the above six matters, are there particular aspects of policy that are causing challenges to your business operations or efficiency?

1b. In relation to the above six matters, are there particular actions – short, medium or long-term, that you think the NSW Government alone or together with the Australian Government should take to support the efficient operations of your business?

Some questions for consideration in developing your response:

- Is there a significant change needed in the freight industry or in the way the NSW Government and the Australian Government support this task and if so, in which particular area(s)?
- What actions would have the greatest impact in achieving a productive, sustainable and resilient freight system?
- What role do you see for regulations at ports that govern truck, rail and stevedore movements?
- Working together, are there particular principles or approaches that the NSW and Australian Governments should apply in relation to the road and rail networks?
- What would improve interoperability across the freight system and what are the priorities?
- What role do IMTs play in the freight network and do you have suggestions for how this could be improved?

- When working effectively, what role would each level of government play in the freight system? Consider the development of intermodals, distribution centres and depots, refuelling sites, empty container parks, truck delivery schedules and connecting freight corridors?
- What technology or innovations are currently underutilised or would have the greatest benefit to the NSW freight system?
- Is urban encroachment and the rezoning of industrial land for other purposes impacting the freight task -how? What are the long-term implications? How could various levels of government assist with better land use planning?
- What role do you see for land use planning for port activity and managing the rapidly growing and changing freight task?
- What role do you see for both the NSW and Australian Governments in transport planning and investment? What principles should apply to the planning process and in prioritising investments?
- How well are workforce issues being managed and what is the role of government in this? What are the main workforce risks facing the industry?



Shipping containers being loaded onto freight train at Yennora Intermodal Terminal

5.3 Specific matters for NSW freight policy

Your response on these specific matters are welcome. You can answer all the questions below or choose to only provide input on particular areas. [Response length to section limited to 5 pages]

Discussion question two:

Do you have recommendations or issues to note about rail freight policy?

Some questions for consideration in developing your response:

- Do you find the current rail freight policy is fit for purpose? Does it deliver an effective network for your freight delivery?
- What changes would you suggest for the future?
- To what extent do different rail tasks (such as the movement of bulk goods or containers) support a modal shift to rail?
- How do you see Inland Rail impacting or changing your operations? What should the NSW Government do to harness the benefits Inland Rail will deliver?
- Have you considered costs and benefits (including public costs and benefits)?

Discussion question three:

Do you have recommendations or issues to note about ports?

Some questions for consideration in developing your response:

- Port operations will change with increases in container trade and the decline of coal exports. What other changes do you anticipate?
- What are the best transport outcomes to facilitate these changes if they are desirable?

Discussion question four:**Do you have recommendations or issues to note about road freight?****Some questions for consideration in developing your response:**

- What are the most important safety, sustainability and productivity considerations for road corridors?
- How can road funding be made more sustainable? Do you have specific comment on road charges and funding?

Discussion question five:**Do you have recommendations or issues to note about decarbonisation or changing technology?****A question for consideration in developing your response:**

- How can freight networks be improved to handle the growing freight task while utilising changing technology and lowering emissions?

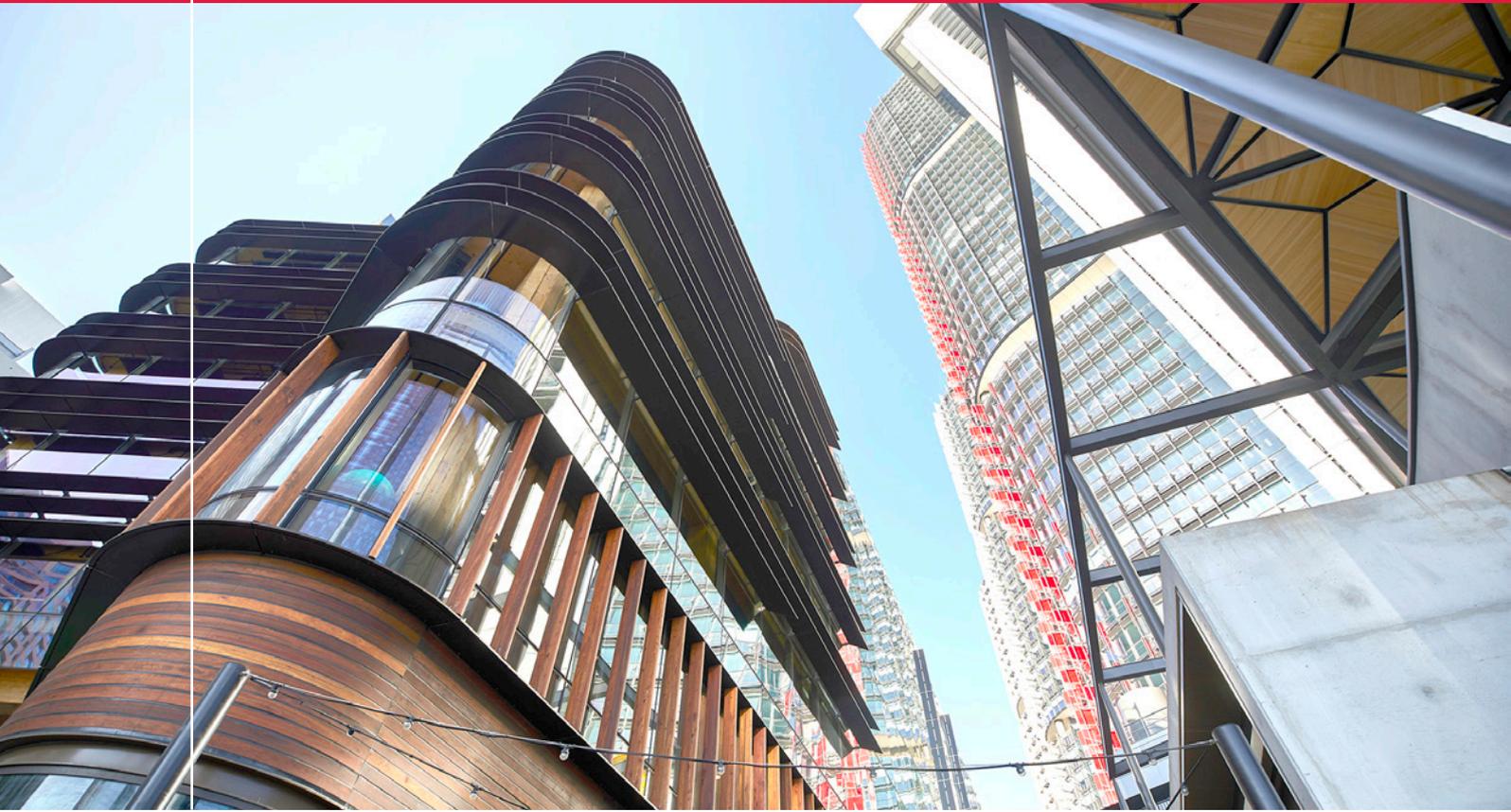
Discussion question six:**Do you have recommendations or issues to note about strategic land use planning and industrial land?****Some questions for consideration in developing your response:**

- How can strategic land use planning better accommodate and plan for urban freight?
- Is the value of freight logistics and transport adequately recognised in building supply chain resilience?
- Do you have any relevant suggestions about improving and implementing strategic land use plans?

Discussion question seven:**Does the NSW Government provide adequate consideration of freight matters?****Some questions for consideration in developing your response:**

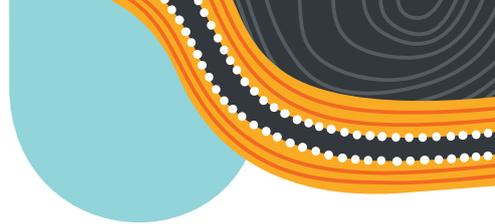
- Is stakeholder feedback incorporated into government policy direction?
- Do you have access to contacts within Transport for NSW in relation to freight matters?
- What do you consider government should do to improve your access to decision makers and enable you to influence reforms being considered?
- Are there structural changes required within the government to integrate and optimise freight outcomes?

6 Appendix: Acronyms



6 Appendix: Acronyms

Term	Description
ACCC	Australian Competition and Consumer Commission
ACFS	ACFS Port Logistics
ARTC	Australian Rail Track Corporation
AV	Automated Vehicle
CRN	Country Regional Network
FIAB	Freight Infrastructure Advisory Board
GCC	Greater Cities Commission
HVCN	Hunter Valley Coal Network
HVNL	Heavy Vehicle National Law
IMT	Intermodal Terminal
IOT	Internet of Things
IPART	Independent Pricing and Regulatory Tribunal
ITS	Intelligent Transport Systems
MFN	Metropolitan Freight Network
MRN	Metropolitan Rail Network
Mtpa	Million tonnes per annum
nes	Not elsewhere specified
NHVR	National Heavy Vehicle Regulator
NSW	New South Wales
NTC	National Transport Commission
OSOM	Oversize Overmass
PBS	Performance Based Standards (PBS) is a national heavy vehicle scheme designed to help the industry become safer and more productive.
PBLIS	Port Botany Landside Improvement Strategy
RIMS	Rail Infrastructure Managers
REZ	Renewable Energy Zone
RORO	Roll on and roll off
SMP	Sydney Metropolitan Pipeline
TEU	A twenty-foot equivalent unit (TEU) is the standard unit of measurement for shipping containers.



Combine header harvesting grain

Freight Policy Reform: Consultation Paper

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