



Moorebank Intermodal Terminal Project

Summary: Detailed Business Case

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Introduction

In May 2010, the Australian Government tasked the Department of Finance and Deregulation to conduct a Feasibility Study into the potential development of an intermodal container freight terminal (IMT) at Moorebank in south western Sydney.

The Moorebank Project Office (MPO) was established to conduct the Study. The Study focused on the site currently occupied by the Department of Defence including the School of Military Engineering (SME) to the west of Moorebank Avenue.

In September 2010, a group of advisers led by KPMG was appointed to assist the MPO in undertaking the Study. The Study provided a detailed examination of economic, financial, social, environmental and technical issues.

A Detailed Business Case was reviewed by Greenhill Calburn and provided to assist the Government in making a decision about whether the Project should proceed.

In April 2012, after reviewing the findings of a Detailed Business Case, the Australian Government has committed to proceed immediately on the Moorebank IMT Project to be operational by mid-2017. The project is subject to Commonwealth and NSW planning approval with an Environmental Impact Statement due to be displayed late in 2012 for public comment.

This document contains a high level summary of the key findings contained in the Detailed Business Case.



Key points

Inefficient freight delivery and the impact on national productivity

Australia faces major challenges in two key freight markets:

- The import/export (IMEX) container market where rapid growth in container volumes, combined with constraints affecting Port Botany, threaten to create a bottleneck which would add costs to the entire supply chain.
- The interstate container market, where Australia needs to take advantage of the substantial operating cost savings and environmental benefits that can be achieved through the greater use of rail for long distance freight transport - thereby leveraging off the Australian Government's \$4.8 billion investment towards improving the national rail freight network.

The Moorebank IMT responds to these freight challenges

The DBC finds that additional intermodal terminal (IMT) capacity is required in Sydney to:

- Help facilitate the greater use of rail and reduce congestion at Port Botany and on local roads caused by the continuing high growth in container volumes and, in the process, facilitate an increase to the planning cap on throughput at Port Botany and boost national productivity.
- Increase national productivity through the more efficient transportation of freight.
- Enhance the competitiveness of the interstate rail freight network and reduce the adverse environmental and social impacts of continuing to use road freight.

The Australian Government has selected the Moorebank site, occupied by the School of Military Engineering (SME) and a number of other Australian Defence Force units, as a logical site for an IMT because the site is:

- Close to major freight markets and transport links (Southern Sydney Freight Line (SSFL), M5 and M7 Motorways) but sufficiently distant from Port Botany to make rail a viable alternative to road transport.
- Of sufficient size to handle expected IMEX and interstate demand with a sustainable practical capacity of throughput of approximately 1.2 million twenty-foot equivalent unit (TEU) per annum (p.a.) for IMEX and 0.5 million TEU p.a. for interstate container traffic.
- Owned by the Commonwealth.

Benefits and costs of the Moorebank IMT Project

The Project would generate substantial economic benefits:

- The Moorebank IMT has a positive economic net present value of almost \$1 billion and achieves a benefit-cost ratio of 1.72. This compares very favourably with a range of other transport - related projects submitted to Infrastructure Australia.
- The Project would also provide a major boost to the economy of south west Sydney. Approximately 1,650 full time staff are expected to be employed during the construction of the

IMEX terminal and 975 staff are expected to be employed the construction of the interstate terminal. The operation of both terminals, together with warehousing, could see an additional 1,700 people being employed in the region.

Until the terminal is operating effectively, it is recommended that the Commonwealth maintain an ongoing involvement as a Landlord to manage its substantial investment and to ensure that the project objectives are met effectively.

- A GBE Company, as a wholly-owned entity of the Commonwealth, would enable the Landlord to have an appropriate commercial focus while maintaining effective Government oversight under the Commonwealth Authorities and Companies Act 1997. From a budgetary perspective, the GBE may be classified as a Public Non Financial Corporation.
- The GBE would have responsibility for exploring opportunities for private sector financing and investment in the development and operation of the IMT, thereby reducing the financial exposure on the Commonwealth.
- Twenty-five different commercial structures were considered against their potential to achieve the Australian Government's Project objectives of developing an open access, fit for purpose, integrated IMT that will meet the immediate needs of the international and interstate containerised freight markets.

Implementation arrangements

An implementation plan has been developed to deal with priority matters including road upgrades; the Port Botany Landside Improvement Strategy; SSFL train path allocation; and responsibility for the rail connection to the SSFL. Following the initial transition period the GBE would be responsible for the implementation activities.

The Project would provide significant benefits to the NSW Government, Australian Rail Track Corporation (ARTC) and other stakeholders but is also dependent on critical infrastructure managed by these bodies. Engagement with ARTC would also be a key component of the implementation of the Project. Subject to the Australian Government's consideration, key Project milestones include:

- Recommendation to Government in March 2012.
- Engagement on implementation with NSW Government and ARTC commencing 2011/12.
- Establishment of, and transition to the GBE in 2012/2013.
- DoD vacating the SME site by December 2014.
- Construction of the IMEX terminal begins in January 2015 (with non-intrusive limited on-site works commencing in advance of this date, subject to DoD assessment of the impacts of works on the operational capability).
- IMEX operations commence in July 2017.

Interstate operations are forecast to commence in 2029 however this is dependent upon review of policy and demand underpinnings.



Executive Summary

The Detailed Business Case found that the Moorebank Intermodal Terminal (IMT) would provide an efficient solution for the improved movement of container freight between Port Botany and south west Sydney and within Australia. The sustainable practical capacity of throughput at the terminal is estimated at 1.2 million twenty-foot equivalent unit (TEU) per annum (p.a.) for import/export (IMEX) and 0.5 million TEU p.a. for interstate container traffic, thereby relieving the growing pressure on congested infrastructure around Port Botany. In addition, the terminal would contribute to the increased utilisation of the national rail freight network. The Moorebank IMT would provide a major boost to national productivity, helping to reduce business costs and the adverse environmental and social impacts of road transport, as well as creating jobs in south west Sydney. Further, it is anticipated that the private sector would play a role in the design, construction, operation and potentially the privatisation of the facility.

What are the Commonwealth's objectives for the Project?

The Commonwealth has endorsed the following six objectives which have been used to guide the development of the DBC:

1. Boost national productivity over the long-term through improved freight network capacity and rail utilisation.
2. Create a flexible and commercially viable facility and enable open access for rail operators and other terminal users.
3. Minimise impact on Defence's operational capability during the relocation of Defence facilities from the Moorebank site.
4. Attract employment and investment to south west Sydney.
5. Achieve sound environmental and social outcomes that are considerate of community views.
6. Optimise value for money for the Commonwealth having regard to other stated project objectives.

Project background

The need to address Sydney's insufficient intermodal rail freight capacity has been under consideration for some years, having been recognised as a major barrier to the future development of Sydney and improvements in national productivity. An intermodal terminal at Moorebank was first proposed by the Commonwealth in 2004.

As part of the Nation Building Program and reflecting a 2007 election commitment, the Australian Government allocated \$300 million towards the detailed planning for an IMT at Moorebank. Following this, in May 2010, the Government allocated Budget funding for a feasibility study of the Moorebank site. The Moorebank Project Office (MPO), an interagency taskforce within the Department of Finance and Deregulation (DoFD) comprising representatives from DoFD, Department of Infrastructure and Transport (DoIT) and the Department of Defence (DoD), was established to prepare the study.

In September 2010, a group of specialist advisers led by KPMG were appointed to assist the MPO in undertaking a Scoping Study and a DBC. Advisers appointed included Lead Adviser (KPMG, supported by Parsons Brinckerhoff and Deloitte), Legal Adviser (Ashurst) and Communications Adviser (KGA). In March 2011, the Final Scoping Study Report

was submitted to the Commonwealth. The findings of the Final Scoping Study indicated that an IMT at Moorebank would have a positive impact on national productivity and provide long term public benefits.

Following the Australian Government's consideration of the findings of the Final Scoping Study, the Government agreed to proceed to the DBC phase on the basis of a staged IMT development, i.e. the IMEX terminal and associated warehousing would be developed during the initial phase, and the Interstate facility would be developed when policy and demand require it. The Government also agreed that the DBC should further explore commercial and financial opportunities (including private sector financing) that would minimise the financial exposure to the Commonwealth.

Alignment with Government policy

The proposed Moorebank IMT Project is closely aligned with Government policy commitments to improve the efficiency and integration of the national freight transport network. The Commonwealth has committed \$4.8 billion towards improving the national freight rail network. As part of this investment, the Moorebank Project would specifically complement the \$1.84 billion investment to support the ARTC's North-South Strategy and its contributions to the Northern Sydney Freight Corridor Project (\$840 million) and the Port Botany Freight Line (\$170 million). Additionally, the ARTC is investing approximately \$1 billion in constructing the Southern Sydney Freight Line (SSFL).

The Project also supports the draft National Freight Strategy, prepared by Infrastructure Australia (IA), which proposes a new national land freight network to allow for interoperability of the most efficient freight vehicles between principal freight nodes. The strategy includes the Moorebank IMT as one of nine major IMT/freight clusters across Australia and recommends the Moorebank IMT be progressed as a priority.

The National Ports Strategy, also prepared by Infrastructure Australia, emphasises the importance of landside efficiencies, in particular IMTs and improved rail logistics, to ensure that port-related activities across the freight network remain competitive relative to international counterparts.

The Moorebank IMT Project also supports the NSW Government mode share target of doubling the proportion of containers moved by rail through NSW Ports by 2019/20.



Achieving an efficient and sustainable freight transport system is a challenge in two important freight markets:

- The IMEX container market, where rapid growth in container volumes, combined with constraints affecting Port Botany, threaten to create a bottleneck which is likely to add costs to the entire supply chain.
- The interstate container market, where Australia needs to take advantage of the substantial operating cost savings and environmental benefits that can be achieved through the greater use of rail for long distance freight transport – thereby leveraging off the Australian Government's \$4.8 billion investment towards improving the national rail freight network.

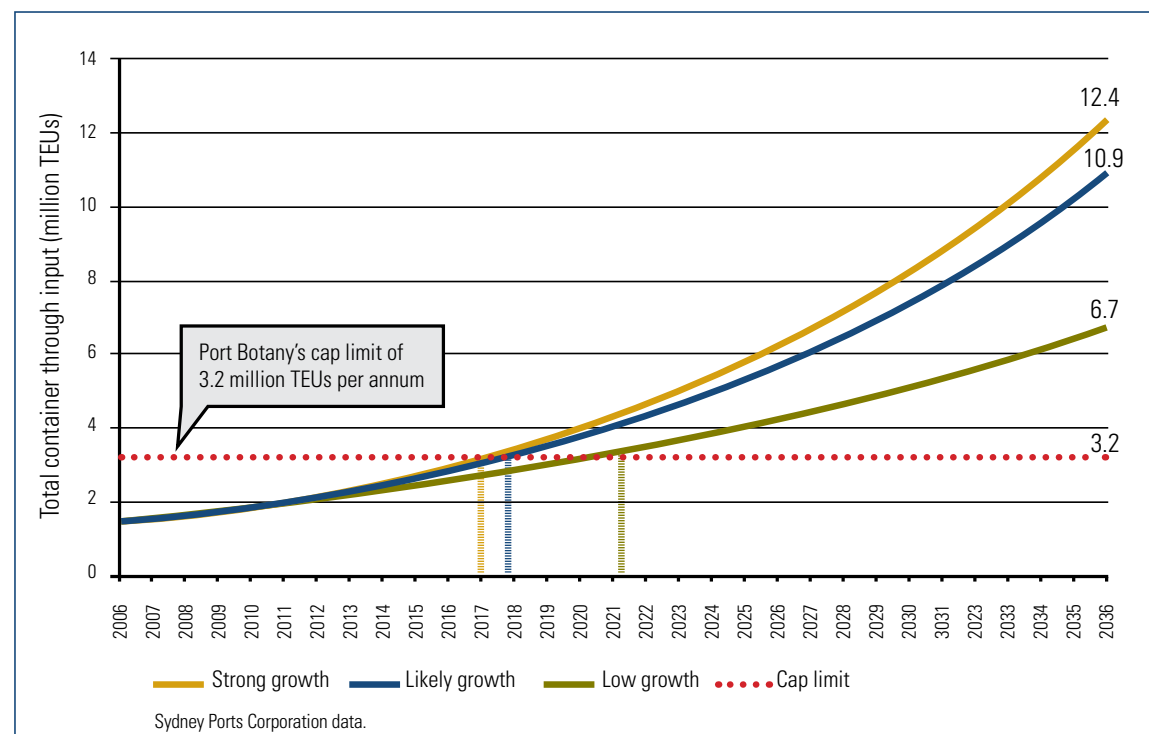
The need for IMEX infrastructure

The Sydney IMEX container freight market is almost entirely dependent on Port Botany which is a major container port. Sydney's need for additional IMT capacity in the IMEX market is being driven by:

- **Continued strong growth in freight volumes** – Port Botany has experienced around 7 per cent p.a. growth in freight volumes over the past five years and this is expected to grow at 6.7 per cent p.a. over the next 25 years.

Graph 1 illustrates Sydney Ports Corporation's (SPC) forecast container growth through Port Botany under three growth scenarios.

Graph 1 - Port Botany's forecast container demand



- **The planning cap on Port Botany's container volumes** – The port is currently subject to a cap on throughput of 3.2 million TEU p.a. which, at current rates of growth, is expected to be reached between 2016/17 and 2020/21. The cap is imposed through a planning restriction which is correlated to the actual approximate capacity of the existing Port Botany infrastructure. An IMT at Moorebank would help achieve increased movement of containers by rail and reduced road congestion around Port Botany.
- **Road congestion** – Heavy congestion is already being experienced at Port Botany and on the M5 Motorway. This would be aggravated by future growth in port volumes and associated truck movements. It is estimated that truck traffic at Port Botany would increase by 400 per cent by 2029/30 if the current rail mode share is not improved.
- **Limited capacity within the existing IMT network** – The current IMT network is fragmented and its capacity and effectiveness is constrained due to a number of factors including space limitations, accessibility to rail paths shared with passenger rail and limited proximity to urban growth areas. Whilst a new IMT is underway at Enfield and its contribution is significant relative to the current low base, it is small relative to the expected growth in containers through the port. Also, Enfield is expected to primarily serve its localised market and would not have a major impact on Western Sydney.

The need for Interstate infrastructure

Sydney's need for additional IMT capacity in the interstate freight market is being driven by:

- **Growth in freight volumes** – Interstate freight is expected to grow at 3.6 per cent p.a. between 2011/12 and 2029/30 (road and rail freight 3.8 per cent and 3.5 per cent p.a. respectively).
- **Strategies to improve the competitiveness of the rail network** – ARTC has developed a number of long-term investment strategies to improve rail reliability and transit times. The Government considers the establishment of a large IMT on the SSFL to be a key component of supporting ARTC's North-South strategy to increase rail utilisation of the interstate rail network.
- **Limited IMT capacity** – The current interstate IMT network has small and out-dated terminals.
- **Environmental and social impacts of continuing to use road freight** – Road freight produces higher externality costs on a per tonne basis relative to rail and sea. An additional Interstate IMT would help to alleviate some of the negative environmental and social impacts associated with freight, including greater air pollution and greenhouse gas emissions, fuel consumption and waste generation, noise and vibration, time delays and other congestion costs and fatalities from road accidents.

Additional IMT capacity would be required to enable Sydney to cope with continuing growth in container freight volumes, to fully utilise its investment in port and rail infrastructure and to alleviate the adverse environmental and social impacts of continuing to rely on road transport over rail. The Moorebank IMT is considered to be an integral part of the solution to the immediate challenges in the near future for Sydney's outer southwest. A Moorebank IMT is ideally located to provide a competitive rail solution for the movement of containers to South-West Sydney. However, in the long term, additional freight capacity will be required along the key outer northwest corridor (M4) and is likely to benefit from additional IMT capacity on the western line.

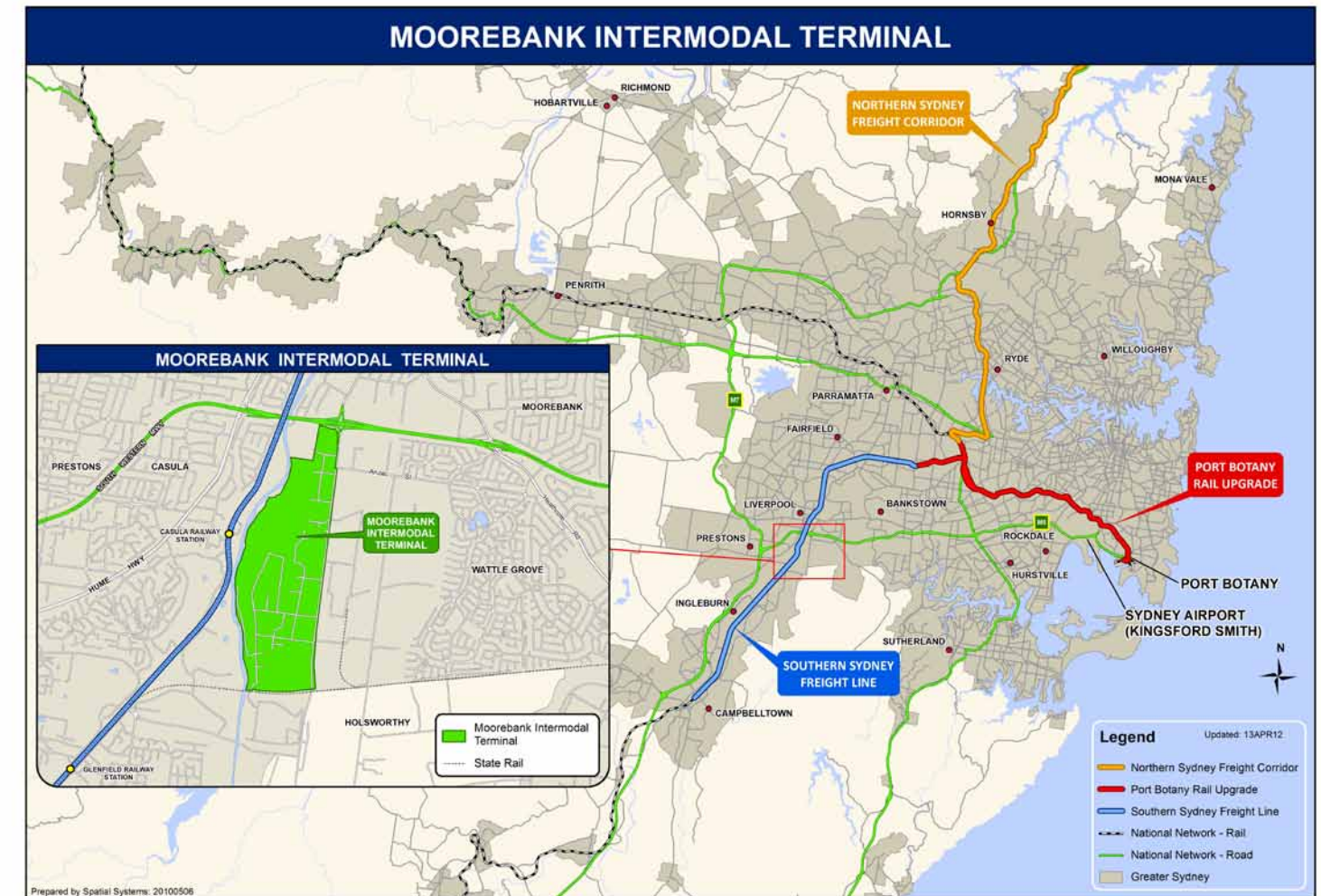
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Is Moorebank a suitable site for an IMT?

The proposed Moorebank site is located approximately 30km South-West of the Sydney Central Business District (CBD) and approximately 4km south of the Liverpool CBD. The site is on 220 hectare (ha) of mainly Commonwealth owned land which is currently occupied by the School of Military Engineering (SME) and a number of other Australian Defence Force (ADF) units. The DoD is developing complementary plans (the Moorebank Unit Relocation (MUR) Project) to relocate the SME, and other Defence units off the site to enable an intermodal project to proceed.

The Commonwealth has identified Moorebank as the logical location for additional intermodal capacity in Sydney. The site has a number of advantages, including that it is:

- Located near to the centre of the South-West Growth Centre (SWGC), adjacent to the SSFL and with direct access to the M5 and M7 Motorway. It is a sufficient distance from Port Botany to make rail a commercially viable alternative to road for movements from/ to the port.
- Centrally located relative to major freight markets, given that almost two-thirds of port container freight is transported to or from markets in Western Sydney.
- Adjacent to existing industrial areas.
- The size and length offers the potential to establish highly efficient and fully integrated IMT capacity to serve port and interstate trains.
- It is one of the last remaining parcels of suitable land for an IMT in Western Sydney with easy access to road and rail infrastructure. While other IMT capacity would also be required in the future, other potential IMT sites in Sydney would require substantial investment in additional infrastructure to link the national road and rail networks, and currently are not viable alternatives.



Nearly two-thirds of Port Botany's container freight is travelling to or from western Sydney.



Related projects

The Moorebank IMT Project is separate from, but has important inter-dependencies with a number of major projects that are underway or planned by the Commonwealth, NSW Government and private sector entities. A number of these related projects are currently being developed in the industry and may affect the Moorebank IMT. These are summarised in Table 1.

Table 1 – Moorebank IMT – Summary of Related Projects			
Project	Project description	Relationship with Moorebank	Indicative project date
Port Botany Expansion	SPC is currently increasing the capacity of Port Botany through the construction of a third terminal to be operated by Hutchison Port Holdings.	This Project would increase Port Botany's throughput and would provide a source of IMEX traffic for the Moorebank IMT.	SPC anticipates the expansion to be completed by late 2012.
Refinancing of Port Botany	The NSW Government has announced plans to refinance state owned assets at Port Botany in order to fund priority infrastructure projects.	Port Botany and the Moorebank IMT have important interdependencies in that Moorebank is expected to facilitate a more efficient transfer of freight in Sydney.	It is anticipated that the Port Botany assets will be refinanced in the first half of 2013.
Port Botany Improvement Strategy (PBLIS)	PBLIS' key objective is to improve the competitive access and service arrangements of container movements between stevedores and transport carriers.	PBLIS is a critical component to the continued future success of operations at Port Botany and therefore is important to the overall viability of the Moorebank Project.	–
Enfield Intermodal Logistics Centre	Hutchinson Port Holding has been appointed to develop, operate and maintain the IMT at Enfield.	Enfield is planned to have a maximum capacity of 300,000 TEU p.a	It is anticipated that the Enfield IMT would be operating by late 2012.
Sydney Southern Freight Line (SSFL)	ARTC is currently developing the SSFL.	The SSFL is in close proximity to the Moorebank site. Connection to the SSFL would provide rail access to Port Botany to and from the Moorebank IMT.	ARTC anticipates completion of the SSFL in December 2012.

Table 1 – Moorebank IMT – Summary of Related Projects			
Project	Project description	Relationship with Moorebank	Indicative project date
Port Botany Freight Line Upgrade	The Port Botany Freight Line is a dedicated freight railway between Port Botany and Enfield/Chullora in central-west Sydney.	All IMEX freight going to/from Moorebank IMT would use the Port Botany Freight Line.	–
Metropolitan Freight Network (MFN)	The MFN consists of dedicated freight lines through metropolitan Sydney.	All IMEX freight going to/from Moorebank IMT would use the MFN.	The MFN is operated by the ARTC pursuant to a long term lease granted by RailCorp.
Moorebank Relocation Unit (MUR)	DoD is currently completing a Business Case to investigate the relocation of the SME, and other ADF Units on the Moorebank site to Holsworthy Barracks.	This relocation project would provide land for the development of the Moorebank IMT.	DoD anticipates the MUR Project could be completed by late 2014, however the MUR Project will not be complete at Holsworthy until mid 2015.
Sydney Intermodal Terminal Alliance (SIMTA) IMT	SIMTA proposes to develop a terminal on the east side of Moorebank Avenue on land occupied by the Defence National Storage and Distribution Centre (DNSDC). It is planned to have a capacity of up to 1 million TEU p.a.	SIMTA would provide an alternative for IMEX services. SIMTA plans to access the SSFL via a route across the southern end of the Moorebank site which is Commonwealth owned land.	In the EPBC Referral, SIMTA has stated that operations could commence by the end of 2013 with stage 1 of its project being completed by mid 2015 .
Defence Logistic Transformation Program (DLTP)	DoD, under the DLTP Project, is proposing to move its current storage and distribution facility and establish a new consolidated facility at West Wattle Grove.	The timing of DoD moving from the SIMTA site to the West Wattle Grove site would influence the timing of SIMTA's proposed IMT construction and operation start dates.	DoD is currently analysing the requirements associated with the DLTP move to West Wattle Grove.



The Australian Government has selected Moorebank as a logical site for an IMT because the site is:

- Adjacent to the Southern Sydney Freight Line (SSFL) and has direct access to the M5 and M7;
- Close to major container destinations and origins;
- Located at a sufficient distance from Port Botany to make rail a commercially viable alternative to road movements from the port;
- Of sufficient size to handle expected IMEX and interstate demand; and
- Owned by the Commonwealth.

Work undertaken during the preparation of the Final Scoping Study concluded that containerised IMEX freight and interstate freight were the most feasible markets for an IMT at Moorebank. A number of other potential freight markets, such as bulk freight (bulk construction materials) and motor vehicles (imported via Port Kembla) were considered in the early stages of the Project but were not considered to be practical options for a freight terminal at Moorebank, and therefore no further analysis was conducted.

The development of a new high capacity IMT with the ability to operate over a 24 hour period, along with improvements to rail and port infrastructure has the ability to substantially improve the operational performance of rail freight making it a more competitive option relative to road freight.

The potential demand for the transport of containers via Moorebank has been assessed for each of the IMEX and interstate freight markets. The analysis has examined:

- Total growth expectations within each of the respective markets.
- The likely distribution of freight within the metropolitan area and the markets that could be served by an IMT at Moorebank.
- The extent to which rail freight prices, inclusive of charges for transfers at Moorebank, can be sufficiently competitive with road freight to induce a change in behaviour by the market.
- The impact of other metropolitan freight terminals and network capacity on freight transported via an IMT at Moorebank.



Infrastructure constraints on demand

The demand estimates allow for a number of infrastructure constraints which limit the volume of containers that can be handled by an IMT at Moorebank. These infrastructure constraints present significant risks which would need to be monitored closely, and managed where possible, to ensure the success of the Moorebank IMT. The constraints include:

- **SSFL and the availability of freight paths** – as noted, the terminal would be dependent on use of the SSFL which would be required to support a variety of freight markets and could reach capacity at a relatively early stage of its life. ARTC has indicated that once the SSFL reaches capacity there is potential to increase the capacity on the line via the construction of passing loops and intermediate signalling.
- **Current rail configuration at Port Botany** – Port Botany is connected directly with the metropolitan freight network. However, the configuration of the rail sidings at the port, as well as operational practices and pricing of rail services, impairs the cost effectiveness and reliability of rail freight at the port. Port Botany Landside Improvement Strategy (PBLIS) aims to address, amongst other things, these issues and the infrastructure constraints at Port Botany which subsequently constrain demand.
- **M5 capacity** – there are pre-existing congestion challenges on the M5 Motorway which represent a particular issue for developing an IMT at Moorebank.

These constraints have been recognised and discussions with the relevant stakeholders to address these constraints are underway.

The demand modelling indicates that as a result of the IMT Project the number of trucks on Sydney's roads related to Port Botany would be reduced by 3,300 vehicles per day from 2019/20 onwards.



Analysis conducted for the Detailed Business Case found strong demand is forecast for an IMT at Moorebank

What is the technical proposal for the Moorebank IMT?

The proposed concept design provides a layout of an IMT that would provide the full range of integrated IMT services including IMEX and Interstate terminals, empty container storage, warehousing and associated ancillary services such as storage, maintenance facilities and administration facilities.

The concept design was developed through an evaluation of options and was subject to a detailed optimisation process. Considerations included:

- Optimising the use of land.
- Infrastructure and equipment to achieve the most cost-efficient solution.
- Ensuring feasible and efficient road and rail access arrangements.
- Responding to social and environmental needs.
- Providing a design that can accommodate the forecast IMEX and interstate freight demand as at 2049/50.

Ultimately, the final design for construction would be driven by the commercial considerations of the Government and or delivery entity and the terminal operator, agreement with the delivery entity's shareholder representatives (for the purposes of meeting the Commonwealth's Project objectives) and approval by the relevant planning agencies.

Proposed concept design

The concept design provides an IMT that occupies the whole of the site at Moorebank and caters for IMEX, and interstate freight and warehousing. The design is based on achieving a feasible IMT solution that can accommodate the forecast IMEX and interstate freight demand under the “Medium” demand scenarios as at 2049/50. The site layout has a sustainable practical capacity of approximately 1.2 million TEU p.a. for the IMEX facility, and 0.5 million TEU p.a. for the interstate terminal. The IMT facility comprises three distinct operational elements:

- Rail access, storage, working and classification tracks.
- Container storage.
- Over-the-road truck gate.

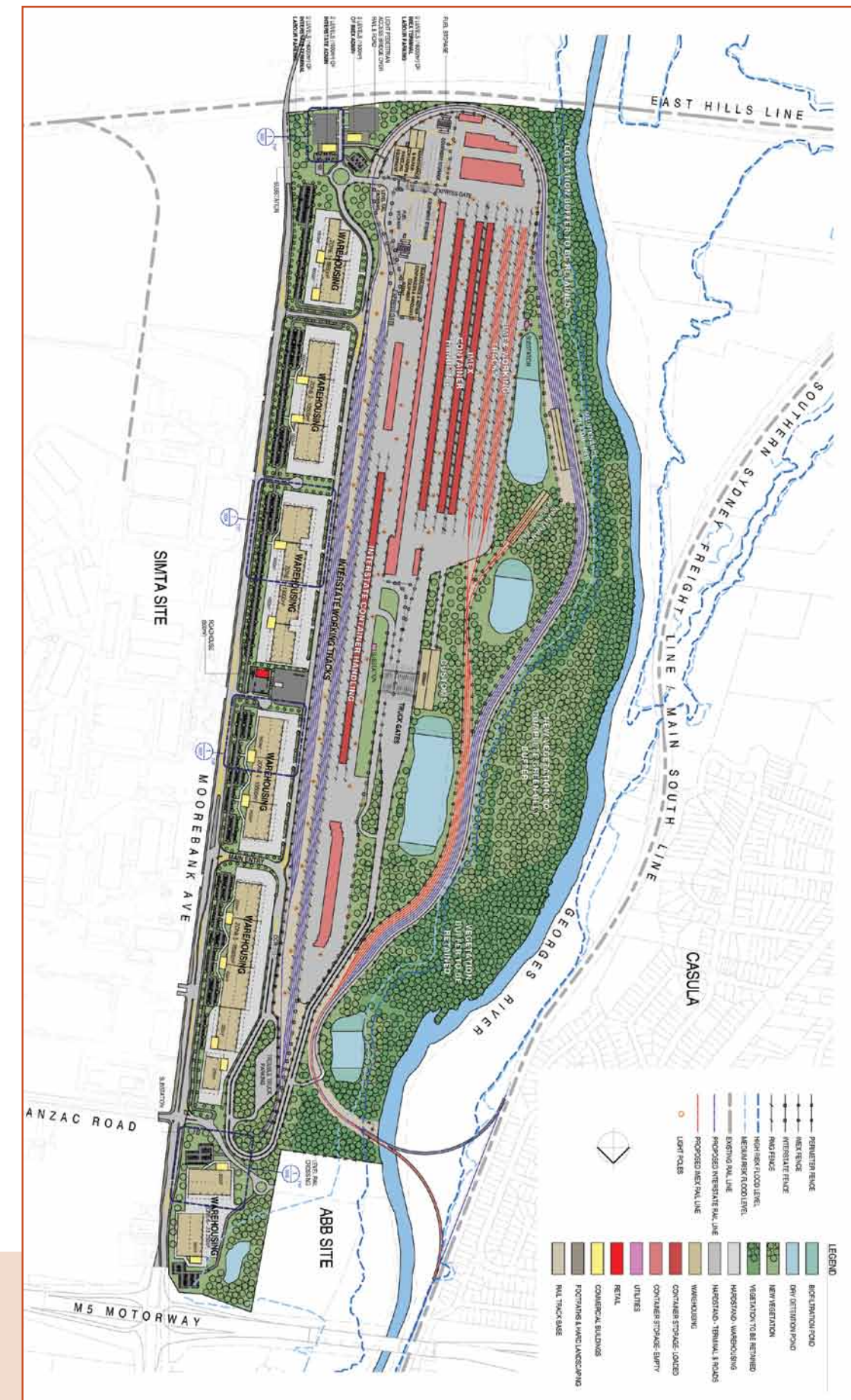
The configuration of these components has been designed to achieve an efficient operation of the facility and includes the following placements:

- Rail access to the site crosses the Georges River at the northern end of the site.
- Heavy vehicle access to the site is located at the northern end of the site.
- Warehousing is located along the western side of Moorebank Avenue.
- Support functions for the terminal are located close to container stacks.
- Rail track occupies the available space between the warehousing and the area to be retained for environmental purposes along the Georges River.

An IMT at Moorebank would enhance the competitiveness of the interstate rail freight network and reduce the adverse environmental and social benefits of continuing to increase road freight.

Indicative Layout

The following diagram provides an overview of the proposed Concept Design IMT layout.



Concept design layout and key features

The proposed layout of the site, as set out in the concept design, has been designed to cater for the site’s ultimate capacity (as based on year 2049/50 demand). Broadly, the layout is as follows:

- **IMEX** – consists of eight working tracks, each capable of accommodating 600 metre trains (the normal length for port shuttle services).
- **Interstate** – Interstate arrival, departure roads, and four working tracks capable of accommodating 1,800 metre Interstate trains.
- **Warehousing** – under the selected IMT technical solution, there is capacity to develop land with complementary facilities. These facilities would support the efficient operation of the IMT and are likely to be attractive to a range of tenants including: retail warehouses, distribution centres, freight forwarders and other logistics organisations.
- **Retail** – the design for the IMT site allows for a 500 square metres ‘roadhouse’ (fast food retail outlets etc.).
- **Connection to the SSFL** – the rail connection into the site would cross the Georges River at the northern end of the site. The IMEX and Interstate trains would share this connection.
- **Road access** – the Project is expected to require the widening of Moorebank Avenue to a four-lane carriageway. The design caters for additional turning lanes to accommodate the increased traffic volumes estimated to occur in 2029/30.
- **Internal roads** – the site layout provides two access roads located at the northern and southern ends of the site. The northern access is south of Anzac Road and is provided for heavy vehicles generated by IMEX, Interstate and warehouse traffic.
- **Truck parking** – the concept design also allows for a “trouble truck” parking area to investigate incidents. The trouble truck parking area would be able to accommodate up to 25 trucks at any given time.
- **Warehousing traffic access** – light vehicles would access the warehouse developments directly off Moorebank Avenue. Heavy vehicles would use northern and southern access points and a warehouse access road parallel to, and west of, the Moorebank Avenue.
- **Landscape design** – the landscape design solution for the Moorebank IMT would maximise the integration of terminal facilities and the associated warehousing precincts by providing screening, breakout space, visual relief etc. Along the Georges River side of the site, the landscaping incorporates the Ecologically Sustainable Development (ESD) initiatives proposed to conserve the existing riverside and the former earthmoving operations training area.
- **Empty container storage area** – the concept design provides adequate empty container storage areas for the IMT. The loaded IMEX container storage can accommodate 6,775 TEU (including Reefer container storage), and the empty IMEX container storage can accommodate 7,200 TEU. The Interstate container storage area can accommodate 1,450 loaded TEU (including Reefer container storage) and 2,200 empty TEU.
- **Utilities** – adequate utilities (electricity, gas, water and sewerage) and water management measures would be provided.
- **Train shunting** – an allowance for arrival and departure tracks was made to facilitate unimpeded movement of trains in and out of the terminal. These tracks also allow for shunting of trains within the terminal.
- **Rail maintenance and repair yards** – these would be located off the arrival and departure tracks to ensure that the efficiency of terminal operations is not compromised. Rail maintenance and repair yards are located a short travel distance away from the refrigerated end of the loaded container storage area at the respective terminals. This will enable a quick emergency response to potential spills or breakages and minimise any interference to terminal operations.

Timing of development

The Project is proposed to be developed in stages to ensure that the provision of new IMEX and Interstate IMT infrastructure, which would ultimately provide capacity for 1.7 million TEU and associated warehouse capacity, is timed to meet market demand. The timing of development is based upon an assessment of a number of technical options and the development of a reference design. The three main stages of development are as follows:

- **Stage 1A IMEX terminal** – construction is to commence in January 2015, with limited on-site works commencing in advance of this date, subject to DoD assessment of the works in operational capability. July 2017 represents the proposed opening date of the IMEX terminal taking into consideration the construction period together with the MUR movement in December 2014. The IMEX terminal would have a capacity of 1.2 million TEU p.a.
- **Stage 1B Warehousing** – construction of six warehousing zones is staged over a period of approximately 30 months commencing July 2016 and is timed to meet market demand.
- **Stage 2 Interstate terminal** – it is proposed that the development of an Interstate terminal be periodically assessed by the Government or delivery entity to determine when demand and other policy considerations warrant the development of a facility. The proposed concept design provides for reservation of part of the site for an Interstate facility which is assumed, currently, to be developed by January 2029 (indicative).

Table 2 – Indicative project construction timetable	
Stage	Dates
MUR Project	October 2012 to July 2015 (with the SME site being vacated by December 2014)
IMEX Construction	January 2015 to June 2017
Interstate Construction ¹	July 2027 to December 2028
IMEX Operations	From July 2017
Interstate Operations ¹	From January 2029

Source: MUR draft DBC, PB Gantt chart and PB cost report

¹Note: Interstate construction is estimated to commence in mid 2027 for completion in early 2029, although the actual timing would be subject to market demand and policy considerations.



Artist's impressions of the proposed Moorebank IMT layout



What economic, social and environmental benefits would the Project deliver?

The economic evaluation measures the costs and benefits of the Project to society. To be economically worthwhile, the benefits of the Project must exceed the capital and operating costs of the Project. Table 3 shows the results of the economic analysis.

Table 3 - Economic evaluation results at a 7% real discount rate – medium growth – incremental to base case	
Measure	Value
Net Present Value (NPV) ¹ (\$ Million)	946
Benefit Cost Ratio (BCR) ²	1.72
NPV/Investment ³	1.05

Source: Deloitte

¹ Net Present Value: the difference between the present value of the total incremental economic benefits (i.e. additional to the base case) and the present value of the total incremental costs at a 7% p.a. real discount rate.

² Benefit Cost Ratio: the ratio of the present value of the total incremental economic benefits to the present value of the total incremental costs.

³ NPV/I: the Net Present Value of the project divided by the present value of the capital cost. This measure is generally used in the context of rationing scarce capital budget funding.

The economic evaluation is confined to the Moorebank IMT Project and does not include the capital cost or benefits of the MUR project. The inclusion of MUR capital costs would substantially decrease the Economic NPV of the Project. However, any adjustment of this nature should also have regard to the benefits of the MUR project although such analysis is outside the scope of this DBC.



The economic, environmental and social benefits of the Project

The provision of increased intermodal capacity in Sydney reduces the unit costs of transporting containers by rail for IMEX and interstate markets. The reduction in rail freight costs means that more containers would be transported by rail, and this is expected to generate ongoing productivity benefits for the community. The total economic Project benefits (before costs) over the 30 year evaluation period are \$10 billion or \$2.3 billion in present value terms. These benefits are derived from a range of sources:

- **Savings in operating costs in the freight transport sector** – productivity improvements which lead to reductions in freight transport operating costs which can be passed onto consumers.
- **Improved freight service reliability and availability** – these benefits measure the improved quality of service experienced by consumers of rail services relative to road services.
- **Road damage cost savings** – these benefits are derived from a decrease in road damage caused by freight trucks.
- **Operating cost reductions** – the economies of scale provided by rail transport would achieve savings in operating costs where it is viable for freight to transfer from road to rail, thereby boosting national productivity.
- **Incremental terminal operator revenue** – this benefit captures the incremental terminal operating surplus.
- **Residual value of assets** – the operational life of the terminal assets would be longer than the economic evaluation period and consequently a residual value can be included as a project benefit for all operations.
- **A reduction in road congestion and road accident costs** – the Moorebank IMT truck volumes would be an estimated 3,300 vehicles per day lower from 2019/20 onwards. This benefit reflects the modal shift to rail which reduces delays and costs for both cars and commercial vehicles hence benefiting the community and industry.
- **Boost employment in South-West Sydney** – during construction and operation of the Moorebank IMT jobs will be created.
- **Journey reliability benefits** – this benefit reflects the savings achieved through more reliable road travel times for the community and industry.
- **A reduction in environmental costs associated with road transport** – environmental benefits include a reduction in noise, greenhouse gas emissions, fuel costs and other air pollution. For example, the Moorebank IMT would save an estimated 9,500 tonnes of CO2 greenhouse gas emissions for every 1 million TEU containers that are transported by rail instead of road for IMEX traffic.

The Moorebank IMT would deliver \$10 billion in economic benefits including reduced freight costs, reduced traffic congestion, reduced traffic accidents and improved productivity.

Quantified economic environmental and social benefits associated with the Project

The key impacts from an economic perspective of proceeding with the Moorebank IMT Project are shown in Table 4.

Table 4 – Estimated key Impacts of Proceeding with the Moorebank IMT Project	
Measure	Value
Net gain of project benefits to NSW economy	• \$950 million net project benefits (2010/11 dollars, discounted).
Lower truck volumes at Port Botany	• From 2020, truck volumes would be 3,300 vehicles per day lower.
For every 1 million TEU containers transported by rail instead of road for IMEX traffic	• 3.5 million litres of fuel would not be required to be consumed. • 9,500 tonnes of CO2 greenhouse gases would not be emitted.
Fuel savings and greenhouse gas reductions for the interstate facility (in the year 2029)	• 4.1 million litres of fuel would not be required to be consumed. • 11,000 tonnes of CO2 greenhouse gases would not be emitted.
Job impact	• 1,650 jobs realised during the construction of the IMEX terminal, and 975 jobs during the construction for the interstate terminal. 1,700 jobs will be realised with the operation of both terminals together with warehousing.

Source: Deloitte, Infrastructure Australia and NSW Government.

Comparison with benchmark projects

The BCR for the Moorebank IMT Project may be compared with other road, rail, passenger and freight projects submitted to Infrastructure Australia. The Moorebank IMT Project, with a BCR of 1.72, is one of the better performing projects and demonstrates its strong economic justification.

The intermodal terminal will attract significant employment to south western Sydney.



Employment benefits for the local economy

The modelling estimates that the Project would lead to an increase in regional employment over the construction phase of approximately 1,650 full time staff during Stage 1 (IMEX terminal and warehousing), and 975 staff during Stage 2 (Interstate terminal). The operation of both terminals, together with warehousing, could see an additional 1,700 people being employed in the region.



The Moorebank IMT will generate substantial economic, social and environmental benefits.

What are the key activities required to deliver the proposed IMT?

Detailed consideration has been given to the activities that would be required to implement the Moorebank IMT Project should approval to proceed be obtained from the Commonwealth Government. The phases and tasks to be undertaken are summarised in Table 5. The Transition Phase along with aspects of the Pre-Procurement Phase could be undertaken through the MPO. The tasks would need to be evaluated and refined following the establishment of the GBE.

Table 5 – Key implementation phases, tasks, key milestones and indicative dates

Phases	Tasks	Key Milestones
Transition Phase (January 2012 to May 2012): Activities during this phase relate to the collection of information to assist the Government decision process regarding a Moorebank IMT.	- Recommendation to Government. - Ongoing engagement with the NSW Government, ARTC and other stakeholders. - Progress work on the EIS. - Preliminary high-level planning for the potential establishment of the GBE and land lease for the IMT site. - Community and stakeholder liaison. - Liaison with Defence and the MUR Project Team.	Government decision (May 2012).
Phase One - Pre -Procurement (May 2012 to December 2012): The focus of activities during this phase relates to NSW Engagement, MUR liaison and the establishment of the GBE.	- Continue NSW Government and ARTC engagement. - Continue community and commercial stakeholder engagement. - Determine the terms and conditions for the land lease. - Establish the GBE. - MUR engagement. - Plan the implementation process between GBE and MPO.	NSW Government and ARTC engagement (2012).
Phase Two - Procurement Planning (February 2013 to October 2013): During this phase the GBE would focus on activities that relate to the procurement planning and progressing stakeholder engagement.	- Conducting a procurement and packaging study. - Transition from MPO to GBE. - GBE to confirm design and commercial model. - Preparation of procurement documentation. - Rail accreditation. - NSW Government engagement. - MUR engagement. - Engagement with ARTC in regards to the spur line and access.	Transition from MPO to GBE (January to July 2013).

Table 5 – Key implementation phases, tasks, key milestones and indicative dates

Phases	Tasks	Key Milestones
Phase Three - Procurement Process (August 2013 to July 2014): During this phase the GBE would focus on activities that relate to the procurement process for the IMEX and warehousing.	- Managing the procurement process for the IMEX terminal. - Managing the procurement process for the warehousing. - Commence GBE reporting to the DoFD and the DoIT.	- The procurement process (commences July 2013). - Contractual close of IMEX and warehousing contracts (July 2014).
Phase Four - Construction (August 2014 to June 2017): During this phase the GBE would focus on activities that relate to the construction process for the IMEX and commercial development (warehousing).	- Oversight of the construction process of the IMEX terminal. - Oversight of the warehousing construction process. - ARTC engagement. - MUR engagement.	- MUR movement (December 2014). - Construction commences (July 2015).
Phase Five - Commencement of Operation (July 2017): During this phase the GBE would focus on activities that relate to the operations process.	- Management of the IMEX and warehousing site. - GBE reporting to the DoFD and the DoIT. - Ongoing analysis of the requirements for an Interstate Terminal on the site (reporting on the policy requirements and demand forecasts).	Commencement of IMEX terminal and warehousing operations (July 2017).

The intermodal terminal will deliver improved environmental outcomes, with less fuel used and less emissions due to reduced road freight – trains generate less emissions and use less fuel than trucks for each container moved.



Does the proposal for the Moorebank IMT contained in the DBC address the Commonwealth's objectives for the Project?

The Moorebank IMT has an important long-term role in the freight supply chain to support national productivity, in particular, enabling more efficient use of existing rail and port assets, reducing business costs and creating jobs in South-West Sydney. Table 6 illustrates that the proposed Moorebank IMT Project (i.e. proposed concept design and commercial structures and arrangements) meets the Commonwealth's Project objectives:

Table 6 – Evaluation of the proposed solution against the Commonwealth's Project objectives		
Objectives	Evaluation	
1 Boost national productivity over the long-term through improved freight network capacity and rail utilisation.	✓	The economic evaluation for the Project indicates that it achieves a BCR of 1.72, which compared with other recent transport projects ranks as one of the better performing projects. The demand analysis indicates strong available demand for the IMEX terminal. This demand is dependent on future trends in factors such as the price of oil, road user charges, exchange rates, the carbon price and labour costs. The Project would contribute to a reduction in rail freight costs and allow more freight to be transported by rail. This would generate a number of benefits for national productivity including savings in transport operating costs, improved freight service reliability and availability, reductions in road congestion, damage and accident costs.
2 Create a flexible and commercially viable facility and enable open access for rail operators and other terminal users.	✓	It is anticipated that a GBE Landlord would be established to oversee the development of the Project to ensure a commercial outcome is achieved. The Project is proposed to be developed in three stages (IMEX, warehousing and Interstate) to ensure that the construction of Interstate infrastructure and associated warehouse capacity is flexible and timed to meet market demand and policy considerations. The solution would provide open access to the Moorebank IMT by rail operators and users, which would encourage competition.
3 Minimises impact on Defence's operational capability during the relocation of Defence facilities from the Moorebank site.	✓	The proposed delivery solution results in no intrusive impacts to DoD's activities on the SME site as the Project will commence only when the site is completely vacated. The Project would also result in the collocation of the SME with the other Defence units on the Holsworthy Barracks.
4 Attract employment and investment to South-West Sydney.	✓	Economic modelling has been carried out to estimate the impact of the Project on the greater Sydney region. During the construction period, the Project is expected to result in an average annual increase to Gross Regional Product of \$135 million p.a. for the IMEX and \$78 million p.a. for the Interstate. The modelling estimates that the Project would lead to an increase in regional employment over the construction phase of approximately 1,650 full time staff during Stage 1 and approximately 975 full time staff during Stage 2. The operation of both terminals together with warehousing could see an additional 1,700 people being employed in the region.

Table 6 – Evaluation of the proposed solution against the Commonwealth's Project objectives

5 Achieve sound environmental and social outcomes that are considerate of community views.	✓	The environmental and social benefits that an IMT at Moorebank would deliver are derived from a range of sources: - The community would benefit from a reduction in road congestion and road accident costs. For example without the Moorebank IMT from 2020 onwards truck volumes would be 3,300 vehicles per day higher. - The Moorebank IMT would bring about a reduction in environmental costs associated with road transport – in particular a reduction in noise, greenhouse gas emissions and other air pollution. For example, the Moorebank IMT would save 9,500 tonnes of Co2-e greenhouse gases for every 1 million TEU containers that are transported by rail instead of road for IMEX traffic. - Journey reliability benefits – this social benefit reflects the savings achieved through more reliable road travel times. - Road damage cost savings – these social benefits measure the cost savings derived from less road damage caused by freight trucks. - The local community would benefit through the creation of 1,650 full time jobs during Stage 1 and approximately 975 full time jobs during Stage 2 construction of the interstate terminal. The operation of both terminals together with warehousing could see an additional 1,700 people being employed in the region. - Overall, the total Project benefits over the 30 year evaluation period are valued at approximately \$10 billion in nominal dollars or \$2.3 billion in present value terms.
6 Optimise value for money for the Commonwealth having regard to other stated project objectives.	✓	The proposed procurement approach was designed to achieve value for money. The Project would facilitate the modal shift from road to rail, would further enhance the Commonwealth's investment in rail infrastructure, would assist in reducing road congestion and road accidents and would assist in raising Port Botany's planning cap. Investment in the Project would also provide a major boost to the economy of South West Sydney by creating employment in the region. There would be minimal impact to DoD's operational capability during the relocation of DoD's facilities from the Moorebank site. The Project would also provide significant economic, social and environmental benefits.



The Detailed Business Case found that the Moorebank IMT has an important long-term role in the freight supply chain to support national productivity, in particular more efficient use of existing rail and port assets, reduce business costs as well as to create jobs in south west Sydney.

Private Sector Participation

Due to the significance of the project and the policy issues involved, the Australian Government will establish a Government Business Enterprise (GBE), protecting the interests of taxpayers.

However the Government is seeking to optimise private sector investment and expertise to deliver a successful and innovative IMT that serves Sydney and the national logistics chain for many years into the future.

In line with this objective, the design, construction and operation of the terminals will be undertaken by the private sector, following a competitive tender process. The process of procurement for terminal operators for the port shuttle will commence in 2013.

The GBE

The GBE is expected to commence operations in 2013, taking over from the MPO as lead agency for the project.

To ensure a strong commercial focus and expertise, the board of the GBE will be drawn from the private sector.

Freight Hub

It is also expected there would be significant complementary development by the private sector in the broader Moorebank area including through the development of warehousing and other services.

Indicative Dates

The following key dates have been proposed for the Project:	
January 2013:	GBE established
July 2013:	Procurement process for port shuttle terminal operator begins
December 2014:	Defence vacates IMT site
January 2015:	Port shuttle construction begins
Mid 2017:	Port shuttle operations begin
July 2027:	Interstate construction begins
January 2030:	Interstate operations begin

Commercial Inquiries

Commercial inquiries are welcome and can be made through emailing MPO at moorebank@finance.gov.au



Planning Approval - Environmental Impact Statement (EIS)

Following the Government decision to proceed with the IMT, MPO will prepare a draft Environmental Impact Statement (EIS) for public display and comment. The purpose of the EIS is to ensure that potential impacts are considered and addressed.

The Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) has determined that Moorebank IMT Project is a Controlled Action requiring the development of an EIS for assessment and approval under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). You can read the project referral prepared by MPO at <http://www.environment.gov.au/epbc/index.html>

On 2 April 2012, SEWPaC released guidelines for the preparation of an EIS for the Moorebank IMT project.

After taking comments on the draft guidelines, SEWPaC has determined what studies will need to be undertaken as part of the environmental assessment. These studies include the effect on air quality, traffic, noise, vibrations, light spill, biodiversity and visual amenity to name a few. The full set of guidelines can be found by visiting the SEWPaC website.

The Commonwealth has also lodged a submission under the EPBC Act and elected to make a submission under Part Four of the New South Wales Environmental Planning and Assessment Act 1979.

The NSW Department of Planning and Infrastructure (DoPI) has issued Director General's Requirements (DGRs) that are the State equivalent of the SEWPaC requirements. The community can find out more about this process by visiting the DoPI website <http://majorprojects.planning.nsw.gov.au>

Community Information Sessions

In October 2011, two Community Information Sessions were held at Casula and Wattle Grove to enable the community to view project information, meet the project team and provide feedback. A series of Community Updates mailed to households have also kept the community up to date on project milestones.

More Community Information Sessions will be held during the draft EIS display period to enable feedback from the local community to ensure all relevant issues are considered. There will also be further Community Updates circulated.



Photos taken from the Information Sessions held at Wattle Grove and Casula in October 2011.