

4.0 International gateways

STRATEGIC OBJECTIVE

Connect Sydney and NSW regions to national and global markets and suppliers

KEY CHALLENGES

- Ensure landside infrastructure supports rapid growth in freight and air travel at Port Botany and Sydney Airport
- Get the right infrastructure in place to move more freight by rail
- Protect existing and future freight corridors from inappropriate development
- Address constraints and ‘pinch points’ on routes to major export gateways
- Plan and prepare for the new Badgerys Creek Airport

OPPORTUNITY

KEY Infrastructure NSW RECOMMENDATIONS

COSTS & FUNDING

Manage the growing freight task at Port Botany

- Develop a detailed proposal for a Sydney Gateway linking the new WestConnex M5 to Sydney Airport and Port Botany
- Assess and prioritise projects that ensure efficient road connections from the front gate at Port Botany to Moorebank Intermodal Terminal

Cost of planning is not material
Cost of planning is not material

Support the modal shift from road to rail

- Encourage the ARTC to increase the capacity of the Southern Sydney Freight Line to enable additional train paths to Moorebank
- Reserve the corridor and site for the planned Western Sydney Freight Line and Eastern Creek Intermodal Precinct and commence assessment of these proposals

Assume delivery by ARTC based on user funding model
No assessment of land acquisition costs has been made
Cost of planning is not material

Secure freight paths to Port Kembla

- Assess and prioritise projects that secure freight paths for regional exporters at Port Kembla
- Encourage the ARTC to amplify the Southern Sydney Freight Line between Moorebank and Macarthur to enable regional exporters to secure freight paths to Port Kembla
- Gauge private sector interest in the potential to construct, operate and maintain the Maldon Dombarton rail link

Cost of planning is not material
Assume delivery by ARTC based on user funding model

Assume delivery by the private sector

Maximise the economic potential of Badgerys Creek Airport

- Take action to maximise the potential of the new Badgerys Creek Airport, including protecting the future operating capacity of the airport, preserving land for complementary activities and protecting future transport corridors related to the site

Cost of planning is not material

Remove rail freight constraints at Newcastle

- Reserve the Lower Hunter Freight Rail Corridor as a priority

No assessment of land acquisition costs has been made

Snapshot

- Port Botany, Port Kembla and the Port of Newcastle handle approximately 44 per cent of the NSW freight task by volume.
- Mining makes up half of the freight task and is anticipated to grow at 4 per cent a year to 2031.
- Rail mode share for containers through Port Botany fell from 21 per cent to 14 per cent in the last 10 years.
- Approximately 85 per cent of containers originate or are destined for locations within 40 kilometres of Port Botany.
- The Port Botany Landside Improvement Strategy improved on-time performance of trucks from 72 per cent to 93 per cent over the last four years.
- Container volumes are anticipated to grow by 5-8 per cent a year over the next 25 years.
- Sydney Airport moves more than 38 million passengers and 630,000 tonnes of airfreight annually and this is forecast to grow by 2031 to 70 million passengers and 965,000 tonnes of airfreight annually.

4.1 Summary

NSW's international gateways are vital economic assets. Efficient, reliable access to and from these gateways supports some of the State's most important economic journeys and is a critical element in sustaining the future productivity and competitiveness of Sydney and NSW.

As the freight task grows, the major infrastructure challenge facing our international gateways is the limitations of landside infrastructure – the roads and railway lines – that connect the gateways to the Sydney metropolitan area and regional NSW. As the freight task grows, constraints on this infrastructure will undermine the competitiveness and productivity of exporters, as well as freight and logistics businesses.

Infrastructure NSW is urging a more concentrated focus on landside infrastructure programs to improve rail and road freight distribution out of Port Botany, recognising that more containers will need to be transported to Western Sydney as most new distribution centres and warehousing will be located in the city's south-west.

While the WestConnex scheme will mitigate the road transport challenges in the Port Botany and Sydney Airport precinct, road congestion continues to be a significant issue affecting productivity at the port and airport. Infrastructure NSW recommends commencing work to assess and prioritise projects that will improve the efficiency of road connections from the front gate at Port Botany to the new WestConnex M5 and from the port to Moorebank Intermodal Terminal.

The NSW Government has a goal of doubling rail's share of container movements through the port (from the 2010/11 level of 14 per cent) and has made investments designed to encourage the movement of containers by rail, taking advantage of available capacity on the rail network. However, this has proven challenging because road freight continues to be more cost effective and reliable for the short haul journeys that make up most port container movements.

The opening of new intermodal terminals at Enfield and Moorebank and the expanded use of existing terminals at Chullora, Minto and Yennora may provide an impetus for movement of containers by rail within the Sydney metropolitan area. A number of capital projects and operational improvements could be undertaken in partnership with the Commonwealth Government and the private sector. Work should also commence to assess options for the full development of the planned Western Sydney Freight Line and Eastern Creek Intermodal Precinct, with the corridor and site for these important projects being reserved now.

Even with more freight using the rail network, most movement of cargo and passengers to and from the gateways will remain by road. Infrastructure planning will need to ensure there are adequate linking roads that connect to the motorway.

Once Port Botany reaches capacity, Port Kembla will become NSW's second container port, in addition to continuing to accommodate an increasing number of bulk exporters and motor vehicle imports. Growth at

Port Kembla will require rail upgrades in the longer term to secure freight paths for regional exporters, given the increasing number of passenger trains on the shared network. Infrastructure NSW recommends that work commence immediately on projects designed to secure these freight paths to ensure they are available and unconstrained when needed.

Action should also be taken to reserve the planned Lower Hunter Freight Rail Corridor, which will divert freight services from urban areas and improve journey time and reliability for regional and interstate rail freight movements through the Newcastle region.

Infrastructure NSW notes that planning is under way to construct a second airport in Western Sydney by the mid to late 2020s. Accordingly, planning should continue to develop the significant landside infrastructure that will be needed to support Badgerys Creek Airport and connect the proposed new airport to the wider Sydney metropolitan area.

4.2 Progress since 2012

The past two years have seen significant developments associated with the State's international gateways.

Major improvements have taken place in the ports and logistics sector:

- The sector has undergone significant change in ownership and operators, reflecting increased aggregation in the market.
- In May 2013, the NSW Government awarded a 99 year operating lease to NSW Ports for Port Botany and Port Kembla and in April 2014, a 98 year operating lease was awarded to Port of Newcastle Investments.
- The Cargo Movement Coordination Centre, established by Transport for NSW in July 2014, is building on the Port Botany Land Side Improvement Strategy and expanding its scope to the wider NSW network. The first stage focused on improving road freight performance, reducing truck turnaround times from 53 minutes in early 2011 to an average of 27 minutes in 2014.⁶⁰
- The Port Botany Expansion Project has been completed, involving the construction of a third container terminal that has been leased to Hutchison Port Holdings. This terminal opened at the end of 2013.

60. Transport for NSW 2014, Cargo Movement Coordination Centre Weekly Web Performance Report

Enabling works have begun for the WestConnex scheme, with \$282 million provided to improve freight and traffic flows by:

- Replacing the General Holmes Drive rail level crossing with a road underpass that links General Holmes Drive, Botany Road and Wentworth Avenue
- Improving Mill Pond Road intersections with General Holmes Drive and Botany Road
- Widening Joyce Drive and General Holmes Drive between O'Riordan Street and Mill Pond Road to three lanes in each direction.

Measures to improve passenger transport to and from the airport precinct have been implemented, including cheaper and more frequent passenger rail services, new bus services to the airport from southern and northern Sydney and more bus and transit lanes and traffic signal priority systems.

A procurement process for Moorebank Intermodal Terminal has commenced. The Commonwealth Government's Moorebank Intermodal Company called for registrations of interest in May 2013 and direct negotiations are under way with the Sydney Intermodal Terminal Alliance. The Environmental Impact Statement is on exhibition until 8 December 2014.

In 2014, the Government announced Badgerys Creek as the site of a second airport in the Sydney basin. The NSW and Commonwealth Governments are delivering a \$3.5 billion program to upgrade major and local roads around the new Badgerys Creek Airport including upgrades to Bringelly Road, The Northern Road and the Elizabeth Drive Corridor.

4.3 Ongoing challenges

The major infrastructure challenge to NSW's international gateways continues to be constraints on the landside roads and rail lines that connect the gateways to Sydney and regional NSW. Reducing congestion on the transport network and tackling specific pinch points and constraints will support economic growth and productivity and encourage more productive land use.

4.3.1 Rapid growth in freight and air travel at Port Botany and Sydney Airport

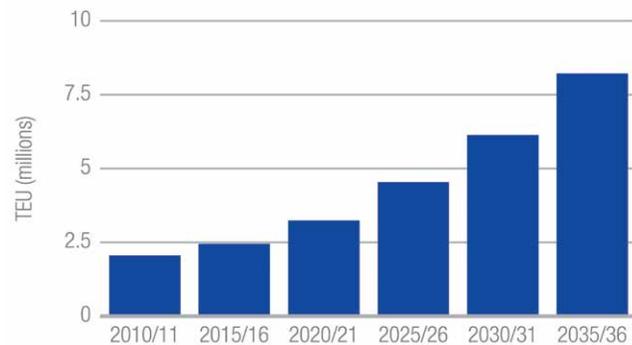
A growing population, changing consumer demands and the increasing needs of business and industry will likely require a significant increase in capacity at Port Botany and Sydney Airport over the next 20 years.

Sydney Airport moves more than 38 million passengers and 630,000 tonnes of airfreight annually and this is forecast to grow by 2031 to 70 million passengers and 965,000 tonnes of airfreight annually.⁶¹

NSW Ports, the lessee of Port Botany and Port Kembla, forecasts that annual container growth at Port Botany could be as high as 6 per cent, reaching 2.9 million TEUs by 2018.⁶²

These significant increases in container freight and airport passengers will require improvements to the road and rail network.

61. Sydney Airport Corporation Ltd, 2014, Sydney Airport Master Plan 2033
62. NSW Ports, 2014, Five Year Port Development Plan

Figure 4.1 Projected growth in container movements at Port Botany

Source: NSW Bureau of Freight Statistics based on NSW Ports TEU growth forecasts

4.3.2 Physical and operational constraints at Sydney Airport

The capacity for Sydney Airport to continue to grow to meet demand is affected by a number of factors.

The site measures 907 hectares, small by comparison to other major airports in Australia and overseas. Any further extension of the site is limited by urban development and by Botany Bay to the south, the Cooks River to the west and Port Botany to the south-east.

The particular configuration of the runways, taxiways, terminals and aprons arises from the staged development of the site over time and the constraints of the site. It does not reflect the optimal layout for terminals and runways at a major airport.

However, in the near term, there are simple regulatory changes that the Commonwealth Government can make to improve capacity at Sydney Airport. This includes increasing the flight cap from 80 to 85 movements per hour in peak periods and increasing flight movements in the curfew shoulder to the maximum allowed under Commonwealth legislation.

4.3.3 A congested road network is increasingly impacting delivery of containers

Growing congestion across the metropolitan road network is having an increasing impact on productivity in the Port Botany and Sydney Airport precinct.

Road freight is generally more cost effective and reliable for most short haul journeys. As such, most of the containerised freight moving between Port Botany and other parts of Sydney does so by road. Current estimates are that only 14 per cent of container freight at Port Botany is moved by rail.

Some 85 per cent of containers moving through Port Botany originate or are destined for locations within 40 kilometres of the port.⁶³ Western Sydney is the major destination for import containers and its importance as a destination is forecast to increase.

The metropolitan road network on which port containers currently travel is becoming increasingly congested and experiences variable travel times during peak periods. For example, Botany Road has an average speed of 25 kilometres per hour in the morning peak, while traffic on O'Riordan Street in the evening peak slows to 21 kilometres per hour.⁶⁴

Port freight traffic is a small component of this congestion, but attributes a high value to time relative to other traffic. Along the M5, all truck traffic represents 13 per cent of daily traffic and just 3 per cent of port container traffic.⁶⁵

The WestConnex scheme will cut traffic congestion, although there is still a need to ensure there are high capacity links from Port Botany and Sydney Airport direct to the motorway. Significant private sector beneficiaries should contribute to the development of such linking infrastructure.

63. Transport for NSW

64. Roads and Maritime Services 2013, Key Roads Performance Report
65. Bureau of Freight Statistics 2014, Sydney Commercial Vehicle Video Survey

4.3.4 The potential for a modal shift from road to rail freight at Port Botany

The NSW Government has set a goal in the NSW 2021 plan to double rail’s mode share of container movements through the port from its 2010/11 level of 14 per cent.

The opening of new intermodal terminals at Enfield and Moorebank and the expanded use of existing terminals at Chullora, Minto and Yennora, together with more reliable rail services, may improve the economies of short haul rail freight. Currently, a shortage of intermodal terminal capacity limits options for the use of rail for metropolitan container movements. Recent market changes in operations and investment priorities may also have an impact on increasing rail modal share.

The majority of containers transported to and from Port Botany have their origin or destination in western Sydney. This pattern will intensify over time, as most new industrial land, including distribution centres and warehousing, will be located in south west Sydney (including the Western Sydney Employment Area) and, to a lesser extent, in the north west.

A number of capital projects and operational improvements could be implemented in partnership with the Commonwealth Government and the private sector, including the following:

- The Port Botany Line could be duplicated from Mascot to Port Botany and the signalling of the Cooks River Master Siding to Mascot could be extended. This would deliver increased rail capacity serving the terminals at Port Botany and improved ability to stage freight trains from the Enfield marshalling yard and adjacent Intermodal Terminal.

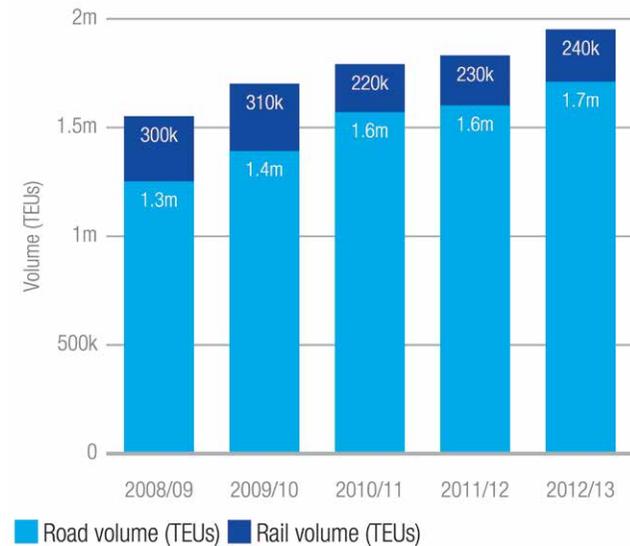
The estimated cost of the project is \$195 million.

- Amplification of the Southern Sydney Freight Line (SSFL) through a passing loop at Warwick Farm and the extension of an existing loop at Leightonfield could also deliver capacity benefits by enabling additional train paths to the Moorebank Intermodal Terminal.
- Removal of a key rail pinch point at Chullora Junction could improve the efficiency of Port Botany freight distribution by rail, in particular supporting the movement of containerised freight to the Moorebank Intermodal Terminal.
- Roads around the Moorebank Intermodal Terminal could be reconfigured to improve connectivity from the terminal to the major industrial and distribution centres between Eastern Creek and Campbelltown. Potential projects include the following:

- a solution to the M5 ‘weave’ caused by vehicles entering the motorway at Moorebank Avenue and vehicles exiting onto the Hume Highway
- works to enhance the Cambridge Avenue corridor to create a new link between the site and the M7 motorway
- the upgrade of a number of intersections along the Hume Highway between the M5 and Orange Grove Road to the north.

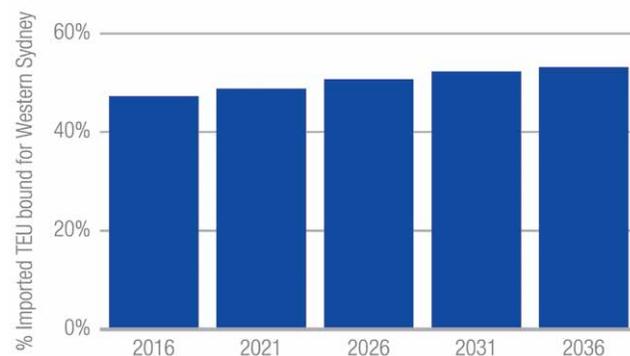
It should be noted that over the longer term some of these upgrades will also be required to support containerised rail freight bound for a potential future Eastern Creek Intermodal Terminal on a proposed Western Sydney Freight Line (WSFL).

Figure 4.2 Port Botany landside volume



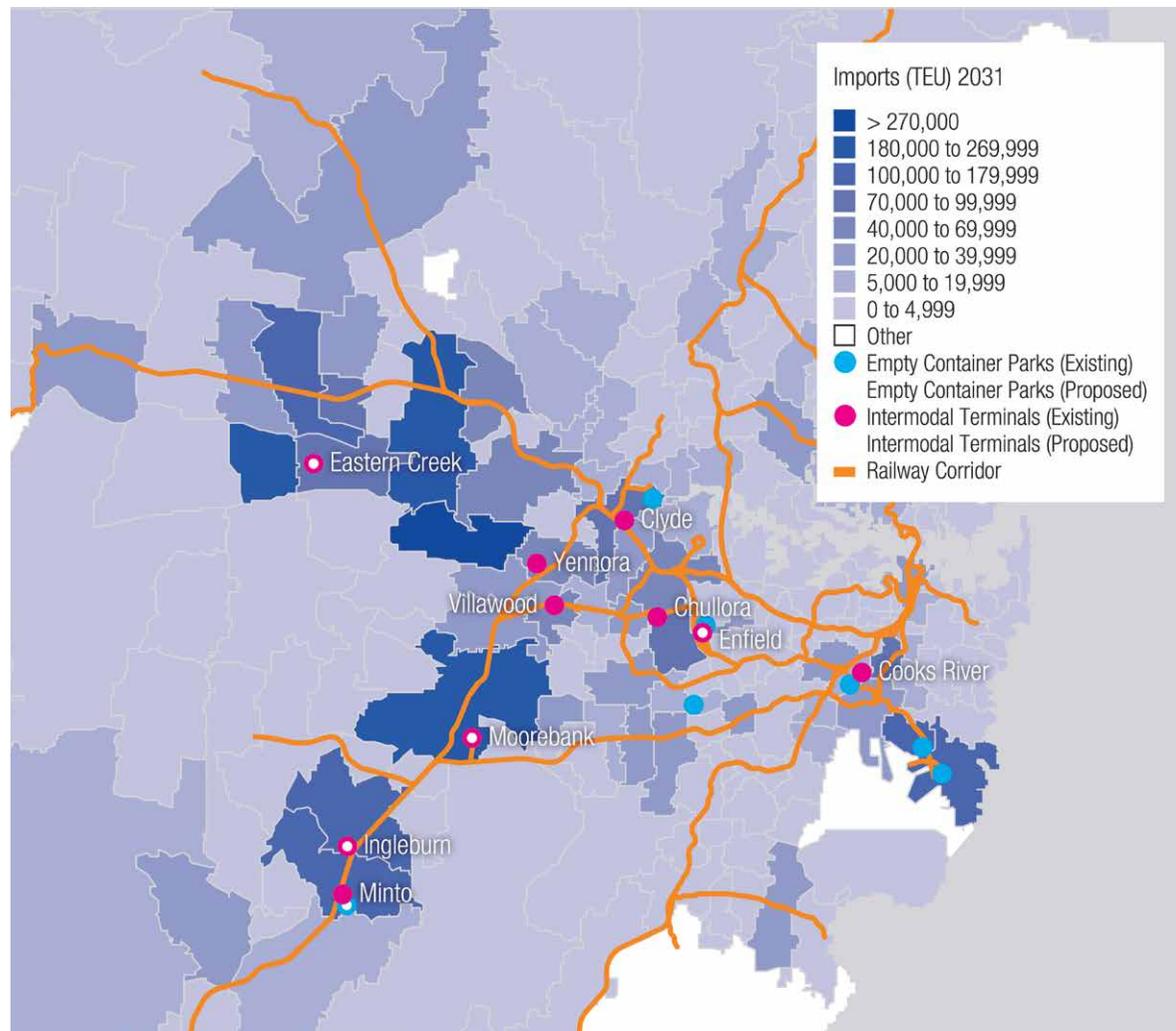
Source: NSW Bureau of Freight Statistics

Figure 4.3 Growth in Western Sydney container demand



Source: NSW Bureau of Freight Statistics

Figure 4.4 Import container demand 2031



Source: NSW Bureau of Freight Statistics

Recommendation

Infrastructure NSW recommends that the WestConnex Delivery Authority, in partnership with Sydney Airport and other strategic landholders, develop a detailed proposal for a Sydney Gateway linking the new WestConnex M5 to Sydney Airport and Port Botany.

Recommendation

Infrastructure NSW recommends that work commence to assess and prioritise projects that support freight movements from Port Botany to Moorebank Intermodal Terminal (including duplication of the Port Botany Line, upgrade of Chullora Junction and reconfiguration of roads around Moorebank).

Recommendation

Infrastructure NSW recommends that the Australian Rail Track Corporation (ARTC) be encouraged to increase the capacity of the SSFL to enable additional train paths to Moorebank, including a passing loop at Warwick Farm and the extension of an existing loop at Leightonfield.

4.3.5 Separating freight and passenger rail paths – the Western Sydney Freight Line

An additional challenge in the modal shift from road to rail is the regular disruption to freight trains running to and from Port Botany, as they currently operate on the shared Metropolitan Rail Network (MRN).

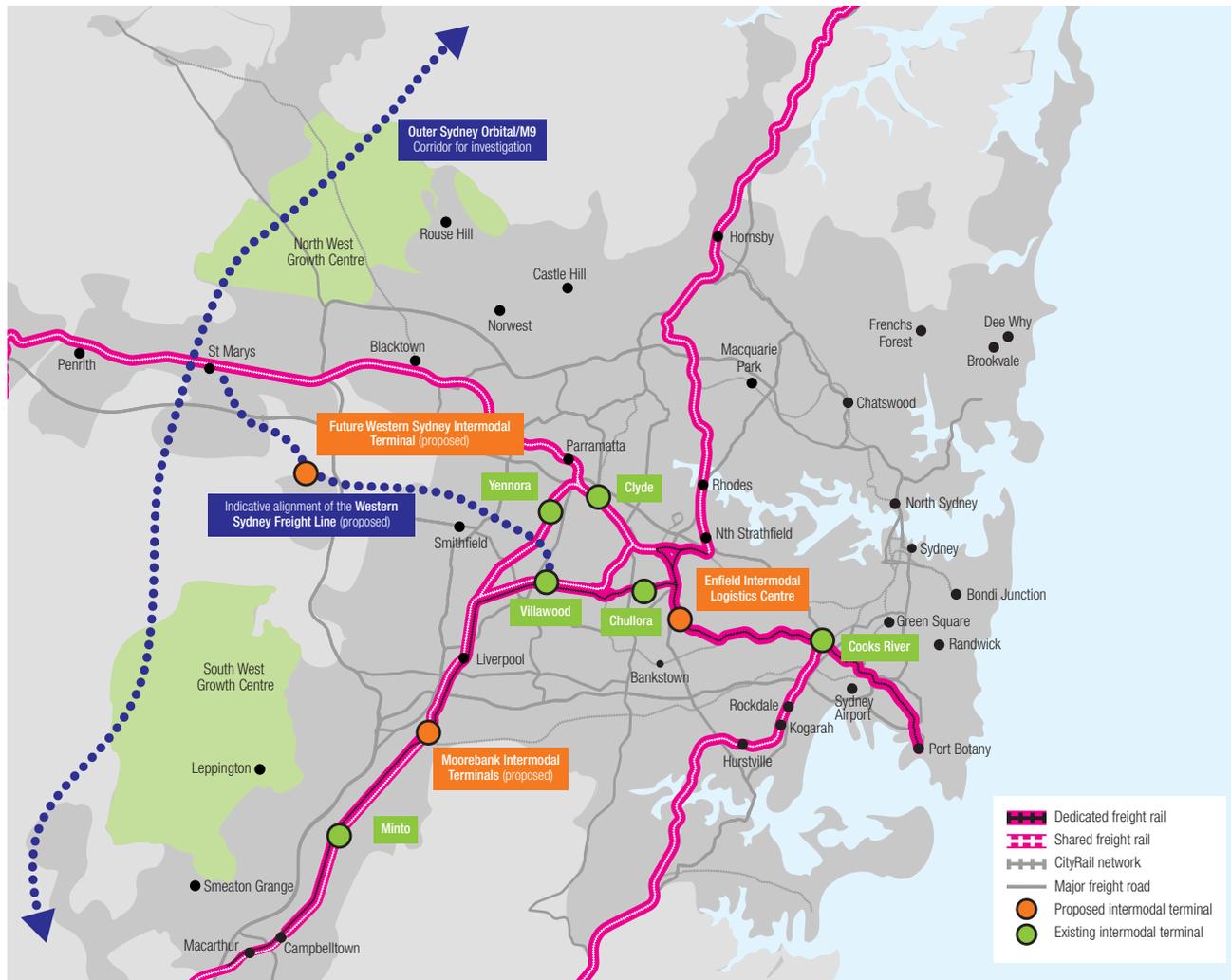
Passenger train services on the MRN are increasing and are given priority across the day, meaning the efficiency of freight trains will gradually decline. Improving the reliability of rail freight in the metropolitan area requires the ‘unwinding’ – or improved separation – of the passenger and freight rail use of the network.

The planned WSFL is a new dedicated freight line connecting the Main West Rail Line to the SSFL and new intermodal precinct at Eastern Creek. It will service the growth areas of Western Sydney that connect to Port Botany and regional producers that export from Port Kembla, as well as meeting demand from the businesses in the Western Sydney Employment Area (WSEA) for movement of containers by rail.

Currently, the WSEA is dependent for its freight needs on heavy vehicle transport. By 2036, 4.3 million truck kilometres a year could be saved through the WSFL and terminal precinct project.⁶⁶

66. Bureau of Freight Statistics

Figure 4.5 Proposed projects across the Sydney freight network



Source: Transport for NSW

Preservation of the corridor and site is required due to rapid urban development in the region, in particular in the WSEA. This will avoid the need for costly acquisition and retrofitting of urban areas to accommodate future freight rail access. It will also ensure that sufficient capacity is available for warehousing and empty container facilities close to the proposed intermodal terminal at Eastern Creek. The estimated project cost is \$2.2 billion.

Recommendation

Infrastructure NSW recommends reserving the corridor and site for the WSFL and Eastern Creek Intermodal Precinct.

Recommendation

Infrastructure NSW recommends that work commence to assess the full development of the WSFL and Eastern Creek Intermodal Precinct.

4.3.6 Maximising the economic potential of Badgerys Creek Airport

Over the next 10-20 years, the development of Badgerys Creek Airport will stimulate long-term economic activity in Western Sydney. Commonwealth Government projections indicate that Badgerys Creek Airport has the potential to create 35,000 jobs by 2035, increasing to 60,000 jobs in the longer term.⁶⁷

Investment and action will be needed across a number of areas to protect the future operating capacity of Badgerys Creek Airport, preserve land for complementary activities and ensure efficient, reliable access to the airport.

67. Media Release 2014, Prime Minister of Australia, 'Western Sydney Airport to deliver jobs and infrastructure'

Recommendation

Infrastructure NSW recommends the NSW Government take action to:

- Protect the future operating capacity of Badgerys Creek Airport by ensuring adequate buffers for areas affected by aircraft noise and sufficient airspace for future aviation needs
- Preserve land for complementary airport activities, including freight-related uses such as a new intermodal terminal and associated warehousing and distribution centres, and a jet fuel pipeline to service the airport
- Identify and preserve future transport and infrastructure corridors related to the airport site, including the extension of the South West Rail Link (currently undergoing public consultation)
- Develop new strategic employment corridors aligned with transport infrastructure investments that will service Badgerys Creek Airport

4.3.7 Connecting regional exporters to Port Kembla

Port Kembla supports bulk exporters, including grain and mining producers, and the import of motor vehicles and machinery. It is Australia's largest export grain terminal and the second largest coal export terminal in NSW.

The port plans to accommodate much of the State's future vehicle imports and serve as the major bulk export freight port for large parts of regional NSW. In the longer term, it will become NSW's second container port once Port Botany reaches capacity.

Currently, a significant proportion of freight travelling to and from Port Kembla is transported by rail on either the Illawarra Line or the Moss Vale to Unanderra Line. The rail network has around 60-65 per cent modal share by volume for bulk exports through Port Kembla.

A number of constraints exist on both of these lines. The Illawarra Line is shared between freight and passenger rail paths. This results in disruption to freight services and consequent problems in efficiency, reliability and cost. Plans for increased off-peak passenger services will further reduce capacity for freight movements on this line. Also, steep gradients and tight curves restrict freight movements on the rail lines.

A number of potential rail projects could secure freight paths connecting regional exporters to Port Kembla by reducing the impact of constraints on freight movements from Sydney's south west in the context of a growing passenger rail task. The following projects should be assessed and prioritised:

- Moss Vale – Unanderra capacity enhancements including the extension of four existing passing loops (with an estimated project cost of \$49 million)
- Dapto to Unanderra duplication (with an estimated project cost of \$150 million)
- Macarthur to Moss Vale capacity enhancements including the construction of two passing loops (with an estimated project cost of \$385 million)
- Duplication of the Southern Sydney Freight Line between Moorebank and Macarthur (\$772 million)
- Development of the Maldon Dombarton Railway – the NSW Government has recently released a Registration of Interest process to gauge private sector interest in the potential to construct, operate and maintain the railway (with an estimated project cost of \$650-700 million).

These projects would provide a dedicated freight line access from the Main West Rail Line, and possibly the WSFL, almost all of the way to Port Kembla, as well as providing better access from the south west via Moss Vale and catering for a growing demand for passenger services.

Figure 4.6 Road and Rail Network Supporting Port Kembla



Source: Roads and Maritime Services

Recommendation

Infrastructure NSW recommends that work commence to assess and prioritise projects that secure freight paths for regional exporters at Port Kembla (Moss Vale – Unanderra capacity enhancements, Dapto to Unanderra duplication and Macarthur to Moss Vale capacity enhancements).

Recommendation

Infrastructure NSW recommends that ARTC be encouraged to amplify the SSFL between Moorebank and Macarthur to enable regional exporters to secure freight paths to Port Kembla.

Recommendation

Infrastructure NSW recommends that work commence to gauge private sector interest in the potential to construct, operate and maintain the Maldon Dombarton rail link.

4.3.8 Regional road and rail connections to the Port of Newcastle

Port Newcastle is the world's largest coal export port. The NSW Government has entered into a 98-year lease with Port of Newcastle Investments to operate the port.

The related Hunter Valley coal chain consists of 35 coal mines owned by 11 coal producers.⁶⁸ The operator of Port Newcastle is required to work with coal producers and service providers through the Hunter Valley Coal Chain Co-ordinator (HVCCC) in relation to the transport of coal from mine to ship. The HVCCC is tasked with day-to-day planning and scheduling of the logistics chain to maximise throughput volumes, minimise costs and ensure long-term capacity alignment.

The ARTC operates the rail network and ensures that rail corridor capacity stays ahead of coal demand. Its recent forecast for mining-related freight has identified improvements to the rail network to accommodate prospective volumes of up to 277 mtpa. This would also require the proposed Terminal 4 on Kooragang Island or other terminal capacity expansion in the near term.

Although the private sector and ARTC are responsible for the efficient operation of Port Newcastle and the rail supply chain, there is scope for the NSW Government to improve the roads that enable movement of trucks from the port to deliver materials to the mines. This issue is addressed in Chapter 5.

68. Hunter Valley Coal Chain Coordinator, www.hvcc.com.au/AboutUs/Pages/History.aspx

The Lower Hunter Freight Rail Corridor (LHFC) project will provide a dedicated freight link that bypasses Newcastle, providing improved regional and interstate links. The LHFC is also critical in providing sufficient capacity to accommodate the expected growth in freight demand, which is forecast to double by 2031.

The existing rail network to and from Newcastle is subject to a number of operational constraints, including freight and passenger train interactions, and curvature and gradients that inhibit efficient transport options. Both regional and interstate freight rail movements are reduced in their efficiency as they travel through the Newcastle region.

The LHFC diverts freight services from sensitive suburban areas in the Newcastle region, delivering journey time and reliability improvements for existing and projected regional and interstate rail freight. It would also allow most freight trains to avoid the Adamstown and Islington level crossings. It therefore delivers consequential benefits to urban amenity and liveability by reducing noise and road congestion for the current and proposed residential areas in the Newcastle region.

Urgent action is required to reserve this corridor to protect it from any development which may impact on the future delivery of the project. This will require further investment in project definition, design, communication and business case development in order to progress the planning approval process.

Recommendation

Infrastructure NSW recommends that reservation of the Lower Hunter Freight Corridor be progressed as a priority.