THE PLANNING CHALLENGES OF DEVELOPING URBAN INTERMODALS:
The case of Moorebank in South West Sydney

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SUMMARY

Projections indicate significant future growth in containerised freight coming into, and moving throughout Australia. To address this there is a clear economic and environmental case for a mode shift for containerised freight from trucks to trains to improve supply chain efficiency and address urban road congestion. This is especially so in relation to the movement of freight from the nation’s major container ports to its destination in the metropolitan industrial areas.

There is now a considerable policy focus on growing the rail mode share for urban containerised freight transport, and planning is underway to develop the metropolitan freight network in Sydney and elsewhere.

Intermodal terminals are an essential component of any containerised freight rail distribution network, and projected demand suggests that substantial intermodal capacity will be needed across Australia’s major urban centres. However, identifying suitable sites for intermodal terminals is extremely difficult.

This paper explores the general challenges of accommodating intermodal terminals in large urban areas, and presents the case of the Moorebank intermodal terminal in South West Sydney, planned to be the largest of its kind in Australia. The paper examines some of the planning and environmental issues that faced the project in its planning phase, and examined how the environmental assessment and planning process undertaken by WSP (the consultant) for the Moorebank Intermodal company (the proponent) dealt with some of these challenging issues.

PART A – THE ECONOMIC, PLANNING AND ENVIRONMENTAL CONTEXT FOR INTERMODAL TERMINAL DEVELOPMENT IN AUSTRALIA

1 INTRODUCTION

There is an increasing need for the transfer of containerised freight by rail in Australia, both in terms of moving freight from container ports to end destinations, as well as across Australia between the major urban centres. The need for efficient movement of freight from the nation’s major container ports is of national economic importance, as Australia’s demand for imported containerised freight is projected to grow. At the same time, there is worsening road congestion around major urban container ports and public concerns about safety and air pollution from large trucks on urban roads. This situation has given rise to strong policy support for a mode shift from road to rail for containerised freight, particularly that which is imported through the nation’s major ports.

Intermodal terminals – container handling facilities for the transfer of containers between trains and trucks - are critical to facilitating this mode shift. However, the task of finding sites of sufficient size and in suitable locations to build large-scale intermodal terminals within Australia’s large metropolitan areas is proving extremely challenging, especially when in the proximity of residential communities concerned about the 24 hour a day operations and potentially large volumes of truck and train movements that major facilities involve.

This paper sets out to provide an overview of the benefits and challenges to developing urban intermodal facilities from an environmental, economic and land use planning perspective. In addition to an examination of the issues facing urban intermodals in general, the paper focuses on a case study of the Moorebank Intermodal Terminal in South West Sydney, which received NSW State Significant Development Approval in June 2016, and Commonwealth approval under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act), and when constructed will be the largest intermodal terminal in Australia. The project, sponsored by the Commonwealth Government, is a container freight handling facility with capacity to handle imported freight from Port Botany and interstate freight, and
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with a substantial provision for on-site warehousing. Details of the project are provided in Sections 11 and 12.

Importantly, this paper specifically examines the role of intermodal terminals in the transport of containerised freight i.e. freight contained in standard shipping containers (otherwise referred to as Intermodal Containers\(^1\) which typically contain non-perishable manufactured goods. Containerised freight transport additionally incorporates the handling of refrigerated containers (‘reefers’) for fresh produce. Other types of freight include bulk freight in the form of agricultural produce (grain etc.) and natural minerals such as coal, iron ore, etc. Transportation of these commodities is distinctly different to containerised freight, in terms of geography, economics, handling infrastructure and markets, and as such is deliberately excluded from further consideration in this paper.

2 NOTATION

IMT – Intermodal Terminal.
IMEX – Import-Export terminal – an intermodal terminal that handles freight trains arriving or departing a container port.
Interstate IMT – an intermodal terminal handling inter-or intrastate (regional) trains.
Northern Sydney Freight Corridor Program – A program of works to improve freight train capacity and reliability between Strathfield and Broadmeadow.
SSFL – Southern Sydney Freight Line – the dedicated freight line serving south western Sydney to Port Botany.
TEU – twenty-foot equivalent unit (a standard 20-foot shipping container).

3 WHAT IS AN INTERMODAL TERMINAL?

An intermodal terminal, or IMT, is a location for the interchange of freight between one mode of transport and another. This can be sea to road or rail (as is the case in a marine terminal), or road to/from rail (as shown in Figure 1). The Moorebank IMT (the primary subject of this paper) is intended to provide an inland road/rail terminal to service freight movements to and from Sydney’s west and south-west.

There are two distinct subsystems associated with IMTs in Australia: import/export (IMEX) IMTs, which handle international freight; and domestic IMTs, which handle interstate and intrastate (regional) trade. Inland IMTs, such as the Moorebank project, offer marine terminals like Port Botany the opportunity to extend their capacity by moving some freight off-site by rail (via a ‘port shuttle’ service) closer to the end-customer locations.

Intermodal freight is predominantly containerised cargo, measured in twenty-foot equivalent units (TEU). In some circumstances, bulk cargos (such as construction material and grain in Sydney) are also transferred or packed at IMTs.

Containers are temporarily stored at IMTs to accommodate scheduling and transport considerations, such as the desire or ability of cargo owners to receive containers, and the ability of transport operators to move the containers. Thus, hardstand storage areas for containers (both loaded and empty) are a core component of most terminals. Given the concentration of freight activities at IMTs, other services, including warehousing and container packing and unpacking, are often co-located within or adjacent to the terminal (and increasingly within the terminal).

A typical intermodal facility is shown in Figure 1 below.

4 THE FREIGHT CHALLENGE IN AUSTRALIA

There are two overriding challenges to the movement of containerised freight in Australia that shall be discussed in this paper:

- The very large distances involved in moving freight from one metropolitan area to another (interstate freight), albeit that this represents only a small proportion of freight movements within Australia.
- The high reliance of the Australian economy on imported containerised freight, and the associated pressure on the major urban container ports.

4.1 Planning for Interstate freight haulage

Australian interstate freight transport involves very long distances, and in this regard the use of rail transport for these long-distance movements potentially presents significant efficiencies in terms of energy efficiency (and associated emissions) and costs.

Containerised freight, which comprises around 8 per cent of total rail freight, is most significant on the long Eastern states–Perth corridor, where it accounts for most interstate origin–destination non-bulk freight, and the Melbourne–Brisbane corridor, where it has roughly about 30 per cent share of interstate non-bulk freight.

\(^1\) https://en.wikipedia.org/wiki/Intermodal_container
The transfer of freight across state boundaries has in part been historically constrained by incompatibility of freight rail gauges between states, the very low operating costs of road transport and inherent flexibility of truck transport for freight movements where multiple origins and destinations are involved.

The rail gauges between the state capitals are now consistent, and projects such as Inland Rail (the Federal proposal for a 1700km dedicated freight line linking Melbourne and Brisbane) and supporting pro-rail freight policies at state and federal level aim to achieve a significant growth in rail mode share for interstate containerised freight movements.

4.2 The role of intermodals in facilitating rail transport for interstate freight

Maintaining and enhancing rail mode share for interstate freight transport will require intermodal terminals to ensure that containerised freight can be delivered to, and taken from, the rail line at either end of the freight journey.

To be economically viable, such intermodal terminals need to cater for very long trains, typically 1500 m (and up to 1800 m) long. This means that the intermodal sites themselves need to be large, to accommodate these long trains without introducing excessive inefficiencies associated with train breaking (splitting a train to allow shunting and storage of shorter segments of train within a site).

In general their locations may be urban (for example the Moorebank Terminal, which will serve as both a ‘port shuttle’ and interstate freight handling facility, and is in Metropolitan Sydney) or rural / regional (for example at key

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2 *Freightline 1 – Australian Freight Transport Overview*, Department of Infrastructure and Regional Development (2014)
freight junctions on the interstate network). Importantly, the economics of the supply chain for interstate containerised freight transport means although desirable (in general to minimise the road transport component of the overall freight transport journey), it is not critical that these facilities are located within metropolitan areas or in proximity to sea ports. While this presents the attraction of cheaper, less urbanised land with fewer land use conflicts, the market for interstate freight, and its contribution to the Australian economy, represents only a small proportion of the economic benefits associated with freeing up IMEX freight movements, and so the pressure remains to find suitable urban sites.

4.3 Intermodals associated with container ports

As noted in Section 3, the other type of intermodal terminal is that which acts as an ‘inland port’, handling imported / exported containerised freight arriving into or departing the major urban container ports. The function of these IMEX facilities is to facilitate the transport of freight by rail from the port to an intermodal terminal located in proximity to the end destination for the containerised freight, thus reducing the extent of road-transport of freight in the supply chain.

IMEX intermodal terminals are generally required to handle much shorter trains than the interstate equivalents, with ‘port shuttle’ trains typically 600 m in length.

To be economically viable (and the best way of achieving a marked reduction on truck-kilometres travelled) these facilities need to be located close to the container contents’ end destinations – generally the warehousing and logistics industrial areas, for example the areas of Liverpool local government area (LGA), Fairfield, Holroyd, Eastern Creek and Erskine Park in western and south western Sydney.

Locating such terminals on rural land outside of the metropolitan areas, while achieving the objective of freeing up the road network around the ports, would simply result in the need for road-haulage back to the metropolitan areas, significantly eroding their competitive advantage (and transport energy efficiency gains) relative to simply road-hauling containers direct from the port.

This need for urban or suburban locations presents an acute planning challenge, given the difficulty of finding large suitable sites in Australia’s major metropolitan areas, and this is a central focus of this paper.

5 THE CHALLENGE FACING AUSTRALIA’S MAJOR CONTAINER PORTS

To fully appreciate the need for IMEX intermodals, it is necessary to appreciate the challenges facing the nation’s container ports.

Container throughput at all of Australia’s major ports is forecasted to grow due to both population growth and an increased reliance on containerised imports. Port Botany in particular has undergone a major expansion through land reclamation, and its throughput is forecasted to increase substantially, as shown in Figure 2 below.

This projected growth presents several challenges:

- The major container ports are generally in heavily urbanised areas with little opportunity for lateral expansion, for example the Port of Melbourne (forecast to experience the highest growth rate of any Australian container port) is only 7 km from the CBD, and Port Botany (with the second highest growth rate) approximately 16 km away. Their coastal locations mean there will always be competition for development land. As an illustration of this problem, Port Botany’s recent expansion (completed in 2014) was almost entirely achieved through land reclamation within Botany Bay.

- Urban encroachment around major container ports is presenting the challenge of land use conflict – ports are noisy 24 hour operations that mean they are a bad neighbour to residential development. This has been evidenced in Sydney by the gradual closure of the inner-city ports around Hickson Road / Walsh Bay and Glebe Island / White Bay, and is a constraint on the expansion of the other major Australian ports. In Botany, recently developed high rise apartment blocks means noise is an increasing problem, particularly as the elevated position of many apartments means greater impacts than the traditional single and two-storey housing in the surrounding area.

- The road networks around the major ports are heavily congested, meaning that road transport of freight from the ports faces congestion and associated delays, impacting the economic viability of the supply chain. In fact, in metropolitan Australia the entire road networks between the port and final destinations may be heavily congested for significant periods – this is a particular problem in Sydney, where the major routes (the M4 and M5 – refer Figure 3) between Port Botany and the Western and South Western industrial areas are heavily
congested during morning and evening peaks. There is also serious traffic congestion around Port Botany itself, with the local road network experiencing high levels of background traffic, exacerbated by the merging of congested roads that take port traffic.

- In many cases, and particularly in Sydney, new warehousing and logistics industries are moving further and further away from the ports to hinterland areas with a suitable land supply and better road networks.

There is also growing public and political pressure to remove large trucks from the urban road network in response to road safety and air quality concerns.

Figure 2: Port Botany Forecast Container volumes to 2045
(Source: Navigating the Future – NSW Ports’ 30 Year Masterplan (NSW Ports, October 2015)

6 THE ROLE OF INTERMODAL TERMINALS IN ADDRESSING THIS CHALLENGE

Establishing intermodal terminals close to the end-destinations for imported freight (in conjunction with suitable freight rail lines between the ports and the intermodal terminals) can address the port challenges in several ways:

- A shift to rail-borne freight and associated intermodal terminals significantly reduces the number of trucks on the road, especially near the ports. According to MIC estimates, development of an IMT in South-Western Sydney would reduce the projected growth in road freight traffic from Port Botany, resulting in 1,500 fewer truck journeys to and from Port Botany each day, or 1.1 million truck trips a year, once the IMT is operating at capacity.

- Intermodal terminals allow for some of the container handling and storage functions traditionally performed at the ports themselves to be transferred to the intermodal terminal. This is an important consideration in enabling ports to increase their throughput while minimising the need for their operational areas to expand.

Intermodal terminals, where well-located in industrial areas, can offset some of the perceived land use conflict associated with urban encroachment around the urban ports (although, as this paper will discuss, finding intermodal sites that do not also experience similar challenges is also difficult).

7 THE CHALLENGES OF ESTABLISHING EFFECTIVE FREIGHT NETWORKS

The focus of this paper is on the planning for IMTs. While they are an essential component of the overall freight network, IMTs can only operate where they are served by high-quality freight rail networks. At a national level, substantial investment has been made or is planned to enhance the freight rail network across Australia. For example, Inland Rail, designed to connect Melbourne to Brisbane on a dedicated freight line,
has received a funding commitment of $8.4 billion in the 2017 Federal Budget.4

Within metropolitan Sydney, the effectiveness of moving freight by rail has historically been restricted by the need for freight trains to operate on shared freight / passenger lines (where passenger services take priority). Substantial investment has been made in recent years including construction of the Southern Sydney Freight Line (SSFL), and the Commonwealth-funded Northern Sydney Freight Corridor Program. While further investments are planned to enhance capacity of the Port Botany Rail Line and Southern Sydney Freight Line, as well as other sections of the Northern Sydney Freight Corridor, there will ultimately be a need for new freight rail lines if a comprehensive intermodal-based freight strategy is to be achieved. This is particularly the case for Western Sydney, where establishment of a rail-based transport route to the industrial areas around Eastern Creek and Erskine Park will need both a new intermodal terminal and a new rail line. Creation of such new rail lines through metropolitan Sydney is extremely challenging. Clearly, the planning challenges of developing the freight rail network is a major topic in its own right, and it is not the intention of this paper to explore this further, other than to highlight that effective freight lines are an essential prerequisite of a viable intermodal terminal.

8 THE ENVIRONMENTAL AND PLANNING CHALLENGES OF METROPOLITAN INTERMODAL DEVELOPMENT

Finding suitable sites for IMTs within Australia’s major metropolitan areas is extremely challenging due to the multiple functional and planning requirements that need to be met.

An ideal site would be:

- **Very large** – IMT operations require substantial areas of space to accommodate efficient separated truck and train movements, container handling and storage, ancillary facilities and ideally co-located commercial (warehousing and logistics) development. By way of illustration the Moorebank intermodal terminal covers a developable area of 240 ha (the equivalent to the Sydney CBD), while the Enfield Intermodal (within inner western Sydney) is around 60 ha.
- **Flat or with very shallow gradients** – freight trains are generally constrained to gradients of less than 2%, meaning that shallow gradients across the site are required. Given the large land area required, any significant undulations in landform would result in prohibitive costs.
- **Unencumbered by existing land uses** that would require costly or socially unacceptable acquisition and relocation.
- **Unencumbered by environmental constraints** within the site including flooding, biodiversity and heritage.

In terms of the site’s local context it should be:

- **Suitably far from sensitive adjoining land uses (with buffer zones established)** – IMTs generally operate on a 24 hour a day, 7 day a week basis, and involve significant noise generated by container handling and truck and train movements into and within the site. As such, they should ideally be in industrial areas away from residential communities and other sensitive land uses.

In terms of the site’s regional context it should be:

- **Close to the container contents’ destinations** – as noted earlier, minimising the road transport requirements to deliver the containers to their destination will require the IMT to be close to areas of high demand (generally warehousing and logistics land uses).
- **Directly connected to the regional (high quality) road network** – i.e. roads that are suitable to accommodate significant volumes of large trucks, are relatively uncongested and are away from residential communities.
- **Connected to the freight rail network - and in the case of IMEX services, access to the freight network servicing the local container port.** This would typically be via a short dedicated rail spur from the terminal.

Finding sites that meet these requirements in major metropolitan areas, where competition for land supply is fierce, direct access to the freight network is limited, and where land use conflict frequently prevails, has severely restricted the development of metropolitan intermodal capacity.

PART B – THE MOOREBANK INTERMODAL TERMINAL

The Moorebank IMT involves the development of intermodal freight terminal facilities at Moorebank, in south-west Sydney, linked to Port Botany and the interstate freight rail network.

9 BACKGROUND TO THE PROJECT

Forecast growth in international and interstate freight movements through Sydney’s Port Botany, and increased industrial and commercial development in west and south-western Sydney has prompted government and industry to consider

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strategies for alleviating constraints on Port Botany and better management of freight on Sydney and interstate roads. Insufficient intermodal rail freight capacity is recognised as a key barrier to the future development of Sydney and to improved national productivity.

In response to these pressures, the Australian Government announced in September 2004 that it would consider the development of an IMT at Moorebank. The Project site at Moorebank (refer to Figure 3 and Figure 4) was considered suitable for the development of an IMT due to its proximity to road and rail networks, as well as established and future industrial and commercial centres in western Sydney. It is anticipated that the forecasted growth in freight movements would be accommodated by an IMT at the Project site. The downside of not proceeding with the Project (i.e. not developing more IMT capacity) is that increasing freight volumes would continue to be transported by road, causing further congestion to the surrounding road network and inefficiencies in freight distribution.

In 2005, the independent Freight Infrastructure Advisory Board recommended that the NSW Government act to ensure that the Moorebank site was secured for the development of a future IMT facility. The Board concluded that, in its opinion, the Moorebank site is an ideal location for an IMT and suitably placed in Sydney’s west and southwestern freight corridor.

As part of the $3.4 b Nation Building Program for road and rail infrastructure, the Australian Government allocated $300 m to detailed planning for the development of an IMT at the Project site. In May 2009, Infrastructure Australia identified the IMT as part of its ‘priority pipeline’. Subsequently, in the 2010–11 Budget, the Australian Government committed $70.7 m of the $300 m provision in the Nation Building Program towards the development of a business case, designs, approvals and an implementation strategy for the IMT. The funding was also proposed to support the potential relocation of the School of Military Engineering (SME) and other Defence units currently occupying the area to the nearby Holsworthy Barracks, southeast of the Project site.

In September 2010, the Commonwealth Government commenced the Moorebank Intermodal Terminal Feasibility Study with input from a team of advisers. The Feasibility Study included economic and financial analysis, technical feasibility and master planning for the facility. A scoping study undertaken as part of the Feasibility Study indicated that an IMT at Moorebank would have a positive impact on national productivity and long-term public benefits associated with reducing road congestion from heavy vehicle freight transport, and the associated environmental and social impacts of this congestion. Following this study, a business case was prepared. In April 2012, after reviewing the findings of the business case, the Australian Government committed to proceeding with the Project, subject to planning and environmental approval.

In December 2012, the Australian Government created Moorebank Intermodal Company Limited (MIC) to oversee the development of the Moorebank IMT and to work with industry to secure a builder and operator of the project and achieve the best commercial and social outcomes for the Government.

10 REGIONAL AND LOCAL CONTEXT

The regional setting of the IMT is shown in Figure 3. The IMT is located within the Liverpool local government area (LGA) approximately 30 km south-west of the Sydney central business district (CBD) and approximately 4 km south of the Liverpool CBD.

The IMT will provide connectivity to Port Botany by rail, and to major regional and interstate roads and highways via the M5 and M7 Motorways. Sydney plays an integral role in the interstate freight network, both as a major market for cargo and as a hub of physical infrastructure linking markets in other states. Regional transport corridors extending through Sydney’s west and south-west would be accessible from the IMT site. The IMT would connect directly to the SSFL and would form a key part of Australia’s national rail freight network, which includes the planned Northern Sydney Freight Corridor and Port Botany Freight Line Upgrades (refer to Figure 3).

The M5 Motorway is located directly north of the IMT site. The M5 Motorway is Sydney’s main arterial route linking Sydney’s city centre to its south-western suburbs and beyond. The M5 Motorway also forms part of the Sydney orbital network, a ring-road of motorways around Sydney.

The locality surrounding the IMT site consists of the residential suburbs of Casula, Wattle Grove and North Glenfield, as well as industrial, commercial and Defence land. The Holsworthy Military Area (Holsworthy Barracks) is located south-east of the IMT site and the Defence Joint Logistics Unit occupies land to the north and east of Moorebank Avenue. The Main South Railway Line and the SSFL are located on the western side of the Georges River.

To the north of the IMT site, the local area is generally characterised by industrial and

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5 Department of Transport and Regional Services 2006.
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commercial land uses. Beyond the M5 Motorway to the east of the Georges River is a combination of industrial and commercial areas; to the west of the Georges River is the residential area of Liverpool.

To the east of the IMT site, beyond the Moorebank IMT precinct is the residential suburb of Wattle Grove, with extensive Defence land further east (including the Holsworthy Military Area to the south-east of the site).

Figure 3: Moorebank Intermodal Terminal Regional Context

Inset shows Commonwealth Government Intermodal Terminal site only.
11 KEY FEATURES OF THE PROJECT

The Project involves the development of approximately 300 ha of land for the construction and operation of an IMT and associated infrastructure, facilities and warehousing. The primary functions of the IMT are to be a transfer point in the logistics chain for shipping containers, and to handle both international IMEX cargo and domestic interstate and intrastate (regional) cargo.

The key features/components of the IMT (refer Figure 4 are:

- **An IMEX freight terminal** – designed to handle up to 1.05 m TEU a year (525,000 TEU inbound and 525,000 TEU outbound) of IMEX containerised freight to service port shuttle train services between Port Botany and the IMT.
- **An interstate freight terminal** – designed to handle up to 500,000 TEU a year (250,000 TEU inbound and 250,000 TEU outbound) of interstate containerised freight to service freight trains travelling to and from regional and interstate destinations.
- **Warehousing facilities** – with capacity for up to 850,000 m² to provide an interface between the IMT and commercial users of the facilities such as freight forwarders, logistics facilities and retail distribution centres.

The overall site of these facilities is termed the Moorebank Intermodal Precinct. This term, and figures showing the layout of the site, are provided in Section 12 below.

12 THE MOOREBANK INTERMODAL PRECINCT

During the early development of the proposal for an IMT at Moorebank (prior to 2015), there were two intermodal proposals on adjacent sites.

The first proposal (the primary focus of this paper in terms of the later discussion of environmental and planning challenges) was a Commonwealth Government-sponsored intermodal terminal proposal on 220 ha Commonwealth land (the former School of Military Engineering site – refer Section 13) bounded approximately by the Georges River to the west, Moorebank Avenue to the east, the M5 to the north and East Hills Rail Line to the south (the ‘Moorebank IMT’) for:

- a 1.05 million TEU IMEX terminal
- a 500,000 TEU Interstate terminal
- 300,000 sq. m warehousing.

The layout of that proposal is provided in Figure 4.

The second proposal was a private-sector led intermodal terminal proposal on land immediately adjacent to the Moorebank IMT (immediately east of Moorebank Avenue) by the Qube-owned Sydney Intermodal Terminal Alliance (SIMTA), who had previously purchased the site from the Commonwealth. That proposal provided for:

- a 1 million TEU IMEX facility
- 300,000 sq. m warehousing.

Both proposals featured rail connection to the SSFL and connection to the M5 via Moorebank Avenue.

During early development of the two proposals there was an initial perception between the respective proponents that these were rival proposals competing for the same market share. Indeed, demand analysis by the Commonwealth as part of its own project development confirmed that this was largely true in respect of the market for IMEX and interstate freight. As such, there was no realistic prospect of both projects proceeding in their original form. The analysis showed that further capacity would instead be needed to service the Western Sydney freight and logistics markets around Eastern Creek and Erskine Park to the north of Moorebank.

Subsequent market soundings and later requests for expressions of interest by the Commonwealth for the development of the Moorebank IMT, led to the establishment in June 2015 of an agreement between the Commonwealth (as the Moorebank Intermodal Company) and SIMTA whereby SIMTA would become the developer and operator of IMT operations on the Commonwealth site, as well nas on its own land. Since that time, further planning modifications on the respective sites have been carried out to establish planning approval for a precinct that provides for:

- a 1.05 million TEU IMEX terminal
- a 500,000 TEU Interstate terminal
- 850,000 sq. m warehousing
- additional infrastructure including a shared rail link to the SSFL.

The development of a precinct-wide solution provided the benefit of optimising the layout of the combined sites and to significantly increase the extent of warehousing provision in line with market demand (warehousing which has strong locational synergies with the intermodal operations).

The layout of the combined precinct is presented in Figure 5.
Figure 4: The Commonwealth Government’s Moorebank IMT Proposal
13 THE IMT SITE

The author of this paper led the preparation of the EIS for the Commonwealth Government IMT proposal. Furthermore, this paper has been prepared in collaboration with the MIC as the proponent for the Commonwealth IMT project throughout EIS development. In reflection of this, the focus of the following analysis is on the original Commonwealth Government IMT proposal, however much of the broad analysis, particularly in relation to the discussion of offsite impacts and broader planning issues, applies equally to the wider Moorebank IMT precinct as described in Section 12 above.

13.1 The Commonwealth Government IMT site

The site of the Commonwealth Government IMT proposal is a 220 ha (developable) Commonwealth Government owned site formerly occupied by the Department of Defence as the School of Military Engineering (SME).

Most of the site itself is located on land until recently used for Defence purposes, including the SME and other minor Defence units. A large proportion of this land has been previously developed as a result.

While most of the site is flat, the western edge slopes towards the Georges River, which runs along the western boundary.

Vegetation exists along the western edge of the site, with riparian vegetation along the banks of the Georges River. Native vegetation is also scattered across the developed parts of the site. Much of the IMT site has previously been extensively developed for Defence purposes; however, the IMT site still contains heritage and biodiversity values as discussed further in Section 14.

The edge of the Georges River is vegetated, particularly along the eastern bank. Except for a cleared area that provides a viewing platform to the west, a narrow corridor of riparian vegetation on the IMT site (generally 25 m wide) provides a wildlife corridor and a buffer for the protection of soil stability, water quality and aquatic habitats. A wider strip of land (up to approximately 250 m wide) along the western edge of the IMT site lies below the 1% annual exceedance probability (AEP) flood level.
13.2 The SIMTA site

The SIMTA site is located on the eastern side of Moorebank Avenue and has the following key features:

- Total site area of approximately 83 ha (around 1,382 m² and a width of 600 m).
- The site topography is relatively flat with a low hill on the eastern side.
- The site has direct frontage to Moorebank Avenue.
- The site is entirely brownfield, having been previously used for Defence – related industrial purposes.

14 WHY THE MOOREBANK SITE WAS CHOSEN

The issue of whether the Moorebank site was the most suitable location, taking account of both the operational and economic viability and social and environmental issues, was the subject of considerable scrutiny by both State and Commonwealth regulators, and by those in the community that felt the site should simply be somewhere else, more remote from residential communities.

Investigation of possible intermodal sites across metropolitan Sydney has been the subject of numerous studies over the years. However, an up to date review of alternative intermodal sites was undertaken during the detailed business case and subsequent EIS for the Commonwealth IMT that considered various greenfield locations, options that involved expanding existing intermodal terminals in South West Sydney and simply expanding intermodal activities at Port Botany.

Identifying an alternative site that was well-located to serve the South Western or Western Sydney industrial areas (where most modern logistics industries are already well established) proved very problematic. Simply finding a site of sufficient size to achieve the necessary economies of scale for a modern intermodal was difficult. The problem was severely compounded by the difficulty in finding sites within reasonable proximity to the freight rail network. By way of illustration, there are large areas of greenfield land near Eastern Creek and Erskine Park in Western Sydney - an area of substantial modern warehousing and logistics development land, which would be well-located, but for the fact that they are remote from the freight rail network. While plans are underway for an eventual new freight line to service this area, it will be many years before such a rail line is operational.

Ultimately, the Moorebank site was proven to be the preferred location for in intermodal because it has many of the attributes identified in Section 8, specifically:

- It is a large (220 ha Commonwealth site + 80 ha SIMTA site totalling 300 ha for the Moorebank precinct) and almost completely flat.
- It is a largely brownfield site, having been previously used as a Defence facility, so does not have any environmental values that would be unacceptably impacted once mitigation and management measures are applied.
- It is near the SSFL (which in turn connects to the Port Botany Rail Line) so has direct high-quality freight rail access to Port Botany, as well as connections to the interstate freight rail network.
- It is immediately adjacent to the M5, accessed via a short length of Moorebank Avenue, a Commonwealth-owned road currently servicing the site, so is well connected to the regional road network.
- The Moorebank Intermodal Precinct is almost entirely owned by a combination of the Commonwealth Government and Qube, thus minimising impact on third party property owners.
- The functions of the school of Military Engineering (the former land use at the site) could feasibly be relocated to the nearby Holsworthy Department of Defence site (this has already been undertaken), so allowing for the ongoing viability of existing land uses. Similarly, the previous Defence activities on the SIMTA site have been relocated.
- Strategically, the site is well located to serve the warehousing and logistics areas of South Western Sydney around Liverpool and Fairfield.

15 THE ENVIRONMENTAL AND PLANNING CHALLENGES OF THE MOOREBANK SITE

As noted above, the focus of the following analysis is on the Commonwealth Government IMT site and associated EIS.

15.1 The site's heritage values

The site itself, as a former Department of Defence facility with a long history as a Defence training establishment, had a long Military history, both in terms of its built heritage, some of which was listed under State heritage or local designation, and informal listings of social significance to military personnel that had served on the site.

15.2 The riparian corridor

A key environmental feature of the site is that it is bounded to the west by the Georges River, which has significant value both as a natural resource and recreationally. Significantly, land on either side of the river (up to around 100 m from the river itself) is
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heavily vegetated with numerous State and commonwealth-listed plant communities and habitats (refer Figure 6), is flood prone (within the 1 in 100 year ARI) and contains numerous significant Aboriginal heritage sites. In addition, the western bank of the river, owned by Liverpool Council, was subject to plans for riverside recreational trails and parkland.

Development of the east bank of the Georges River as part of the intermodal development would have therefore required substantial flood mitigation works, would have resulted in major Aboriginal heritage and biodiversity impacts associated with broad-scale vegetation clearing and would have had an adverse impact on Liverpool Council’s plans for parkland on the Western side of the river.

Local opposition was particularly strong from the suburb of Casula, which as well as being the closest residential community to the site (as close as 400 m away to the west), is generally elevated in relation to the site due to much of the suburb being located on an east facing slope, between a ridgeline to the West and the Georges River. As a result, Casula residents feared that their proximity and elevated position would result in acute visual and noise impacts. More broadly, local community concerns focused on human health risks from diesel train and truck emissions, noise (night time noise associated with 24 hour operations) and traffic impacts on what was perceived by the community to be an already over-congested road network.

17 THE EIS PROCESS AND CHALLENGES

Development of an EIS for the IMT that provided a robust and effective approval, while providing the adequate safeguards against a range of significant environmental issues was always going to be challenging, due to the complexity of the IMT and the level of regulator and community concern over the project’s impacts.

However, there were several unique challenges that made the EIS and associated approvals process particularly complex, as outlined below.

17.1 State and Commonwealth approval processes

The project was assessable as a State-significant development under the Environmental Planning and Assessment Act 1979 (EP&A Act), meaning it was assessable by the NSW Minister for Planning. This pathway is typical for major development projects with a large capital value or that comply with certain definitions (in the name of brevity it is not the intent of this paper to spell out the details of SSD classification, other than to note it is the general approval pathway for all but state-sponsored major projects). However, because the project is largely contained within Commonwealth land, is a ‘Commonwealth Action’ (i.e. a project by the Commonwealth) and because of its impact on two Commonwealth listed plant communities, it also required assessment and approval under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). This was a challenge.

Whereas projects that trigger the EPBC Act by an impact on a Commonwealth – listed biodiversity matter or some other ‘Controlled Action’ under the terms of the Act are subject to one of the various Commonwealth-state bilateral agreements, those projects with an
impact on Commonwealth land, such as the Moorebank IMT, are not.

Without the benefit of the bilateral agreement, which effectively provides that the project need only be assessed by the state (albeit that separate approval is still required by both State and Commonwealth regimes), the Moorebank IMT required separate negotiations and assessments with both state and commonwealth regulators.

This resulted in significant challenges in harmonising the different EIS requirements, approaches to assessment and focus on differing issues across the two jurisdictions. It also required the development of an integrated set of assessments and mitigation and management measures that could be applied to the project holistically, but which satisfied the two regimes.

17.2 The staged nature of the development

The IMT’s development as detailed in the EIS is planned to occur over several years and consist of multiple development phases, each adding more IMEX, interstate and warehousing capacity, leading to the operation of the fully-developed terminal from 2030. This is clearly set out in the EIS, which describes the construction activities, project ‘footprint’ (i.e. site area required for construction and operation) and timeframes for construction and commencement of operation of each phase. However, in addition to describing these phases, both state and Commonwealth regulators took the view that given the level of public interest in the IMT and the long timeframe to reach full development, individual impact assessments of each phase were required. Specifically, these assessments were required to focus on offsite impacts of traffic, noise and air quality. This added considerable effort in EIS development, including detailed modelling of each project phase and consideration of simultaneous construction and operation at certain times.

17.3 Working with a high-level project concept

A major challenge for the EIS was to find a balance between the need to satisfy the regulators’ expectations for detail in both the way the project was described, and the corresponding impact assessments and mitigation and management recommendations for environmental impacts.

At the time of EIS preparation there was still no certainty over who the eventual developer and operator would be, and there was a clear need to strike a balance between satisfying the regulators that the EIS was robust, and the project proponent, who was keen to go to the market with an approval that was flexible enough to allow for innovation in design and approaches to mitigation.

Ultimately a broad concept design was approved that satisfied the approval authorities while creating a framework of mitigation and management approaches that provide flexibility to the eventual developer and operator.

17.4 The challenges of integrating two approval processes into one precinct

One of the most challenging issues for the project at the time that the EIS was being prepared was that the Commonwealth and SIMTA projects (refer Figure 8) were initially perceived by the planning authorities as two standalone and competing projects (and in any event were – and still are – being progressed under separate approval processes).

This presented major challenges for the regulators, and significant concerns and confusion within the community, who struggled to distinguish the two proposals or claimed that it would not be necessary for both terminals to go ahead.

This was also a major challenge for the EIS. At the very least, if both terminals proceeded, it became apparent that modification to one or both proposals would be needed, for example to ensure against the construction of two separate rail links into the respective sites, and to ensure against over-intensification of the combined sites and oversupply of intermodal capacity.

Ultimately it was apparent that some unique approaches would be required to address this problem:

- Rigorous cumulative impact assessment, with a focus on offsite impacts – traffic, air quality and noise – that provided an understanding of the impacts of the IMT both with and without the development of the SIMTA intermodal terminal – this involved rigorous modelling of the various development phases of the projects both in isolation and in the event that both proceeded.
- Working closely with the regulators to establish an approval regime that allowed for development of both sites, but provided a cap on container handling throughput between the two sites, if both terminals proceeded, as well as a
provision that only one rail link from the SSFL (that would serve both sites) would be allowed. Numerous other approval mechanisms were installed to better control the prospect of both sites going ahead, and while these provisions were given force by the approval conditions, the detail of how they should operate was developed and embedded in the EIS documentation through close collaboration with state and Commonwealth approval agencies.

Collaboration between the two intermodal terminal proponents was ultimately needed, to share project details for the purposes of assessment, and to explore the potential interdependencies between the two projects.

Significantly, at the time of EIS development, the Commonwealth Government intended to place the construction and operation of the intermodal facility into the hands of a private sector entity (on a long-term lease arrangement), however there was no certainty over who this would be.

However, towards the conclusion of the approval process in 2015, a contractual agreement had been reached between SIMTA and MIC that provided SIMTA with the right to develop and operate both its own site and the Commonwealth IMT site. As a result, from this point, the development of the two sites could be progressed in the context of a wider intermodal precinct. What this means is that while the Moorebank ‘precinct’ can now be developed in a holistic manner, it will continue to be developed under two independent planning approvals.

The geographical relationship between the two projects is illustrated in Figure 8.

18 MANAGEMENT OF THE KEY ISSUES THROUGH THE EIS PROCESS

The site was subject to the following in-depth and detailed technical studies, which were subject to rigorous scrutiny by both state and Commonwealth regulators and the community (including the engagement of expert peer reviews for the most complex and contentious studies):

- European and Aboriginal Heritage
- Biodiversity
- Regional and local air quality
- Health impact assessment and human health risk
- Visual impact
- Traffic and transport
- Noise and vibration.

In general, while the onsite impacts required detailed assessment, extensive Government Agency and Aboriginal community consultation and development of rigorous mitigation measures, the biggest impacts of the IMT, especially from the community’s perspective, were the offsite impacts. Traffic, noise and air pollution (and associated impacts on human health) were the biggest issues in this regard.

It was critically important to ensure that for these studies, impacts and community concerns could be mitigated, even for those issues where community concerns were not borne out by the findings of the EIS technical studies.
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It is not the purpose of this paper to provide an exhaustive account of all EIS studies undertaken, but to highlight some of the key issues and assessment approaches to secure a successful project planning approval under state and commonwealth assessment processes.

18.1 Managing the site’s heritage constraints

The site’s legacy of Defence occupation had been well documented by the Department of Defence through previous heritage studies, and this information was readily mobilised by the EIS team.

Throughout project development, it became apparent that because the intermodal proposal would require a very large continuous footprint, there was minimal opportunity for in-site conservation of important heritage buildings and artefacts. These were generally located in the planned operational area of the future intermodal, with little opportunity for avoidance without severely hampering the functionality of the intermodal proposal.

Instead of trying to preserve the site’s built heritage in situ, an approach was taken of working with the Department of Defence in relation to its own plans to relocate the functions of the site – the School of Military Engineering and associated activities – to the nearby Holsworthy Barracks. In this relocation activity (which was subject to its own planning approvals and was therefore outside the scope of the Moorebank IMT EIS), an opportunity arose to relocate some of the most significant built heritage, and this effectively offset many of the impacts that would otherwise have occurred on the site.

All significant structures that remained were assessed to determine the feasibility of also relocating these, however investigations found that their condition was so poor that any attempt to relocate them would have resulted in their destruction, and a process of documentation was therefore applied for all remaining site features.

18.2 Preservation of the site’s biodiversity and Aboriginal heritage values

Development of the heavily vegetated eastern bank of the Georges River as part of the intermodal development would have required substantial flood mitigation works, and would have resulted in major Aboriginal heritage and biodiversity impacts associated with broad-scale vegetation clearing (it would also have had an adverse impact on Liverpool Council’s plans for public parkland on the Western side of the river).

Based on the findings of biodiversity investigations undertaken for the EIS, a decision was made by the proponent to establish a Conservation Area – an area containing the highest environmental values of the overall site, associated with riparian habitat, biodiversity and Aboriginal heritage. Within the conservation area no intermodal development would occur, and the land would be managed for conservation outcomes. Although it was found that some clearing would be unavoidable due to the construction of a rail connection to the SSFL across that land, most of the area was secured through several mechanisms:

- The EIS and associated approval established the conservation area.
- A further rezoning process was undertaken as part of the project planning process, to zone the land for conservation purposes (specifically, an Environmental Management zone was established), which precluded development of the land.
- Further parcels of Commonwealth Government – owned land in the immediate vicinity of the site were similarly secured to further address the biodiversity offset requirements associated with the project.
- A biodiversity offset agreement was established that secured the site as part of a range of offset provisions.

The avoidance of biodiversity impacts was a high priority for the project – even with the establishment of the Conservation Area, around 50 ha of State (and in some cases Commonwealth) – listed vegetation and habitat would require clearing across the site because of the development.

In Western Sydney, the legacy of urban development across Western and South Western Sydney means that some habitats, including several of those found within the impact area of the Moorebank Site, are becoming increasingly scarce.

Apart from the environmental importance of these habitats, their scarcity also means that securing suitable compensatory habitat (offsets) is becoming very expensive, and the project approvals place a strong onus on reducing the area of impacts.

18.3 Noise impacts

The IMT will operate 24 hours per day, 7 days per week and involve noise generation by trucks, trains and in-terminal container handling operations. As noted earlier (and
indicated in Figure 3), there are various residential communities within the vicinity of the site, most notably at Casula, as close as 400 m away, and at Wattle Grove.

From the community’s perspective, in addition to the noise impacts of the terminal itself, the noise of freight trains on the SSFL en route to the site was a major concern. Under the terms of both the state and Commonwealth statutory approval processes, the impacts of freight trains are only considered to be impacts of the project (and therefore subject to assessment and approval as part of the project) at the point where they enter the IMT site, even when these trains are travelling to or from the intermodal terminal. In other words, they only generate IMT-related noise at the point where they leave the SSFL and move onto the IMT’s dedicated rail spur. The impacts of the freight trains on the SSFL are a matter for ARTC (as operators of the SSFL), to be managed under the terms of the planning approval conditions for the SSFL and associated environmental protection licence. Notwithstanding this, from a community perspective noise impacts on the SSFL were a major cause for concern that was voiced in relation to the intermodal proposal.

The noise assessment of the terminal itself was challenging not only due to the need to undertake modelling of multiple assessments to address the complexities of a staged development (refer Section 16.2) and the simultaneous development of a second intermodal on the adjacent site (refer Section 16.3), as well as addressing the complexities of accurately capturing the multiple noise-generating activities that occur on site. Development of a model that incorporated road traffic within the site, container handling, truck movements and train movement and idling was challenging.

This was exacerbated by the complexities of the regulatory process. The noise of trains travelling on the rail spur (from the SSFL) were assessed under the EPA’s Rail Infrastructure Noise Guideline\(^7\), however all activities within the main intermodal site (including the noise of trains once they entered the main terminal) were assessable under the (now superseded) EPA industrial noise policy (INP)\(^8\). Truck and other traffic noise was subject to the EPA’s Road Noise Policy\(^9\) but again, became subject to the INP once trucks arrived at the site.

The noise modelling identified some major challenges, particularly associated with night time noise impacts. The quiet suburban nature of the existing area (and low background noise impacts) in combination with stringent night time noise policies from EPA meant that without mitigation the IMT would unacceptably impact the closest residents at Casula and Glenfield to the south west.

The challenge was therefore on to devise a compliant project with suitable mitigation and management approach that provided confidence to the regulators and the community, while preserving flexibility for the eventual developer and operator to find the most practicable solution for managing noise.

The project explored design measures to mitigate noise, including wide rail track radii within the site to reduce wheel squeal, and track damping and noise barriers on the rail spur into the site (a particular noise source due to its elevated nature and proximity to residents). Targeted design recommendations were integrated throughout the project concept to ensure compliance with noise goals.

Finally, the in-terminal operations were scrutinised. Where feasible, technology substitution (including use of quieter plant and equipment) was applied, effectively balancing the EIS objective of getting the best possible environmental outcome while still maintaining flexibility and operational viability for the future operator.

18.4 Traffic impacts

Perhaps the biggest offsite impact of the project is the generation of truck traffic (as well as staff cars and other ancillary traffic).

At a regional scale the IMT will have major traffic benefits, especially by taking trucks off the road between Port Botany and western Sydney, so lessening the impact of port growth on the heavily congested M5 and M4.

However, traffic modelling showed that in the immediate vicinity of the site (and in relation to several key intersections on the strategic road network) the intermodal would exacerbate existing traffic problems.

The intermodal operations themselves generate considerable traffic. In addition, the planned commercial (warehousing)
development component of the site is a significant traffic generator, particularly where warehousing is not functionally related to the intermodal operations.

An important point to note is that where warehousing has a functional relationship to the intermodal operations (as opposed to generic warehousing), the unloading of containers can occur within the onsite warehouses, so removing the need for further onward movement of trucks. During EIS development there was considerable discussion with the approval authorities over this issue, and ultimately a planning condition was imposed on the development stipulating that the warehousing on site could only be used for activities associated with freight using the IMEX or interstate terminals (unless otherwise subsequently approved).

The traffic impact assessment was complex – like the noise impact assessment it needed to explore the terminal at several different operational stages, as well as evaluating the impacts of the SIMTA IMT also operating. It also had to consider the fact that much of the traffic being placed on the road network by the project would have been there anyway (albeit that it would have originated in Port Botany and travelled west along the M5).

Perhaps the biggest challenge was also the need to overlay background traffic growth. This was particularly significant given the high levels of urban development and associated traffic growth projections for the area. The modelling found that even without the project, road network conditions would rapidly deteriorate on the surrounding road network.

There were several important findings of the traffic studies:

- The impact of the project on the M5 (the most immediate strategic road access to the site) was relatively minor – the additional traffic would represent a less than 3% increase in total peak hour movements on the M5, albeit that this is largely truck traffic that has a more significant impact than cars.
- The M5 near the project experiences complex traffic movements due to the placement of on and off ramps near each other. This results in the ‘criss-crossing’ of vehicles entering and leaving the M5 near Moorebank. This is a broader problem because of existing and background traffic growth, and so requires a State-Government solution, however the use of this section of the M5 by the IMT-generated traffic meant that the EIS needed to carefully analyse the extent to which IMT-generated traffic would exacerbate this issue.
- Several intersections in the area were modelled, all of which would deteriorate due to background traffic growth that would necessitate physical upgrades to maintain acceptable levels of service. The IMT project had a modest but definite impact on the functioning of these intersections that generally brought forward the point in time that they would need to be upgraded.
- A key feature of the project was the upgrade of Moorebank Avenue, the immediate entry point from the site onto the road network, that was demonstrated to have a significant positive impact on truck traffic flows onto the road network.

Ultimately, the traffic studies undertaken for the EIS provided an essential mechanism for determining the impact of the project on the road network and for distinguishing the impacts of the project from the (much more significant) impacts of background traffic growth.

This technical work is instrumental in creating a financial contributions framework to determine the nexus between the project’s impacts and the need for road network upgrading. This is being used to guide negotiations between the Commonwealth and NSW Government over the timing and extent of Commonwealth Government contributions towards road network upgrades.

18.5 Air quality and human health

In much the same way as the project was deemed to provide regional benefits to the traffic network, it was also considered to provide air quality benefits for Sydney as a whole associated with the overall reduction in truck traffic and associated emissions.

To better understand this, a regional air quality assessment was commissioned to model air quality change across the Sydney basin because of the project.

In practice, in the context of the many other emission sources across the Sydney airshed, the study found that there would be an improvement, but that this improvement was very marginal.

The ability to quantify the air quality benefits associated with the mode shift from trucks to trains was also challenging due to unreliable published data on the emissions performance of diesel freight trains, and uncertainties over the future standards that would be applied to
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trucks and trains to improve their emission standards. The studies noted that locomotives have a long-life span, so older stock is not frequently replaced, and there is little in the way of binding targets to drive improvement in the train fleet. As a result, performance improvements in rail freight over time were assumed to be relatively modest.

While this regional review was of value, the focus of the regulators and the community was on the impact of the project in the immediate vicinity of the site, and from the community’s perspective, the likely impact on human health from any deterioration in local air quality.

Local community perceptions were highly emotive, with a perception that the area already suffered acute air quality problems, and had elevated health problems. There was also acute awareness of recent reporting on the links between diesel emissions and cancer.[10]

It was therefore critical that the local air quality assessment and associated health risk assessment were very robust. Industry leading experts were engaged to prepare these studies, and other experts engaged as peer reviewers. For the health impact assessment, a panel of Government advisors was convened to advise on the scope and approach to human health risk assessment.

The study found some interesting results. In terms of exiting air quality, the results of Government monitoring stations, and onsite air quality monitors installed for the project found that local air quality was generally well within the EPA air quality guidelines. Where breaches of the air quality standards did occur, this was found to be because of bushfires in the region, and not traffic or industrial activity.

The studies also found that while there was a higher prevalence of several health conditions, they were generally due to lifestyle factors and/or suboptimal means of managing health conditions, rather than anything attributable to air quality.

The EIS process, and the air quality and health impact assessments in particular, explored opportunities to enhance the project’s environmental performance, including a detailed review of plant and equipment used on site. Because of this review opportunities were identified to use best available technology, including use of an electrified plant on site in place of a diesel plant. In addition, operational measures were introduced, including the requirement to avoid long-term idling of diesel locomotives on site.

With these measures applied it was found that the project would not result in any impacts that exceeded EPA guidelines, and that the project would not exceed human health risk guidelines.

19 CONCLUSION

There is a clear economic and environmental case for a mode shift for containerised freight from trucks to trains. This is especially so in relation to the movement of freight from the nation’s major container ports to its destination in industrial areas where the freight and logistics industries operate, due to existing congestion around the ports.

There is now a considerable policy focus on growing the rail mode share for urban containerised freight transport, and planning is underway to develop the metropolitan freight network in Sydney and elsewhere.

Intermodal terminals are an essential component of any container freight rail distribution network, and projected demand suggests that substantial intermodal capacity will be needed. In Sydney, demand is highest in the industrial areas of western and south west Sydney.

However, identifying suitable sites in the right location is extremely challenging. The Moorebank site is considered the most suitable, and perhaps only viable option to addressing south western Sydney’s intermodal needs in the short to medium term. However, the site faced many significant challenges from the community and regulators throughout the approval process, demonstrating that there are no easy options, and that long-term planning for such facilities is essential, if Australia is to remain competitive on the world stage.

20 RECOMMENDATIONS FOR FUTURE PLANNERS

Identifying suitable locations for large-scale intermodal terminal facilities in Australia’s large metropolitan centres is becoming increasingly difficult. Land is becoming scarce because of population and associated demands for urban land supply. Furthermore, urban encroachment of the nation’s ports, in conjunction with growing demand for imported freight, means that moving freight by rail for handling at intermodal terminals is essential to Australia’s future economic growth. Effective planning for intermodal development is therefore essential at both the strategic and project-level.

In terms of metropolitan / regional scale planning, there are several important measures for long term strategic planning including:

- Long term road and rail infrastructure planning by Government (including planning for dedicated freight rail capacity) to create the freight transport network to support intermodal development (including the long-term statutory preservation of transport corridors).
- Strategic planning for reservation of industrial land, so allowing for the co-location of future intermodal facilities with emerging freight and logistics industries.

At a local government level:

- Strategic planning to secure potential sites and create buffer zones to prevent encroachment of sensitive uses on potential intermodal sites.
- Local planning for economic development that recognises the economic contribution of freight and ensures the provision of suitable employment lands through the local planning process.

At a project level (once a preferred site has been identified), proponents and their planning consultants should:

- Early on, establish a clear planning approvals strategy for project development, including identifying all Commonwealth, state and local planning approval requirements, and zoning constraints.
- Engage early with key agencies, especially the planning agencies and agencies responsible for addressing traffic, noise, biodiversity and heritage impacts, especially where these are contentious.
- Engage with the community actively and on an ongoing basis to build communication and address contentious issues.
- Commence complex studies with a long lead time early to mitigate project delays associated with the EIS.
- For large and complex projects that will be developed over time, consider a staged approval process whereby a concept approval is sought that defers the detailed approvals for later development stages.