

Moorebank Precinct West - Stage 2 Proposal

Environmental Impact Statement -
(SSD16-7709)



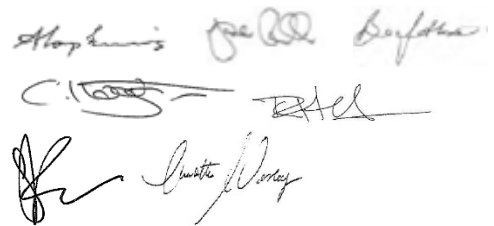


SIMTA

SYDNEY INTERMODAL TERMINAL ALLIANCE

Part 4, Division 4.1, State Significant
Development

SIMTA MOOREBANK PRECINCT WEST – STAGE 2 PROPOSAL

Moorebank Precinct West – Stage 2 Environmental Impact Statement

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STATEMENT OF VALIDITY

Submission of Environmental Impact Statement

Prepared under Part 4, Division 4.1 (State Significant Development) of the Environmental Planning and Assessment Act 1979

Environmental Assessment prepared by

Name:	Westley Owers
Qualifications:	BTP (Hons 1) MProvDev
Address:	Level 5, 141 Walker Street North Sydney, NSW 2060
In respect of:	Sydney Intermodal Terminal Alliance (SIMTA)
Applicant Name:	Sydney Intermodal Terminal Alliance (SIMTA)
Applicant Address:	Level 27, 45 Clarence Street, Sydney NSW 2000
Proposed development:	<p>The Proposal includes the following key components, which together comprise the intermodal terminal facility (IMT):</p> <ul style="list-style-type: none"> ▪ IMT facility, including: <ul style="list-style-type: none"> – Infrastructure to support a container freight throughput volume of 500,000 twenty-foot equivalent units (TEUs) per annum – Installation of nine rail sidings – Truck processing, holding and loading areas – Container storage area serviced by manual handling equipment – Administration facility, engineer’s workshop and associated car parking ▪ Rail link connection – linking the sidings within the IMT facility to the Rail link (which would be constructed as part of the MPE Project) ▪ Warehousing area – construction of 215,000 m² Gross Floor Area (GFA) of warehousing, with warehouses ranging in size from 4,000 m² to 71,000 m². Included within the warehousing area would be ancillary offices, truck and light vehicle parking, associated warehouse access roads. ▪ Freight village – construction and operation of approximately 800 m² of retail premises, with access from the internal road ▪ Upgraded intersection on Moorebank Avenue, which would provide site access and egress ▪ Ancillary works – including vegetation clearing, earth works (including the importation of 1,600,000 m³ fill), utilities installation/connection, signage and landscaping.
Land to be developed:	The Proposal site is owned by the Commonwealth and leased by Sydney Intermodal Terminal Alliance.

	<p>A summary of the legal description (i.e. Lot and Deposited Plan (DP) references) of the Proposal site includes:</p> <ul style="list-style-type: none"> ▪ Lot 1 DP 11977075 ▪ Lots 100 and 101 DP1049508 ▪ Works would also be required within the Georges River, to facilitate construction of the OSD channels, and the Commonwealth ▪ Hourglass land (Lot 4, DP 1130937) and Bootlands (Lot 4, DP 1197707), as part of the Biodiversity Offset Strategy. ▪ Moorebank Avenue, owned by the Commonwealth Government, south of Anzac Road Lot 2, DP 1197707 (formerly part of Lot 3001, DP 1125930) ▪ Moorebank Avenue, owned by Roads and Maritime Services, north of Anzac Road ▪ A portion of Anzac Road, owned by Liverpool City Council ▪ A portion of Anzac Road (Lot 3 of DP 1197707), which is on adjoining Defence land ▪ Bapaume Road, owned by Liverpool City Council.
<p>Environmental Impact Statement:</p>	<p>An EIS is attached which addresses all matters in accordance with Part 4 (Division 4.1) of the <i>Environmental Planning and Assessment Act 1979</i> and Schedule 2, Part 3, clause 7(1)(e) of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>I certify that I have prepared the contents of this EIS in accordance with the Secretary's Environmental Assessment Requirements (SEARs) (Ref SSD 14-6766) dated December 2014, and that to the best of my knowledge, the information contained within this EIS is not false or misleading.</p>
<p>Signature:</p>	
<p>Name:</p>	<p>Westley Owers</p>
<p>Date:</p>	<p>21/10/2016</p>

GLOSSARY

Acronym	Definition
AADT	average annual daily traffic
AAQ NEPM	National Environment Protection (Ambient Air Quality) Measure
ABPP	Australian Bushfire Protection Planners Pty Ltd
ACM	Asbestos containing material
ADG	Australian Code for Transportation of Dangerous Goods by Road and Rail
ADT	average daily traffic
AEP	Annual Exceedance Probability
ARTC	Australian Rail Track Corporation
BAR	Biodiversity Assessment Report
BOS	Biodiversity Offset Strategy
BPR	Best Practice Review
B99	Building 99
CAQMP	Construction Air Quality Management sub-plan
CBD	Central Business District
CBNTCAC	Cubbitch Barta Native Title Claimants Aboriginal Corporation
CCC	Campbelltown City Council;
CEMP	Construction Environmental Management Plan
CEP	Community Engagement Plan
CFFMP	Construction Flora and Fauna Management sub-plan
CHMP	Construction Heritage Management sub-plan
CLM Act	<i>Contaminated Land Management Act 1997</i>
CLMP	Contaminated Land Management sub-plan
CNVMP	Construction Noise and Vibration Management Plan
CO	Carbon Monoxide
COPC	Chemicals of Potential Concern
CORTN	Calculation of Road Traffic Noise
CTIA	Construction Traffic Impact Assessment
CTMP	Construction Traffic Management Plan

Acronym	Definition
CZMP	Coastal Zone Management Plan
DAs	Development Applications
DACHA	Darug Aboriginal Cultural Heritage Assessments
DALI	Darug Aboriginal Landcare Incorporated
dBA	decibel
DCAC	Darug Custodian Aboriginal Corporation
DCP	Development Control Plan
DLO	Darug Land Observations
DoEE	Commonwealth Department of Environment and Energy
ECP	empty container park
EDD	Explosive Detection Dog
EMS	Environmental Management System
ESCP	Erosion and Sediment Control Plan
ESD	Ecologically Sustainable Development
ENM	Excavated Natural Material
EOW	Explosive Ordnance Waste
EPA	Environmental Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regs	<i>Environmental Planning and Assessment Regulation 2000</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPIs	Environmental Planning Instruments
EPL	Environmental Protection Licence
ERA	Environmental Risk Analysis
ERP	Emergency Response Plan
ESCP	Erosion and Sediment Control Plan
FBA	Framework for Biodiversity Assessment
FERP	Flood Emergency Response Plan
FFMP	Flora and Fauna Management Plan
FIAB	Freight Infrastructure Advisory Board
GHG	Greenhouse gas
GHS	Globally Harmonised System

Acronym	Definition
GLALC	Gandangara Local Aboriginal Land Council
GMA	Greater Metropolitan Area
GP	Gross Pollutants
GWP	Global warming potential
HQ	Hazard Quotient
HRA	Health Risk Assessment
ICNG	Interim Construction Noise Guidelines
INP	Industrial Noise Policy
IPCC	Intergovernmental Panel on Climate Change
KPI	key performance indicator
ISEPP	State Environmental Planning Policy (Infrastructure)
LALC	Local Aboriginal Land Council
LCC	Liverpool City Council
LEPs	Local Environmental Management Plan
LGA	Local Government Area
LLEP	<i>Liverpool Local Environment Plan 2008</i>
LMARI	Liverpool Moorebank Arterial Road Investigations
LNG	Liquefied Natural Gas
LoS	Level of Service
LPT	Liquefied Petroleum Gas
LTEMP	Long-Term Environmental Management Plan
MNES	Matters of National Environmental Significance
Mt	mega-tonnes
MUR	Moorebank Units Relocation
NGA	National Greenhouse Accounts
NML	Noise Management Levels
NO ₂	Nitrogen Dioxide
NOA	Naturally occurring asbestos
NOHC	Navin Officer Heritage Consultants
NW Act	<i>Noxious Weed Act 1993</i>
OEH	Office of Environment and Heritage
OEMP	Operational Environment Management Plan
OOH	Out of Hours

Acronym	Definition
OSD	On-site detention
OTMP	Operational Traffic Management Plan
OTTIA	Operational Traffic and Transport Impact Assessment
PAC	Planning Assessment Commission
PAD	Potential Archaeological Deposits
PCEMP	Preliminary Construction Environmental Management Plan
PCT	Plant Community Type
PCTMP	Preliminary Construction Traffic Management Plan
PFAS	Perfluoroalkyl and Polyfluoroalkyl
PHA	Preliminary Hazard Assessment
PIRMP	Pollution Incident Response Management Plan
PM	Particulate matter
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
POTMP	Preliminary Operational Traffic Management Plan
PPE	Personal Protective Equipment
PRA	Preliminary Risk Assessment
RAE	Royal Australian Engineers
RAP	Remediation Action Plan
RAPs	Registered Aboriginal Parties
RBLs	Rating Background Levels
REP	Regional Environmental Plan
RFS	Rural Fire Service
RING	Rail Infrastructure Noise Guideline
RNP	Road Noise Policy
SEPP	<i>State Environmental Planning Policy</i>
SEPP 33	<i>State Environmental Planning Policy No 33 – Hazardous and Offensive Development</i>
SEPP 55	<i>State Environmental Planning Policy No 55 – Remediation of Land</i>
SEPP 64	<i>State Environmental Planning Policy No 64 – Advertising and Signage</i>

Acronym	Definition
SF6	Sulfur hexafluoride
SME	School of Military Engineering
SO ₂	Sulfur Dioxide
SSFL	Southern Sydney Freight Line
SSI	State Significant Infrastructure
SWL	Sound Power Level
SWMP	Soil and Water Management Plan
SWSLHD	South Western Sydney Local Health District
TCE	Trichloroethylene
TEC	Threatened Ecological Communities
tCO ₂ -e	tonnes of carbon dioxide equivalents
TCS Act	<i>Threatened Species Conservation Act 1995</i>
TLALC	Tharawal Local Aboriginal Land Council
TN	Total Nitrogen
TP	Total Phosphorus
TSP	Total Suspended Particulate matter
TSS	Total Suspended Solids
USTs	Underground storage tanks
UXO	Unexploded ordnance
VENM	Virgin Excavated Natural Material
VMS	Variable Message Signs
VPA	Voluntary Planning Agreement
WHO	World Health Organisation
WM Act	<i>Water Management Act 2000</i>
WSUD	Water Sensitive Urban Design
WWI	World War 1
WWII	World War 2

EIS SUMMARY

Introduction

The Moorebank Intermodal Company (MIC) has received Concept Plan Approval, under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), to develop the Moorebank Precinct West Project (MPW Project) on the western side of Moorebank Avenue, Moorebank, in south-western Sydney (the MPW site). The MPW Project involves the development of intermodal freight terminal facilities (IMT), linked to Port Botany, the interstate and intrastate freight rail network. The MPW Project includes associated commercial infrastructure (i.e. warehousing), a rail link connecting the MPW site to the Southern Sydney Freight Line (SSFL), and a road entry and exit point from Moorebank Avenue.

This Environmental Impact Statement (EIS) is seeking approval for Stage 2 of the MPW Project, which comprises the construction and operation of an IMT facility with a container freight throughput volume of 500,000 twenty-foot equivalent units (TEUs) per annum, approximately 215,000 m² gross floor area (GFA) of warehousing, a Rail link connection and Moorebank Avenue/Anzac Road intersection works (the Proposal).

This EIS has been prepared to address:

- The Secretary's Environmental Assessment Requirements (SEARs) (SSD 16-7709) for the Proposal which were issued on 14 July 2016 (Appendix A of this EIS)
- The relevant requirements of the MPW Concept Approval (SSD 5066) granted by the PAC in mid 2016 (Appendix A of this EIS)
- The relevant requirements of the approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (No. 2011/6086) (as relevant) (Section 5 of this EIS).

This EIS has also been prepared to consider and ensure the land use is consistent with the amendment to the LLEP 2008.

This EIS has been prepared to provide a complete assessment of the potential environmental impacts associated with the construction and operation of the Proposal. This EIS proposes measures to mitigate these issues and reduce any unreasonable impacts on the environment and surrounding community.

Site description

The Proposal site is located approximately 27 km south-west of the Sydney Central Business District (CBD) and approximately 26 km west of Port Botany. The Proposal site is situated within the Liverpool Local Government Area (LGA), in Sydney's South West Sub-Region, approximately 2.5 km from the Liverpool City Centre.

The Proposal site is part of the larger MPW site. The M5 Motorway provides the main road link between the Proposal site and the key employment and industrial areas within the West and South Western Sydney Sub-Regions. The M5 Motorway is Sydney's primary arterial route connecting Sydney's City Centre to the western part of the Greater Sydney Metropolitan Region and the NSW road network via the M7 Motorway. Similarly the M5 Motorway is the principal connection to Sydney's north and north-east via the Hume Highway.

The Southern Sydney Freight Line (SSFL) is located one kilometre to the west of the Proposal site and the East Hills Railway Line is located directly to the south of the Proposal site. The SSFL is a 36 kilometre dedicated freight line between Macarthur and Chullora.

The MPW site (including the Proposal site) was recently operating as the School of Military Engineering (SME) and the Royal Australian Engineers (RAE) Golf Course and

Club, however Defence has since vacated the MPW site. The majority of land immediately surrounding the MPW site (and the Proposal site) is owned and operated by the Commonwealth and comprises:

- The Moorebank Precinct East (MPE) site, on the western side of Moorebank Avenue directly adjacent to the MPW site
- Holsworthy Military Reserve, to the south of the MPW site on the southern side of the East Hills Passenger Railway Line
- Commonwealth Residual Land, to the east between the MPE site and the Wattle Grove residential area
- Defence Joint Logistics Unit (DJLU), to the north and north east of the MPE site.

A number of residential suburbs are located in proximity to the Proposal site, including:

- Wattle Grove, located approximately 1,000 m from the Proposal site and 1,000 m from the Rail link connection to the east. The Rail link, which will be used during operation of the Proposal is 1,260 m to the west of Wattle Grove at its closest point
- Moorebank, located approximately 630 m from the Proposal site and more than 1,400 m from the Rail link connection to the north. The Rail link is 2,500 m to the south of Moorebank at its closest point
- Casula, located approximately 330 m from the Proposal site and 1,200 m from the Rail link connection to the west. The Rail link is approximately 290 m to the east of Casula at the closest point
- Glenfield, located approximately 820 metres from the Proposal site and 1,100 metres from the Rail link connection to the south-west. The Rail link is approximately 750 m to the east of Glenfield at its closest point.

The Applicant and Capital Investment Value

On 5 December 2014, Moorebank Intermodal Terminal Company (MIC) and SIMTA announced their in-principle agreement to develop the Moorebank IMT Precinct on a whole of precinct basis. This agreement is subject to satisfying several conditions which both parties are currently working towards. SIMTA is therefore seeking approval to build and operate the IMT facility and warehousing under the MPW Project Concept Approval, known as the Proposal.

MIC, a Federal Government Business Enterprise, would oversee the development of the precinct, providing both funding (for some elements) and land for the MPW Project.

SIMTA will assume responsibility for the delivery of the development, including all future planning applications, the construction of the precinct and the ongoing operations and maintenance of the precinct.

The Capital Investment Value for the Proposal, consistent with the definition provided in the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation), is approximately \$533,000,000 AUD (excluding GST) (refer to the Quantity Surveyors Report prepared by Rider Levett Bucknall at Appendix B of this EIS).

Proposal objectives

The objectives of the MPW Project are identified in the MPW Concept Approval. The objectives of the Proposal, which are generally consistent with those of the MPW Project, include:

- Australian Government objectives (2010):
 - Boost national productivity over the long term through improved freight network capacity and rail utilisation

- Create a flexible and commercially viable facility and enable open access for rail operators and other terminal users
- Minimise impact on Defence's operational capability during the relocation of Defence facilities from the Moorebank site
- Attract employment and investment to west and south-western Sydney
- Achieve sound environmental and social outcomes that are considerate of community views
- Optimise value for money for the Commonwealth having regard to the other stated Project objectives.
- MIC constitutional objectives (2012):
 - To facilitate the development of an intermodal freight terminal at Moorebank, including an IMEX facility, an interstate freight terminal capable of catering for 1,800 metre trains and ancillary facilities by optimising private sector investment and innovation in the development, construction and operation of the intermodal terminal
 - To facilitate the operation of a flexible and commercially viable common user facility which shall be available on reasonably comparable terms to all rail operators and other terminal users
 - To ensure the intermodal terminal operates with the aim of improving national productivity through an efficient supply chain, increased freight capacity and better rail utilisation
 - To operate on commercially sound principles having regard to the Australian Government's long-term intention to sell its interest in the Company (MIC).

Need for the Proposal

The Proposal includes infrastructure which is critical to the on-going distribution of freight interstate, intrastate and throughout the Sydney Metropolitan Area. The Proposal also contributes considerably to a change in mode share (from road to rail) which would result in some positive benefits for the region.

Projected growth in trade volumes will lead to an increase in freight movements interstate, intrastate and across the Sydney Greater Metropolitan Area. This will pose substantial challenges for the supply chain which is currently dominated by road transport. To meet these challenges and to allow for increased use of rail, it is necessary to invest in new intermodal terminal capacity, to develop dedicated freight rail lines, to widen the orbital motorway network and ideally to complete the missing linkages in the current orbital motorway network, and to improve the rail interface at Port Botany.

From a strategic perspective, the introduction of the MPW Project (and the Proposal) would result in wider regional and interstate benefits including:

- The Proposal would help reduce the potential increase in regional freight movements along the M5 Motorway between Port Botany and Moorebank Avenue, thereby easing the Port Botany bottleneck enabling the Port to cope with future growth and provide largescale freight capacity
- Transfer of road haulage between NSW Ports and Western Sydney to rail freight for redistribution thereby helping to reduce traffic congestion and providing improved efficiency for the Sydney road network
- Reductions in articulated truck volumes through the Sydney CBD and inner city suburbs, on the M4 Motorway and the M5 Motorway east of the Moorebank Avenue interchange. The changes in articulated truck volumes on the regional Sydney road network would be reductions in heavy vehicle movements between NSW Ports and Moorebank, thereby relieving the regional Sydney road network of articulated vehicular traffic

- An increase in articulated truck flows, particularly on the M7, Hume Highway and Mamre Road south of the M4 Motorway as well as the M5 Motorway between Moorebank Avenue interchange and the M7 Motorway
- Reductions in vehicle operating costs for heavy vehicles (i.e. vehicle-kilometres-travelled (VKT) and vehicle –hours travelled (VHT)) on the regional road network
- Reductions in vehicle emissions, and subsequently greenhouse gas emissions, resulting from a change in mode share from road to rail.

The Proposal is consistent with the MPW Concept Approval (SSD 5066) allowing for the development of an IMT facility with the capacity of 500,000 TEU per annum. The Proposal provides the necessary infrastructure to enable a throughput of 500,000 TEU including the Rail link connection, rail sidings, container storage, road access and 215,000 GFA of warehousing. The Proposal is considered an important step in achieving the set target for a transport modal shift to rail and would facilitate the development of the MPW site.

Proposal alternatives

Consideration was given to a number of alternatives as part of the approach and design development for the Proposal.

The feasible alternatives considered for the Proposal, include:

- ‘Do nothing’ option: this option was rejected on account of not improving freight transit for outward or inward bound interstate, intrastate and port shuttle freight movements. Similarly, it would not deliver any improvements to general transit conditions on the M5 Motorway or reductions in greenhouse gas emissions from diesel trucks. Furthermore it would not provide temporary and long-term employment opportunities within the region
- Consideration of other alternative sites: a number of alternate sites were considered as part of the MPW Concept Approval. The assessment found the MPW Project presents an ideal location for an intermodal facility in south-western Sydney due to the following factors:
 - It is located near to the South West Growth Centre
 - It is in proximity to major road (M5 Motorway, M7 Motorway and Hume Highway) and rail freight corridors (SSFL, which links the site to Port Botany and the ARTC interstate rail network to Canberra and Victoria)
 - There is a direct intersection linking the adjacent Moorebank Avenue to the M5 Motorway
 - It is zoned as industrial land for use as industrial warehousing
 - Buffer zones are provided between the facility and nearby residential areas
 - It is within the catchment for which there is a demand, resulting in shorter average delivery distances and more efficient use of road transport
 - The location has also been identified in both state and federal strategies as the best, and only location for an intermodal terminal to service this defined catchment in South- Western Sydney.
- Refining design for the Proposal site layout and operations: since the MPW Concept Approval, a number of design refinements have been undertaken to the Proposal. Design changes have been undertaken in response to advice and consultation with government authorities, service providers and the community, as well as additional data from more detailed environmental and social investigations. Where a refinement was likely to have wider implications, or where a range of constraints and alternatives were considered, design refinements were identified in the context of environmental considerations. Design refinements included a number of changes to the IMT facility, the warehousing area and the OSD drainage channels.

Proposal description

The Proposal involves the construction and operation of a multi-purpose IMT facility (that enables interstate and intrastate freight distribution and port shuttle (IMEX) movements), warehousing and a Rail link connection, comprising the following key components:

- Intermodal Terminal Facility, including:
 - Infrastructure to support a container freight throughput volume of 500,000 TEUs per annum
 - Installation of nine rail sidings and associated locomotive shifter
 - Capacity to receive trains up to 1800 m in length
 - Truck processing, holding and loading areas
 - Container storage area serviced by manual handling equipment
 - Administration facility, engineer's workshop and associated car parking.
- Rail link including:
 - Construction of the Rail link connection, which links the sidings within the IMT facility to the Rail link (which would be constructed as part of the MPE Stage 1 Proposal), refer to Section 1.4.4 of this EIS)
 - The operation of the Rail link connection and the Rail link (from the Rail link connection to the SSFL)
- Warehousing area – construction of approximately 215,000 m² GFA of warehousing, plus ancillary offices, with associated warehouse access roads
- Upgraded intersection on Moorebank Avenue, which would provide site access and egress and construction of an internal road
- Ancillary works – including vegetation clearing, earth works (including the importation of 1,600,000 m³ fill), utilities installation/connection, signage and landscaping.

The IMT would operate 24 hrs a day, seven days a week. The warehousing would operate 18 hours a day, five to seven days a week. Hours of operation for the warehousing would generally be 7 am to 1 am. The footprint and operational layout of the Proposal is shown on Figure 0-1.

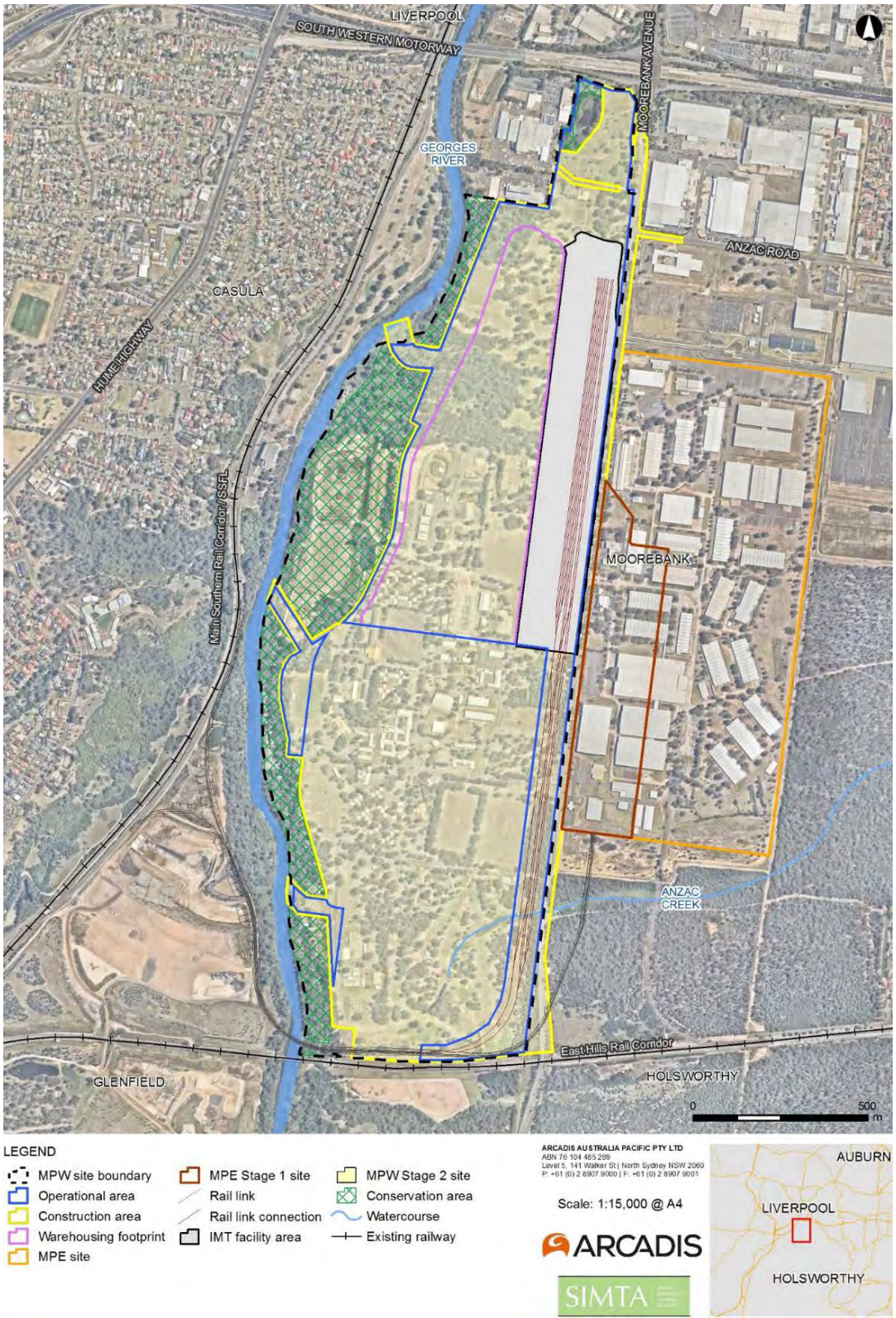


Figure 0-1: Proposal overview

Statutory planning approvals process

On the 3 June 2016 Concept Plan Approval was granted, under Part 4, Section 4.1 of the EP&A Act for the MPW Project (SSD 5066) which includes the following:

- **“Concept Proposal:** *the Concept involves the use of the site as an intermodal facility, including a rail link to the Southern Sydney Freight Line, warehouse and distribution facilities, and associated works.*
- **Early Works (Stage 1):** *involves: the demolition of buildings, including services termination and diversion; rehabilitation of the excavation/ earthmoving training area; remediation of contaminated land; removal of underground storage tanks; heritage impact remediation works; and the establishment of construction facilities and access, including site security.”*

It was generally envisaged, with the MPW Concept EIS and associated documentation, that any further development under the Concept Plan Approval would be undertaken under Part 4, Division 4.1 of the EP&A Act. Although, this has not been stipulated within the MPW Concept Approval and therefore there is the potential for future stages of approval under the MPW Concept Approval to be undertaken under other approval pathways, as defined by the EP&A Act and the relevant Environmental Planning Instruments.

Of particular importance to the Proposal is Schedule 1, clause 19 of the *State Environmental Planning Policy (State and Regional and Development) 2011* (State and Regional Development SEPP), which states that ‘rail and transport related facilities’ that have a capital investment value of more than \$30 million for; (a) heavy railway lines associated with mining, extractive industries or other industry, (b) railway freight terminals, sidings and inter-modal facilities are considered State Significant Development (SSD) and would require assessment under Part 4, Division 4.1 of the EP&A Act.

Further, Schedule 1, clause 12 states that warehouses or distribution centres with a capital investment value of more than \$50 million are considered SSD under the State and Regional Development SEPP. Notwithstanding this, this clause notes that warehouses or distribution centres which are related to ‘rail and transport related facilities’ are not included within the clause, and therefore this capital investment value does not apply. In summary, warehousing related to rail and transport related facilities, such as an intermodal terminal, are considered SSD based on a capital investment value of \$30 million.

The Proposal includes the construction and operation of an intermodal terminal and associated warehousing which is included within the definition of ‘rail and transport related facilities’ and has a capital investment value above \$30 million. Therefore, in accordance with the State and Regional Development SEPP, the Proposal is to be assessed as SSD and approval is sought under Part 4, Division 4.1 of the EP&A Act.

Consultation

MIC and its’ consultants undertook on-going consultation with government agencies, key stakeholders and the community throughout the preparation of the Concept Plan for the MPW Project. The consultation undertaken previously has been a key consideration for the design, construction and operation of the Proposal.

SIMTA has continued this consultation with key stakeholders and agencies as part of the preparation of the EIS for the Proposal and in accordance with the SEARs. SIMTA has consulted with statutory agencies and stakeholders throughout the preparation of this EIS including:

- Local (e.g. Liverpool City Council and Campbelltown City Council), State (e.g. Transport for NSW, Office of Environment and Heritage and the Environment

Protection Agency) and Commonwealth government authorities (e.g. Commonwealth Department of the Environment).

- Service and infrastructure providers (e.g. Roads and Maritime Services)
- Specialist interest groups, including Local Aboriginal Land Councils
- The public, including community groups and adjoining and affected landowners.

This consultation has been undertaken through a range of mediums including emails, phone conversations, face-to-face meetings, workshops and letter submissions.

Feedback provided from stakeholders and the community has assisted with Proposal design modifications and the approach for impact assessments documented in this EIS.

This EIS will be placed on public exhibition in accordance with Section 89F of the EP&A Act. This exhibition period would provide an opportunity for all stakeholders to comment on the Proposal. On completion of the public exhibition period SIMTA would be provided, by DP&E, the submissions received for the Proposal.

Community consultation will continue as an integral component of the Proposal's development process to ensure the views of stakeholders and the community are clearly understood and considered to the fullest extent practicable. SIMTA will consider feedback from stakeholders and the local community during the EIS exhibition process and ongoing phases of project development.

Key environmental issues

The EIS includes an assessment of the Proposal having regard to the key environmental issues identified in the SEARs.

Traffic and transport

An assessment of potential construction and operational traffic impacts generated by the Proposal was undertaken by Arcadis (Appendix M of this EIS). For the construction assessment it was determined the number of truck movements would vary between 6 and 740 truck movements a day, depending on the construction works period. Works Period A (associated with pre-construction works) and the peak construction period (overlap in works periods C, D, E and F) were used for modelling scenarios to represent the worst-case construction traffic impact scenario. SIDRA modelling was used to assess changes to the traffic network performance as a result of the construction of the Proposal. The analysis of the scenarios found that a Level of Service (LoS) of B or C, representing good to satisfactory operating conditions, would be maintained at the key intersections of the M5 Motorway / Moorebank Avenue and Moorebank Avenue / Anzac Road during the AM and PM peak hours. A Preliminary Construction Traffic Management Plan (PCTMP) has been prepared to outline traffic management measures that would be adopted, and further considered as part of the preparation and implementation of the CEMP and CTMP for the construction of the Proposal.

The operational traffic impact analysis determined that the Proposal would generate 1,458 truck movements (2-way) per day, of which approximately 95 percent are expected to arrive or leave between 6 AM and 10 PM. Operational traffic controls have been prescribed to prevent heavy vehicles travelling along Anzac road, Moorebank Avenue (south of the Proposal site entrance) or through the suburb of Wattlegrove to access the Proposal site. Operation of the Proposal would also generate approximately 2,670 car movements (2-way) to and from the Proposal each week day, with approximately 40 percent of trips made during the peak AM and PM periods. Approximately 18 percent of employee car traffic generated by the Proposal would travel to the Proposal site via Moorebank Avenue from the north, while approximately 22 percent and 31 percent would travel to the Proposal site via the M5 Motorway from the east and west, respectively. A further 18 percent would access the site via the Hume highway before linking with the M5 Motorway. 8 percent and 3 percent of employee car

trips would reach the Proposal site via Anzac Road to the east and Moorebank Avenue from the south, respectively. Outbound traffic movements would typically reflect the reverse of inbound movements.

The analysis found that during the opening year of operations (2019) at key road sections, the highest traffic increase attributable to the Proposal is forecast on Moorebank Avenue (north of Anzac Road) with an increase of 17 percent. The analysis also indicates a minor increase to traffic on Anzac Road (east of Moorebank Avenue) (approximately 1.9 percent), along Moorebank Avenue (south of Anzac Road) and Cambridge Avenue (less than 0.5 percent) attributable to the Proposal. Intersection modelling for the opening year of operations identified the highest traffic increase attributable to the Proposal is predicted at the Moorebank Avenue / Anzac Road intersection, which provides vehicular access to the Proposal site (20 percent to 26 percent increase during peak hour). The operation of the Proposal is also predicted to increase traffic at the M5 Motorway / Moorebank Avenue intersection by 11 percent to 14 percent in 2019.

In the 10-year design horizon (2029), the traffic increases to both road sections and intersections is expected to reduce proportional to background traffic levels. For this period, the traffic increase attributable to the Proposal is expected to be 14 percent on Moorebank Avenue (north of Anzac Road) and 1.6 percent on Anzac Road (east of Moorebank Avenue). The increase to traffic at key intersections is also predicted to reduce based on rising background levels, with an increase to traffic at the Moorebank Avenue / Anzac Road intersection by 6 percent to 7 percent, and the M5 Motorway / Moorebank Avenue by 3.5 percent to 4 percent by 2029.

Overall, it is concluded that the Proposal (and cumulative scenario including the Proposal) would result in only marginal traffic impacts to the surrounding road network in the presence of mitigation and management measures. The analysis shows that with the exception of the Moorebank Avenue/Anzac Road intersection, all of the key intersections within the study area would require upgrades to manage existing and projected background traffic volumes before the addition of the traffic generated by the Proposal. The following intersection upgrades (in part or in full) are recommended as part of the Proposal, subject to negotiations with Roads and Maritime:

- Moorebank Avenue/Anzac Road

A Preliminary Operational Traffic Management Plan (POTMP) has been prepared to identify the management strategies to minimise traffic impacts associated with operation of the facility and would be finalised prior to operation of the Proposal.

Noise and vibration

A Noise and Vibration Assessment was prepared by Wilkinson Murray (2016) (Appendix N of this EIS) to assess the potential noise and vibration impacts arising from the construction and operation of the Proposal.

Potential noise and vibration impacts were assessed in general accordance with the following NSW Government guidelines and policies:

- NSW Industrial Noise Policy (INP) (EPA, 2000)
- Noise Guide for Local Government (NGLG) (EPA, 2013)
- NSW Road Noise Policy (RNP) (DECCW, 2011)
- Rail Infrastructure Noise Guideline (RING) (EPA, 2013)
- Interim Construction Noise Guideline (ICNG) (DECC, 2009)
- Assessing Vibration: a technical guide (Assessing Vibration) (DEC, 2006).

This assessment considered each works period for the construction phase and determined that the construction noise emissions are expected to comply with the established Noise Management Levels (NML) at all sensitive receivers, with the

exception of Casula, where construction noise levels during bulk earthworks are predicted to exceed the NML by 1 dBA. This exceedance is considered negligible and does not warrant mitigation. Construction noise levels during all proposed out of hours works periods are predicted to comply with the NML at all times.

Cumulative construction noise levels due to concurrent activities associated with MPW Early Works, MPE Stage 1 and the Proposal are predicted to comply with the NMLs at all receivers, with the exception of Casula, which exceeds the NML at the most affected residential receivers by up to 2 dBA. This is considered a negligible exceedance.

The assessment also concluded that given the substantial setback distances to nearby receivers, construction vibration impacts are considered unlikely.

The Noise and Vibration Assessment also determined that the operational levels from the Proposal would comply with the relevant criteria, including relevant sleep disturbance goals. Additionally, cumulative noise levels due to the concurrent operation of the Proposal and the MPE Stage 1 Proposal are predicted to comply with the established criteria.

An assessment of road noise was undertaken in accordance with the RNP criteria and using the Calculation of Road Traffic Noise (CORTN) algorithm. The assessment concluded that increases in road traffic noise as a result of the Proposal are considerably less than 2 dBA and are therefore compliant with the RNP.

An assessment of rail noise from the Proposal was undertaken in accordance with the RING and previous submissions from the EPA. L_{Aeq} and L_{Amax} rail noise levels at the most sensitive residential receivers near the Rail link are predicted to exceed the project specific rail noise criteria. However, due to the proximity of these receivers to the SSFL, rail movements associated with the Proposal are not expected to result in a noticeable change to the existing L_{Aeq} and L_{Amax} rail noise levels.

A Construction Noise and Vibration Management Plan (CNVMP) would be developed for the Proposal, considering all reasonable and feasible measures to reduce noise levels at sensitive receivers.

Air quality

An Air Quality Impact Assessment was prepared by Ramboll Environ (2016) (Appendix O of this EIS) to assess the potential air quality impacts arising from the construction and operation of the Proposal. The construction phase of the Proposal would involve site clearing, bulk earthworks and placement of engineering fill, which would generate dust emissions. Exhaust emissions from operation of construction vehicles and plant would also generate particulate emissions. These impacts can be effectively controlled through the implementation of standard control measures, including the use of water carts on haul roads and during other particulate emission generating construction activities. The Air Quality Management Plan, included in the Air Quality Impact Assessment would be further progressed and incorporated into the CEMP for the Proposal.

Emissions to air associated with operation of the Proposal were calculated for the key air pollutants associated with diesel combustion, being:

- Particulate matter (PM10 and PM2.5)
- Nitrogen oxides (NOx)
- Sulfur dioxide (SO2)
- Carbon monoxide (CO)
- Speciated HC / VOCs – benzene, 1,3-butadiene and PAHs.

The modelling results indicated that the construction phase emissions would comply with all relevant impact assessment criteria. The predicted increase in annual average PM₁₀, PM_{2.5}, Total Suspended Particulate matter (TSP) and dust deposition are

considered minor, when compared against existing background conditions. Cumulative predictions are also presented and the results indicate that the construction for the Proposal would result in no additional days over the criteria.

For the operational phase of the Proposal the maximum increase in PM₁₀ and PM_{2.5} is minor when compared to existing background conditions. When background is added, there are no additional exceedances of the short term impact assessment criteria. The annual average background concentrations of PM_{2.5} already exceed the NEPM reporting standard, therefore cumulative predictions are also above the standard at all receptors. It is noted, however, that despite the existing exceedance of the annual average background concentration, the Proposal results in a relatively minor additional increase in annual average PM_{2.5} (<0.4 µg/m³ at all sensitive receptors). The predicted NO₂, CO, SO₂ and VOC concentrations are well below the relevant impact assessment criteria.

Measures to further mitigate air quality impacts would be implemented as per the Air Quality Management Plan, included in the Air Quality Impact Assessment (Appendix O of this EIS), and would be included in the OEMP, including:

- Implementation and communication of anti-idling policy for trucks and locomotives
- Complaints line for the community to report on excessive idling and smoky vehicles
- Procedures to reject excessively smoky trucks visiting the site based on visual inspection.

Human health

A Health Risk Assessment (HRA) was prepared by Ramboll Environ (2016) (Appendix P of this EIS) to assess potential health risks posed by the air and noise emissions on the surrounding community arising from the construction and operation of the Proposal.

The HRA was undertaken in accordance with approved Australian guidance for performing risk assessments, including:

- Health Impact Assessment – A Practical Guide - Centre for Health Equity Training, Research and Evaluation (CHETRE, 2007)
- Environmental Health Risk Assessment: Guidelines for Assessing Human Health Risks from Environmental Hazards (enHealth, 2012a).

The focus of the air quality HRA was on the health impacts of emissions from the operation of the Proposal. The key air pollutants evaluated in the local air quality assessment were considered as chemicals of potential concern (COPCs) and inhalation of air was the only exposure pathway evaluated. The air quality HRA evaluated a range of health endpoints associated with the key air pollutants, including increases in mortality and morbidity as well as excess lifetime cancer risks.

The results of the HRA found that the increase in risk due to air pollution from the operation of the Proposal are low or negligible. The cancer risk from the air toxins are well below acceptable risk levels set by international agencies. The implementation of best practice measures as outlined in the Air Quality Best Practice Review (Appendix O of this EIS) would lead to further reductions in air pollution levels and the associated health risks.

The noise HRA has investigated the impact of noise from operation of the Proposal and rail noise on sleep disturbance, annoyance and cognitive impairment using the World Health Organisation (WHO) community noise guidelines. The noise from both operation of the Proposal and cumulative assessment scenario meets the WHO community noise guidelines at all residential receivers. A Hazard Quotient (HQ) greater than 1 was predicted for annoyance and cognitive impairment at the nearest industrial receivers, however, the HQs for existing ambient noise already exceed 1 for annoyance and cognitive impairment at these receivers. Similarly, although rail noise and total noise

exceed the WHO community noise guidelines, the existing ambient noise levels are already above these guidelines and on this basis the Proposal related noise is expected to have minimal additional impact on the local residential area. With the implementation of the best practice measures outlined in the Noise and Vibration Impact Assessment (Appendix N of this EIS), these exceedances would be minimised and as a result the risk to health of the local community would be low.

Biodiversity

A Biodiversity Assessment Report (BAR) was prepared for the Proposal in accordance with OEH's *Framework for Biodiversity Assessment (FBA)* under the *NSW Biodiversity Offsets Policy for Major Projects* published in October 2014 (Appendix Q of this EIS). The BAR identified impacts to three threatened ecological communities (TECs) listed under the *Threatened Species Conservation Act 1995 (TSC Act)* and/or *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* associated with the following Plant Community Types (PCTs) in the Proposal site:

Table 0-1: Impacted plant community types

Plant Community Type	Equivalent TEC	TSC Act Status	EPBC Act Status	Impact (ha)
Hard-leaved Scribbly Gum - Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin	Castlereagh Scribbly Gum Woodland in the Sydney Basin bioregion	Vulnerable	Endangered	15.51
Parramatta Red Gum woodland on moist alluvium of the Cumberland Plain, Sydney Basin	Castlereagh Swamp Woodland	Endangered	-	0.92
Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin	River-flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South-east Corner bioregions	Endangered	-	30.62

Two threatened flora populations were also identified to be impacted on the Proposal site:

- *Persoonia nutans*, Nodding Geebung (Endangered – EPBC Act & TSC Act) – 10 individuals impacted
- *Grevillea parviflora* subsp. *parviflora*, Small-flowered Grevillea (Vulnerable – EPBC Act & TSC Act) – 16 individuals impacted.

The clearing of vegetation will result in the loss of specific fauna habitat components, including live trees, tree hollows, foraging resources, groundlayer habitats such as ground timber and well-developed leaf litter. These resources offer sheltering, foraging, nesting and roosting habitat to a variety of fauna, including threatened fauna, occurring within the locality. The Proposal will require removal of over 43 hollow-bearing trees.

The assessment of ecosystem credit species associated with PCTs on the development site found that two threatened fauna species have a high likelihood of occurrence and 16 have a moderate likelihood of occurrence.

A Threatened Dragonfly Species Survey Plan was prepared in consultation with DPI Fisheries (Arcadis 2016) as part of the MPW Concept Approval. The objective of the plan is to determine the presence or absence of threatened dragonfly species listed under the FM Act on the Georges River, adjacent to the development site. Field assessment of potential dragonfly habitat was undertaken in September 2016 as part of the plan. No habitats for threatened dragonfly species were detected in the survey area after an extensive ecological assessment, and it is considered highly unlikely that they occur in the surveyed area. No impact to threatened dragonflies is anticipated as a consequence of the Proposal.

The Proposal would also result in impacts to habitat connectivity in the riparian corridor of the Georges River, potential weed spread and loss of hollow-bearing trees. Biodiversity-related impacts would be managed through the implementation of appropriate mitigation measures. A Biodiversity Offset Strategy has been prepared to offset the loss of TECs, threatened flora and threatened fauna habitat in accordance with the FBA and *NSW Biodiversity Offsets Policy for Major Projects*. This would contribute to the conservation of the TECs, threatened flora and threatened fauna habitat impacted by the Proposal.

Amiens wetland is a small freshwater wetland on the Georges River floodplain adjacent to Amiens Road in the north of the Proposal site. Dr John Porter, wetland specialist, prepared an assessment to determine whether the Amiens wetland is artificial or a natural lake basin, its significance, and recommended mitigation measures (Porter 2016). The assessment is provided in Appendix Q of this EIS. This assessment concluded that the Amiens wetland is a natural floodplain wetland of the Georges River, albeit strongly impacted by weeds, vertebrate pests and pollution. Despite high levels of disturbance, the wetland is one of the last remaining examples of natural freshwater floodplain wetlands in the locality and as such has significance for biodiversity and habitat conservation. Mitigation measures to minimise the potential impacts on this wetland have been provided.

Stormwater and flooding

An assessment of the potential stormwater and flooding impacts associated with construction and operation of the Proposal was undertaken by Arcadis (Appendix R of this EIS). The Proposal site is located entirely within the Georges River catchment, with the majority of the Proposal site draining into the Georges River. A small wetland (Amiens wetland) is located in the north eastern corner of the Proposal site, which acts as a controlled detention basin for the M5 Motorway and adjacent catchment. In addition, Anzac creek receives surface flows from a very small portion of the Proposal site, located in the south eastern corner.

Construction of the Proposal would require vegetation clearing and the importation and placement of large amounts of fill material to level and raise the site, which has the potential to lead to erosion and generate sediment laden runoff into the Georges River, thereby impacting water quality. The majority of the Proposal site has been assessed as having a low erosion potential, however, works within the vicinity of the Georges River and Anzac Creek would have high erosion potential and would be managed accordingly. A Soil and Water Management Plan (SWMP) and Erosion and Sediment Control Plan (ESCP) would be prepared in accordance with the principles and requirements of the Blue Book. These SWMP and ESCP would be implemented during construction, and would include sediment basins positioned generally along the western boundary of the Proposal site, with an additional basin near the south eastern corner of the Proposal site to treat any flows that may discharge to Anzac Creek. The risk of

regional flooding for a storm event up to the 100 year ARI or PMF event is considered negligible for all construction works outside of the Georges River riparian corridor.

Development of the Proposal would result in changes to the Proposal's catchment boundaries during operations. Onsite detention (OSD) in the form of sediment basins, outlet channels and water sensitive urban design (WSUD) elements have been sized to provide adequate system capacities and mitigate potential adverse flood impacts and increases in stormwater discharge from the site that may otherwise result from the Proposal. WSUD measures, including gross pollutant traps and rain gardens, have been included and designed to ensure the quality of stormwater leaving the Proposal site would be of equivalent quality to the existing conditions, or provide an improvement to stormwater quality leaving the site. Maintenance of OSD and WSUD structures, as well as water quality monitoring would be included in the OEMP for the Proposal.

A Flood Emergency Response Plan (FERP) would be developed for the Proposal site. The FERP would take into consideration, site flooding and broader flood emergency response plans for the Georges River floodplains and Moorebank area.

Geology, soils and contamination

Golder Associates Pty Ltd undertook geotechnical and land contamination investigations to determine the suitability of the Proposal site for the construction and operation activities to address the SEARs relating to geology, soils and contamination (Section S of this EIS).

It was determined that the greatest risk to geology and soils onsite would be during the construction phase of the Proposal when significant ground disturbance will be required to level and raise the site, while temporary stockpiling, and construction of internal roads and structures would also expose soils, creating the risk of erosion and sedimentation. The large area of disturbance required at the site and timeframe of construction for the Proposal means that, if not appropriately managed, there is a high potential for erosion from the Proposal site. As discussed above, construction would be undertaken in accordance with the SWMP and ESCPs that would prescribe appropriate measures to prevent erosion and sedimentation. Excavations onsite during construction of the Proposal are not anticipated to intrude upon the water table. Construction works, with the exception of the OSD channels, are unlikely to expose acid sulphate soils or areas of potential acid sulphate soils given the bounds of the construction footprint. Construction within areas of close vicinity to the Georges River would be carried out in accordance with an Acid Sulfate Soils Management Plan.

Once constructed, the operation of the Proposal would have minimal impact on soils as the site would be stabilised with suitable materials. Stabilisation would include fill materials, hardstand areas, railway ballast and landscaping, which would significantly reduce the risk of on-site erosion.

The *Moorebank Intermodal Terminal Contamination Summary Report (Golder, 2016b)* provides a summary of the known contamination risks on the Proposal site identified in previous investigations, noting that the majority of contamination remediation would be undertaken during Early Works. The report also provides a discussion of possible contamination risks and remediation options for the Proposal.

It is noted that unexpected impacts or structures may exist within the Proposal site that may be potential sources of contamination or be indicators of contamination. Should these be encountered during construction, the unexpected finds protocol would be implemented.

The following section outlines how the various contamination aspects identified or potentially present on the Proposal site could impact on human health and/or the environment during construction, and how they would be managed.

Asbestos in or on soils

Bonded Asbestos containing material (ACM) fragments have been identified in the former sewerage treatment plant and golf course stockpile (present within demolition waste) and are considered the primary asbestos impact across the shallow soils. There is also potential for redundant utilities constructed of ACM to be present across the site. The ACM within these areas is expected to be consisting of bonded asbestos and non-bonded asbestos. There is a low risk to human health impacts should this material become exposed during site preparation works. Direct remediation activities in accordance with relevant documentation forming the Remediation Action Plan (RAP) would be undertaken at these sites.

Remnant UXO, EO or EOW

During construction of the Proposal there is potential to encounter remnant unexploded ordinance (UXO), exploded ordinance (EO) or explosive ordinance waste (EOW) items. Based on the investigations completed to date, the bulk of the UXO, EO and EOW identified on the site is expected to be small individual items such as fired, and unfired small arms ammunition (SAA) blank training items, and fired and unfired flares / smoke grenades (including grenade levers and other components). These items are not anticipated to pose a significant risk to the environment or to human health with implementation of appropriate measures during the site's construction and operations.

Anthropogenic fill deposits

Anthropogenic fill deposits (buried waste deposits) have been identified at a number of locations across the Proposal site. This material may be geotechnically unsuitable and based on investigations to date, pose a low contamination risk to worker health. Due to ACM being evident within topsoil across the Proposal site and the variable nature of anthropogenic fill sites, mitigation measures are prescribed to minimise the human health risks associated with direct contact exposure to ACM material.

Trichloroethylene (TCE)

TCE contamination has been detected in groundwater and soil vapour through previous reports in a localised area in the north western corner of the Proposal site. It is anticipated that this area will remain an open space/riparian zone, in which case the long-term health risks were assessed as low, as workers would only temporarily access the area while constructing the OSDs for the Proposal.

Perfluoroalkyl and polyfluoroalkyl substances (PFAS)

Based on the PFAS concentrations identified in the groundwater on the site, and the evidence presented in the current literature on the bioaccumulation risks associated with PFAS, there is a risk that a complete exposure pathway exists between the PFAS source areas identified on the site and ecological receptors within the Georges River. In turn this presents a plausible pathway for human health exposure through the potential consumption of fish caught within the impacted area via recreational fishing. Monitoring of groundwater, sediment and surface water will be undertaken, along with a risk assessment in accordance with relevant guidelines to determine the extent of the contamination issue present on the Proposal site and, if required, prescribe remediation/management measures.

Hazard and risk

A Preliminary Risk Screening in accordance with SEPP 33 for the Proposal has been undertaken. Hazards and risks associated with the Proposal may arise from a number of activities including remediation works (remaining after Early Works), rail and road logistics, storage of hazardous materials, refuelling, waste disposal and equipment maintenance. Key hazards and risks associated with the Proposal include presence of contamination on site (including asbestos), loss of containment of flammable/combustible or corrosive liquids, fire and explosion, vehicle movements and machinery use, dangerous goods storage and transport and gas leaks.

Dangerous goods have been explicitly excluded from the types of freight that the Proposal would handle (i.e. they would not be accepted), and would therefore also be excluded from the Proposal's warehouse, freight container storage and transit areas. Therefore, there is considered to be no risks from dangerous goods in freight, transit or storage and no assessment has been undertaken.

The IMT facility will also have an above ground mobile refuelling tank located adjacent to the proposed locomotive shifter. The contained tank would store diesel fuel (class C1 combustible liquid), with a maximum capacity of approximately 60,000 litres.

Key mitigation strategies for management of hazard and risk include:

- A CEMP, including an Incident Response Plan and Spill Management Procedure, would be developed to minimise the likelihood of an incident occurring
- Prior to commencement of construction an Asbestos Management Plan, in accordance with *Code of Practice How to Manage and Control of Asbestos in the Workplace* (WorkCover NSW, 2011), will be developed for the Proposal
- Emergency response and incident management protocols for operation of the Proposal would be developed collaboratively with the terminal operator in consultation with the NSW police force, NSW Fire Brigade, NSW Rural Fire Service and the Ambulance Service of NSW as appropriate. These would be prepared prior to operation of the Proposal.

Visual amenity, urban design and landscape

Reid Campbell has undertaken an assessment of the visual amenity implications, including from light spill, associated with the Proposal. A Landscape Plan has been prepared by Groundlink to identify the landscaping features of the Proposal and is included in Appendix E of this EIS. In addition to this a Visual Impact Assessment (VIA) (Reid Campbell, 2016), Light Spill Assessment (Arcadis, 2016) (refer to Appendix T of this EIS), and light spill assessment of locomotive operations, included in the Rail Access Report (AECOM, 2016) (refer to Appendix F of this EIS), have been prepared to assess the potential visual and light spill impacts of the Proposal.

The extensive native bushland areas, Department of Defence facilities on neighbouring lands, the MPE site and the general pattern of industrial type development surrounding the Proposal site screen it from much of the greater sensitive surrounding areas, which are primarily residential. Furthermore, landscape and urban design features, would further screen the Proposal as well as integrate the Proposal with surrounding land uses, minimising the visual impact.

The construction phase of the Proposal includes a number of temporary structures, including ancillary facilities, batching plant, offices, workshop etc, which would have short term and temporary impacts on the surrounding streetscape. These temporary structures are likely to be visible from areas such as Moorebank Avenue, the nearby passenger rail lines and potentially nearby residential areas of Casula, Glenfield and Wattle Grove. Any visual impacts would be localised and temporary in nature. Notwithstanding this a number of actions would be considered during the construction of the Proposal to further reduce the visual impacts on the surrounding area.

Lighting would be required during construction of the Proposal within ancillary facilities, and on plant and equipment. The impacts of light spill during construction are expected to be minor as it would be localised and temporary in nature. In addition, this lighting would be designed and located to minimise the effects of light spill on surrounding sensitive receivers, including residential areas and the proposed conservation area.

The Proposal would generally be in keeping with the existing character of the area. Some relatively high and/or bulky structures/equipment may however increase the visibility of the Proposal site beyond its current levels, with some limited and highly localised visual impacts. Potential views would occur along viewing corridors created by Moorebank Avenue and where topography provides some elevation above potential obstructions to views, such as from Casula to the west.

Overall, the Proposal is in keeping with the surrounding land uses and any impacts would be effectively minimised through the use of landscaping and urban design, the maximum anticipated visual impact at any view point would be Moderate. The proposed landscape and built form treatments would result in an improvement in the visual amenity of the entire site and would increase the current level of screening of the site. Urban design and planning principles assist with the breakdown of the bulk and scale of the development and contribute to the creation of one cohesive landscape.

In addition, the Proposal would result in minimal effect on adjacent properties and on the environment through the appropriate selection of light source, luminaire, luminaire mounting height and luminaire aiming for operational lighting.

Indigenous heritage

Artefact prepared an Aboriginal Heritage Impact Assessment to determine the potential impacts of the Proposal on Indigenous heritage significance (refer to Appendix U of this EIS).

The construction of the Proposal would result in direct impacts to MA6, MA7, MA10, MA14, MPW Stage 2 Terrace PAD and the Tertiary Terrace. No impacts to Indigenous heritage were identified for the operational phase of the Proposal.

Further, five other sites are located in proximity to the Proposal site. MA11, MA12, MA13 and MAPAD2 are located on the western side of the Georges River and MA8 is located within the conservation area adjacent to the Proposal site. There would be no impacts to these sites as a result of the Proposal.

Mitigation measures proposed include the relocation of the scar portions of both scar trees (MA6 and MA7), the salvage excavation of the other four items/areas on the Proposal site and the implementation of an unexpected find procedure.

Non-Indigenous Heritage

Artefact prepared a Non-Indigenous Heritage Impact Assessment to determine the potential impacts of the Proposal on non-Indigenous heritage (refer to Appendix V of this EIS).

The assessment identified one on-site item (the Moorebank Cultural Landscape) and three surrounding items (Kitchener House, Glenfield Farm and Casula Power Station) that would be impacted by the Proposal. No direct impacts during construction or operation are anticipated at the three surrounding items, however there is the potential for indirect impacts (i.e. noise and visual impacts). These indirect impacts are considered within the Noise and Vibration Impact Assessment and Visual Amenity, Urban Design and Landscape Report prepared for the Proposal (refer to Appendices N and T of this EIS).

Regarding the Moorebank Cultural Landscape, it was determined that the net impact generated by the Proposal (during construction and operation) would be likely to result

in disturbance to archaeological deposits, removal of landscape elements, partial loss of the existing landscape setting, historical associations and the landscape's research potential. The retention of portions of bushland vegetation and some cultural heritage values would assist in preserving the existing cultural values of the Moorebank landscape, along with the archival recording of archaeological items disturbed as a result of the Proposal construction.

Additionally, the Unanticipated Discoveries Protocol would be followed in the event that historical items or relics or suspected burials are encountered during excavation works

Greenhouse Gas

A review of direct and indirect greenhouse gas (GHG) emissions was prepared by Arcadis, which assessed the impacts on greenhouse gas emissions from the construction and operation of the Proposal. The construction and operation of the Proposal would result in the generation of GHG emissions.

The total GHG emissions associated with the construction of the Proposal are expected to be 32,724 tonnes of carbon dioxide equivalents (tCO₂-e) during the 36 month construction period. Carbon sequestration loss due to vegetation removal comprises 64% of the emissions, with bulk earthworks, drainage and utilities works contributing 16% of the emissions.

The total GHG emissions associated with the operation of the Proposal include 11,511 tCO₂-e per year (Scope 1 emissions) and 45,101 tCO₂-e per year (Scope 2 emissions), equating to 56,612 tCO₂-e per year total emissions.

The total annual emissions of the Proposal amount to approximately 0.01% of Australia's total annual GHG emissions (525.2.6 Mt CO₂-e) and 0.07% of Australia's total transport emissions (92.9 Mt CO₂-e). Accordingly, the contribution of the Proposal to Australia's GHG emissions is not considered to be significant, in terms of both the construction and operational phases of the Proposal.

Furthermore, the Proposal would have a net reduction in transportation emissions generated by transportation of freight through the use of rail to transport freight, which is more efficient than by road. The net reduction in GHG emissions from the change in freight distribution would be a saving of 1,472 tCO₂-e/year.

Mitigation strategies have been identified to reduce the emissions associated with the construction and operational phases of the Proposal. The implementation of these mitigation measures would further reduce GHG for the Proposal.

Cumulative impacts

An assessment of the cumulative impacts arising from the Proposal in conjunction with the Early Works phase of the Proposal, the adjacent MPE Stage 1 Proposal, as well as other planned or proposed developments on the local area was undertaken (refer to Section 19 of this EIS).

The assessment considered cumulative impacts regarding traffic and transport, noise and vibration, air quality, human health, biodiversity, hazard and risk and visual amenity. Across the issues assessed for cumulative impacts, most did not identify significant additional impacts or exceedances of criteria and no additional mitigation measures were identified as being required.

The assessment concluded that, with reasonable and feasible mitigation measures applied, the cumulative impacts of the Proposal is likely to meet all statutory guideline requirements.

Other issues

The EIS includes an assessment of the Proposal having regard to the other environmental issues identified in the SEARs and those that, although not identified in the SEARs, were considered relevant to the construction and operation of the Proposal.

Waste

Arcadis has undertaken an assessment of waste to be generated and disposed of during construction and operation for the Proposal (refer to Section 20.1 of this EIS).

The waste impacts of the construction and operation of the Proposal are deemed to be minor and any impacts would be readily managed and reduced through the implementation of mitigation measures provided for waste.

The construction phase of the Proposal would involve clearing, earthworks, drainage works and the construction of infrastructure, which would generate waste in the form of Virgin Excavated Natural Material and Excavated Natural Material (VENM and ENM) excess building and packaging materials, concrete, asphalt and vegetation. During operation, waste would be generated through offices, lunch rooms, workshops, de-stuffing and packing containers and maintenance activities.

Measures to mitigate the effect of the construction waste streams would be incorporated into the Proposal's CEMP and would include best practice waste avoidance and waste management where practicable.

Measures to mitigate the effect of waste arising during operation of the facility would be incorporated into the OEMP prior to commencement of operations. This policy would include measures to encourage recycling behaviour and increase the diversion of waste into recycling streams.

Bushfire

Australian Bushfire Protection Planners Pty Ltd (ABPP) have prepared a bushfire protection assessment for the Proposal (refer to Section 20.2 and Appendix W of this EIS). The Dry Sclerophyll Forest vegetation, to the east and south of the Proposal site, and the vegetation west of the Proposal site located within the riparian corridor, present potential bushfire threat to the Proposal.

All proposed construction compounds, site office locations and construction parking areas would be located outside vegetated and bushfire prone areas. Consequently, the bushfire threat to the fixed assets (construction compounds) during construction is considered to be low.

The operation of the Proposal is consistent with the objectives of *Planning for Bushfire Protection* 2006, in that it provides the following:

- Separation distances between fixed assets and bushfire prone vegetation exceed the required defendable space widths
- Safe operational access and egress for emergency services personnel and residents is available
- Ongoing management and maintenance measures for bushfire protection
- Utility services that meet the needs of firefighters.

The objectives of *Planning for Bushfire Protection* 2006 generally apply to buildings included within the Proposal, and consequently are not applicable to the Rail link connection.

The bushfire threat to the fixed assets (rail sidings) is considered to be low however there is a risk that ignition of adjoining bushfire may occur from sparks given off by rail cars. The width of the Rail link connection would therefore be maintained in a low fuel

state, as required, with protocols developed for the monitoring of train access/egress during high – catastrophic fire weather days.

A bushfire management strategy, or equivalent, would be prepared as part of the CEMP and the OEMP, which would also include a fire safety and evacuation plan.

Property and Infrastructure

AECOM prepared a Rail Access Report to provide details on the alignment of the Rail link connection and operational procedures for the IMT facility (refer to Appendix F of this EIS). AECOM has also prepared a Utilities Strategy Report to identify the service demand requirements for the Proposal, and also the impacts of the Proposal on existing utilities and infrastructure (refer to Appendix H of this EIS). An assessment of land use and property ownership has also been provided within this EIS based on the majority of the technical specialist studies prepared for the Proposal (refer to Section 20.3 of this EIS).

The Proposal site would require connection to potable water, sewer, electricity and communications, all of which are in close proximity to the site. This existing infrastructure is suitable to service the estimated demands of the Proposal either with augmentation or in its current condition.

Further assessment of services demand and infrastructure requirements and augmentation works, in consultation with relevant infrastructure and service providers, would be undertaken during the progression of the detailed design for the Proposal, prior to and during construction.

Overall, the Proposal has the potential to result in a number of impacts on the land uses located on affected properties (within the Proposal site) and within the surrounding area. The measures included in other sections of this EIS are considered suitable to mitigate these issues. The Proposal however generally supports existing conditions and facilitates the future land uses on these affected sites and within the surrounding area.

Ecologically Sustainable Development

An assessment of the Proposals' consistency with the principles of Ecologically Sustainable Development (ESD) has been undertaken. The Proposal has been developed in accordance with the four principles of ESD: the precautionary principle; inter-generational equity; conservation of biological diversity and ecological integrity; and improved valuation, pricing and incentive mechanisms, as described below. The assessment addresses the ESD principles and how they have been considered and incorporated into the design, construction and operation of the Proposal.

The Precautionary Principle - The Proposal design and all associated technical studies have been developed in accordance with a precautionary approach to minimise uncertainty and to avoid, minimise, or mitigate potential environmental and social impacts. The EIS identifies mitigation measures and environmental management procedures that would be implemented to minimise and monitor impacts which may occur as a result of uncertainties in the impact assessment. Where a level of uncertainty was identified in the data used for the assessments, a conservative worst-case scenario analysis was undertaken. The technical specialist studies provide a detailed analysis of both the construction and operational phases of the Proposal, to consider the environmental impacts, having regard to the precautionary principle.. Subject to the implementation of mitigation measures, these specialist studies did not identify any issues that may cause serious and irreversible environmental damage as a result of the Proposal (refer to Sections 7- 20 and 22 of this EIS).

Inter-generational equity - The Proposal has been designed to benefit both existing and future generations through the provision of a high standard IMT facility that complies with the principle of inter-generational equity. A reduction in freight traffic volumes would

have direct and flow-on economic, social and wider environmental benefits, including but not limited to improved inter-regional access, reduced freight and transport costs for industry and businesses and job creation during construction and operation. The Proposal forms an integral part of the overall IMT strategy for Sydney, as identified in NSW 2021, the State Infrastructure Strategy, the Plan for Growing Sydney and other State strategies, as a key element of the wider IMT network required to meet long term projected freight demand across the Sydney Greater Metropolitan Area. The Proposal forms an integral part of the overall IMT strategy of Sydney, servicing the increased Port Botany throughput and the future capacity of Sydney ports. This would, in turn, result in an increase in jobs into the future. The Proposal would also result in regional traffic improvements with a mode shift from truck to rail transportation.

While the Proposal would have some adverse environmental impacts during both construction and operation, they would not trigger investigation thresholds or inequitably disadvantage any sector of the community or future generations. Mitigation measures have been identified during both construction and operation which will prevent significant adverse environmental impacts associated with the Proposal.

Conservation of Biological Diversity and Ecological Integrity - A comprehensive assessment of the existing local environment at the Proposal site has been undertaken to recognise any potential impacts of the Proposal on local biodiversity. A detailed biodiversity assessment, and associated proposed mitigation measures have been outlined in Section 11 and Appendix Q of this EIS. A key element of this mitigation includes the preparation of on-going management plans and areas for biodiversity offset which would contribute to the conservation of the biological diversity and ecological integrity of the surrounding area. The Proposal has generally minimised the area of clearing and habitat loss to those areas of disturbed and fragmented patches of vegetation within the centre and east of the MPW site, further consolidating the existing and proposed future industrial development area.

Improved Valuation and Pricing of Environmental Resources - While it is often difficult to place a reliable monetary value on the residual, environmental and social effects of the Proposal, the value placed on environmental resources within and around the Proposal is evident in the extent of environmental investigations, planning and design of impact and mitigation measures proposed to inform assessments and to minimise, if not prevent, adverse environmental impacts during construction and operation of the Proposal. The approach taken for the Proposal has been to manage environmental impacts by identifying appropriate safeguards to mitigate adverse environmental effects and take up environmental enhancement opportunities. The cost of implementing these safeguards has been included in the total proposal cost, thereby appropriately reflecting the value of environmental resources.

With appropriate mitigation measures as identified throughout this EIS, undertaking the Proposal in the manner proposed is justifiable taking into consideration the principles of ESD.

Socio Economic

A socio-economic investigation has been undertaken for the Proposal. The demographics of the community in proximity to the Proposal site have shown that the population does not generally differ from that of the rest of NSW. The population has a high level of employment and generally has a higher level of social advantage than the NSW average.

Construction impacts and benefits that would affect the socio-economic environment would be temporary and include the employment of a construction workforce, changes to noise and visual amenity, air quality and changes to traffic transport and access arrangements. In general, it is anticipated that the majority of impacts would be minor and temporary, and would generally be within localities closest to the Proposal site.

There is potential for positive and negative socio-economic impacts associated with the operation of the Proposal. Positive impacts are likely to be felt more at a regional level while both positive and negative impact of the development would possibly be experienced at the local level. Assessments of traffic, air quality, visual amenity, noise and vibration, visual amenity and health impacts associated with operation of the Proposal found that any socio-economic impacts would be minor, particularly with proposed mitigation measures minimising any negative impacts.

It is anticipated that 570 construction personnel would be required during the Proposal's peak construction period and 1265 personnel per year during operation. These jobs, where practicable, would be filled locally.

Justification and conclusion

The Proposal, identified as a State Significant Development, has been subject to an EIS in accordance with the Environmental Planning and Assessment Act 1979 and the SEARs. The potential environmental, social and economic impacts, both direct and cumulative, have been identified and thoroughly assessed as part of this EIS. No significant environmental impacts have been identified by the Proposal in preparing the EIS. The environmental impacts identified would be mitigated through the implementation of measures for the construction and operation of the Proposal (refer to Section 22 of this EIS).

The Proposal has been assessed against, and has been found to be consistent with, the priorities and targets adopted in relevant draft and published State plans, as well as Government policies and strategies. The Proposal provides regional benefits through the removal of freight trucks from the M5 Motorway, easing congestion on this arterial road, and by reducing average delivery distances and supporting the more efficient use of road and rail transport. It would provide capacity for an annual throughput of up to 500,000 TEU to meet the short-term demand for Western and South Western Sydney and make a significant contribution to achieving Federal and State land use, freight and logistics policies.

The Proposal meets the SEARs and is considered consistent with the MPW Concept Approval and EPBC Approval. The Proposal also complies with Section 79C of the EP&A Act and is consistent with the principles of ecologically sustainable development.

Overall the EIS concludes that the development proposed is in the public interest and approval is recommended.

1 INTRODUCTION

The Moorebank Intermodal Company (MIC) has received Concept Plan Approval, under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), to develop the Moorebank Precinct West Project (MPW Project) on the western side of Moorebank Avenue, Moorebank, in south-western Sydney (the MPW site). The MPW Project involves the development of intermodal freight terminal facilities (IMT), linked to Port Botany, the interstate and intrastate freight rail network. The MPW Project includes associated commercial infrastructure (i.e. warehousing), a rail link connecting the MPW site to the Southern Sydney Freight Line (SSFL), and a road entry and exit point from Moorebank Avenue.

The MPW Concept Approval was granted on 3 June 2016 by the Planning Assessment Commission (PAC). Further details regarding the MPW Project, as approved, are provided in Section 1.4 of this eIS.

Commonwealth Approval (No. 2011/6086), under the *Environmental Protection Biodiversity Conservation Act 1999* (EPBC Act), has also been granted in mid 2016 (concurrently with the MPW Concept Approval) for the MPW Project. In addition to this, gazettal has been undertaken on 24 June 2016 for an amendment to the *Liverpool Local Environmental Plan 2008* (LLEP 2008), which rezones the MPW site.

This Environmental Impact Statement (EIS) is seeking approval for Stage 2 of the MPW Project, which comprises the construction and operation of an IMT facility with a container freight throughput volume of 500,000 twenty-foot equivalent units (TEUs) per annum, approximately 215,000 m² gross floor area (GFA) of warehousing, a Rail link connection and Moorebank Avenue/Anzac Road intersection works (the Proposal).

This EIS has been prepared to address:

- The Secretary's Environmental Assessment Requirements (SEARs) (SSD 16-7709) for the Proposal which were issued on 14 July 2016 (Appendix A)
- The relevant requirements of the Concept Plan Approval (SSD 5066) granted by the PAC in mid 2016 (refer to Appendix A of this EIS)
- The relevant requirements of the approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (No. 2011/6086) (as relevant) (refer to Section 5 of this EIS).

This EIS has also been prepared to consider and ensure the land use is consistent with the amendment to the LLEP 2008.

This EIS has been prepared to provide a complete assessment of the potential environmental impacts associated with the construction and operation of the Proposal. This EIS proposes measures to mitigate these issues and reduce any unreasonable impacts on the environment and surrounding community.

1.1 Applicant for the Proposal and Capital Investment Value

On 5 December 2014, Moorebank Intermodal Terminal Company (MIC) and SIMTA announced their in-principle agreement to develop the Moorebank IMT Precinct on a whole of precinct basis. This agreement is subject to satisfying several conditions which both parties are currently working towards. SIMTA is therefore seeking approval to build and operate the IMT facility and warehousing under the MPW Project Concept Approval, known as the MPW Stage 2 Proposal (the Proposal).

MIC, a Federal Government Business Enterprise, would oversee the development of the precinct, providing both funding (for some elements) and land for the MPW Project.

The Capital Investment Value for the Proposal, consistent with the definition provided in the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), is

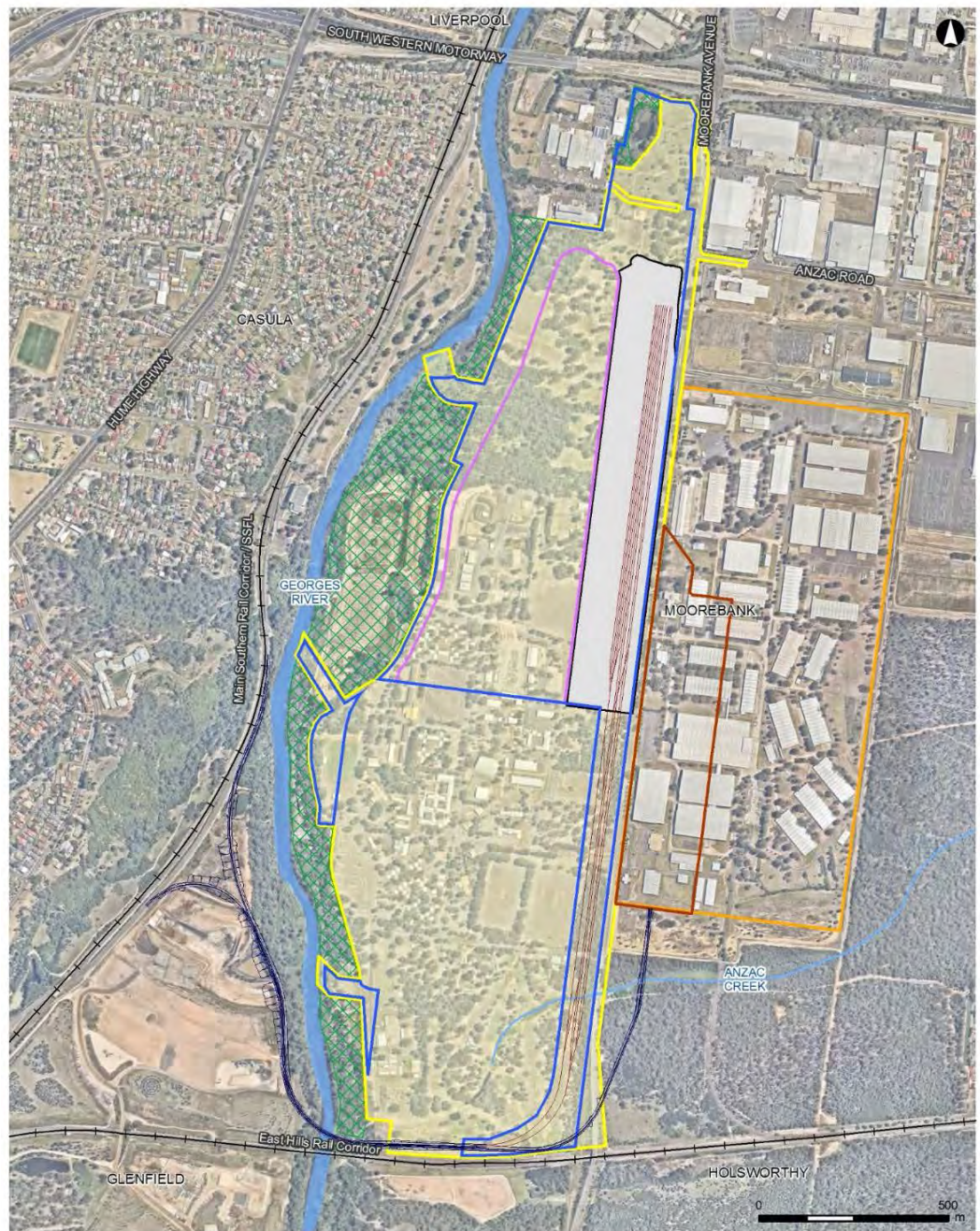
approximately \$533,000,000 AUD (excluding GST) (refer to the Quantity Surveyors Report prepared by Rider Levett Bucknall at Appendix B of this EIS).

1.2 Proposal overview

The Proposal involves the construction and operation of a multi-purpose IMT facility (that enables interstate and intrastate freight distribution and port shuttle (IMEX) movements), warehousing and a Rail link connection, comprising the following key components:

- Intermodal Terminal Facility, including:
 - Infrastructure to support a container freight throughput volume of 500,000 TEUs per annum
 - Installation of nine rail sidings and associated locomotive shifter
 - Capacity to receive trains up to 1800 m in length
 - Truck processing, holding and loading areas
 - Container storage area serviced by manual handling equipment
 - Administration facility, engineer's workshop and associated car parking.
- Rail link including:
 - Construction of the Rail link connection, which links the sidings within the IMT facility to the Rail link (which would be constructed as part of the MPE Stage 1 Proposal), refer to Section 1.4.4 of this EIS)
 - The operation of the Rail link connection and the Rail link (from the Rail link connection to the SSFL)
- Warehousing area – construction of approximately 215,000 m² GFA of warehousing, plus ancillary offices, with associated warehouse access roads
- Upgraded intersection on Moorebank Avenue, which would provide site access and egress and construction of an internal road
- Ancillary works – including vegetation clearing, earth works (including the importation of 1,600,000 m³ fill), utilities installation/connection, signage and landscaping.

The IMT facility would operate 24 hrs a day, seven days a week. The warehousing would operate 18 hours a day, five to seven days a week. Hours of operation for the warehousing would generally be 7 am to 1 am. The footprint and operational layout of the Proposal is shown on Figure 1-1.



LEGEND

MPW PROPOSAL

- Operational area
- Construction area
- Warehousing footprint
- MPW Stage 2 site
- MPW Rail link connection

OTHER PRECINCT FEATURES

- MPE Stage 1 site
- MPE site
- IMT facility area
- Conservation area
- MPE Rail link connection
- Watercourse
- Existing railway

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Scale: 1:15,000 @ A4



Figure 1-1: Proposal overview

1.2.1 Proposal components and key terms

Table 1-1 provides a summary of the key terms, in addition to the glossary provided above, which are included within this EIS. Figure 1-1 also provides an indication of the site areas discussed in Table 1-1.

Table 1-1: EIS Key terms

Term	Definition
<p>Moorebank Precinct West (MPW) Concept Plan Approval</p> <p>(Concept approval and Early Works)</p>	<p>MPW Concept and Stage 1 Approval (SSD 5066) granted on 3 June 2016 for the development of the MPW Intermodal terminal facility at Moorebank and the undertaking of the Early Works. Granted under Part 4, Division 4.1 of the <i>Environmental Planning and Assessment Act 1979</i>. This reference also includes associated Conditions of Approval and Revised Environmental Management Measures, which form part of the documentation for the approval.</p> <p>N.B. Previously the MIC Concept Plan Approval</p>
<p>Moorebank Precinct West (MPW) EPBC Approval</p>	<p>Commonwealth Approval (No. 2011/6086), granted in mid 2016 under the <i>Environmental Biodiversity Protection Conservation Act 1999</i>, for the impact of the MPW Project on listed threatened species and communities and impacts on the environment by a Commonwealth agency.</p>
<p>Moorebank Precinct West (MPW) Concept Plan EIS</p>	<p>The Environmental Impact Statement prepared to support the application for approval of the MPW Concept and Early Works (Stage 1) under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> and the <i>Environmental Planning and Assessment Act 1979</i>.</p> <p>N.B. Previously the MIC Concept Plan EIS</p>
<p>Moorebank Precinct West (MPW) Planning Proposal</p>	<p>Planning Proposal (PP_2012_LPOOL_004_00) to rezone the MPW site from 'SP2- Defence to 'IN1- Light Industrial' and 'E3- Management', as part of an amendment to the Liverpool Local Environmental Plan 2008 (as amended) gazetted on 24 June 2016.</p>
<p>Moorebank Precinct West (MPW) Project</p>	<p>The MPW Intermodal Terminal Facility as approved under the MPW Concept Approval and the MPW EPBC Approval (2011/6086).</p> <p>N.B. Previously the MIC Project</p>
<p>Moorebank Precinct West (MPW) site</p>	<p>The site which is the subject of the MPW Concept Approval, MPW EPBC Proposal and MPW Planning Proposal (comprising Lot 1 DP1197707 and Lots 100, 101 DP1049508 and Lot 2 DP 1197707). The MPW site does not include the rail link as referenced in the MPW Concept Approval or MPE Concept Plan Approval.</p> <p>N.B. Previously the MIC site</p>
<p>MPW RtS</p>	<p><i>MIC Response to Submissions Report</i> (PB, May 2015)</p>
<p>MPW SRtS</p>	<p><i>MIC Supplementary Response to Submissions Report</i> (PB, August 2015)</p>

Term	Definition
Early Works	Works approved under Stage 1 of the MPW Concept Approval (SSD 5066), within the MPW site, including: establishment of construction compounds, building demolition, remediation, heritage impact mitigation works and establishment of the conservation area.
Early Works Approval	Approval for the Early Works (Stage 1) component of the MPW Project under the MPW Concept Approval (SSD 5066) and the MPW EPBC Approval. Largely contained in Schedule 3 of the MPW Concept Approval.
Early Works area	Includes the area of the MPW site subject to the Early works approved under the MPW Concept Approval (SSD 5066).
Moorebank Precinct West (MPW) Stage 2 Proposal/the Proposal	MPW Stage 2 Proposal (the subject of this EIS), namely Stage 2 of the MPW Concept Approval (SSD 5066) (the subject of this EIS) including construction and operation of an IMT facility, warehouses, a Rail link connection and Moorebank Avenue/Anzac Road intersection works.
Moorebank Precinct West (MPW) Stage 2 site/Proposal site	The subject of this PEA, the part of the MPW site which includes all areas to be disturbed by the MPW Stage 2 Proposal (including the operational area and construction area).
Moorebank Precinct West (MPW) Intermodal Terminal Facility/IMT facility	The Intermodal terminal facility on the Proposal site, including truck processing, holding and loading areas, rail loading and container storage areas, nine rail sidings, loco shifter and an administration facility and workshop.
internal road	Main internal road through the Proposal site which generally travels along the western perimeter of the site. Provides access between Moorebank Avenue and the IMT and warehouses.
Rail link connection	Rail connection located within the Proposal site which connects to the Rail link included in the MPE Stage 1 Proposal (SSD 14-6766).
Proposal operational rail line	The section of the Rail link connection and Rail link between the SSFL and the Rail link connection (included in the MPE Stage 1 Proposal) to be utilised for the operation of the Proposal. and the Rail link connection
construction area	Extent of construction works, namely areas to be disturbed during the construction of the Proposal.
operational area	Extent of operational activities for the operation of the Proposal.
Moorebank conservation area/conservation area	Vegetated area to remain to the west of the Georges River, to be subject to biodiversity offset, as part of the MPW Project.
Moorebank Precinct	Refers to the whole Moorebank intermodal precinct, i.e. the MPE site and the MPW site.
Moorebank Precinct East (MPE) Project	The Intermodal terminal facility on the MPE site as approved by the MPE Concept Plan Approval (MP 10_0913) and including the MPE Stage 1 Proposal (14-6766).

Term	Definition
	N.B. Previously the SIMTA Concept Plan Approval
Moorebank Precinct East (MPE) site	<p>The site which is the subject of the MPE Concept Plan Approval, and includes the site which is the subject of the MPE Stage 1 Proposal.</p> <p>N.B. Previously the SIMTA site</p>
Moorebank Precinct East (MPE) Stage 1 Proposal	<p>MPE Stage 1 Proposal (14-6766) for the development of the Intermodal terminal facility at Moorebank. This reference also includes associated conditions of approval and environmental management measures which form part of the documentation for the approval.</p> <p>N.B. Previously known as the SIMTA Stage 1 Proposal</p>
Rail link	Part of the MPE Stage 1 Proposal (14-6766), connecting the MPE site to the SSFL. The Rail link (as discussed above) is to be utilised for the operation of the Proposal.
Revised Environmental Management Measures (REMMs)	The environmental management measures for the MPW Concept Approval as presented within the MIC Supplementary Response to Submissions (SRtS) (PB, 2015) and approved under the MPW Concept Approval.

1.3 Proposal objectives

The objectives of the MPW Project are identified in the MPW Concept Approval. The objectives of the Proposal, which are generally consistent with those of the MPW Project, include:

- Australian Government objectives (2010):
 - Boost national productivity over the long term through improved freight network capacity and rail utilisation
 - Create a flexible and commercially viable facility and enable open access for rail operators and other terminal users
 - Minimise impact on Defence's operational capability during the relocation of Defence facilities from the Moorebank site
 - Attract employment and investment to west and south-western Sydney
 - Achieve sound environmental and social outcomes that are considerate of community views
 - Optimise value for money for the Commonwealth having regard to the others stated Project objectives
- MIC constitutional objectives (2012):
 - To facilitate the development of an intermodal freight terminal at Moorebank, including an IMEX facility, an interstate freight terminal capable of catering for 1,800 metre trains and ancillary facilities by optimising private sector investment and innovation in the development, construction and operation of the intermodal terminal
 - To facilitate the operation of a flexible and commercially viable common user facility which shall be available on reasonably comparable terms to all rail operators and other terminal users
 - To ensure the intermodal terminal operates with the aim of improving national productivity through an efficient supply chain, increased freight capacity and better rail utilisation
 - To operate on commercially sound principles having regard to the Australian Government's long-term intention to sell its interest in the Company (MIC).

SIMTA supports the MIC objectives with a view to implementing them as part of this stage, and future stages of development. Together, MIC and SIMTA is tasked with delivering an IMT which realises the economic benefits of rail distribution, including reduction of truck vehicle kilometres and net travel time savings while acting in an environmentally and socially responsible manner with due regard to local communities' views. Ultimately, this would result in an IMT which is to be designed, developed and operated in such a way that would minimise negative impacts on nearby residents and businesses.

1.4 Previous approvals

1.4.1 MPW Concept Approval

Approval for the MPW Concept (SSD 5066), under Part 4, Division 4.1 of the EP&A Act to develop the MPW Project, was received on 3 June 2016.

The MPW Project involves the development of intermodal freight terminal facilities (IMT), linked to Port Botany and the interstate freight rail network. It also includes associated commercial infrastructure (i.e. warehousing), a rail link connecting the MPW site to the Southern Sydney Freight Line (SSFL), and a road entry and exit point from Moorebank Avenue.

A summary of the MPW Project, as approved in the MPW Concept Approval, is as follows:

- IMEX freight terminal - maximum capacity of 550,000 TEU per annum, servicing international IMEX freight movement between Port Botany and the MPW site
- Interstate freight terminal - maximum capacity of 500,000 TEU per annum, servicing trains travelling to, from and between Sydney, regional and interstate destinations.
- Warehousing facilities - maximum of 300,000 m² GFA to service the IMEX and interstate terminals
- Rail link connection - between the MPW site and the SSFL
- Conservation area - to maintain and enhance riparian vegetation on the western boundary of the site, along the Georges River
- Moorebank Avenue upgrade - widening of the road to four lanes between Anzac Road and the M5 Motorway.

It should be noted that the MPW Concept Approval states that the combined movement of container freight on the MPW site must not exceed 1.05 million TEU per annum (i.e. up to 500,000 TEU interstate freight and up to 550,000 TEU IMEX freight per annum). However, the MPW Concept EIS provided an environmental assessment of a combined movement of container freight on the MPW site at a maximum of 1.55 million TEU per annum (including up to 1.05 million TEU IMEX freight and 500,000 TEU interstate freight per annum). As a result, the summaries within this EIS of the MPW Concept EIS (refer to Sections 7 to 20 of this EIS) are for a throughput above that which was approved in the MPW Concept Approval.

Figure 1-2, shows the layout of the MPW site as approved within the MPW Concept Approval.

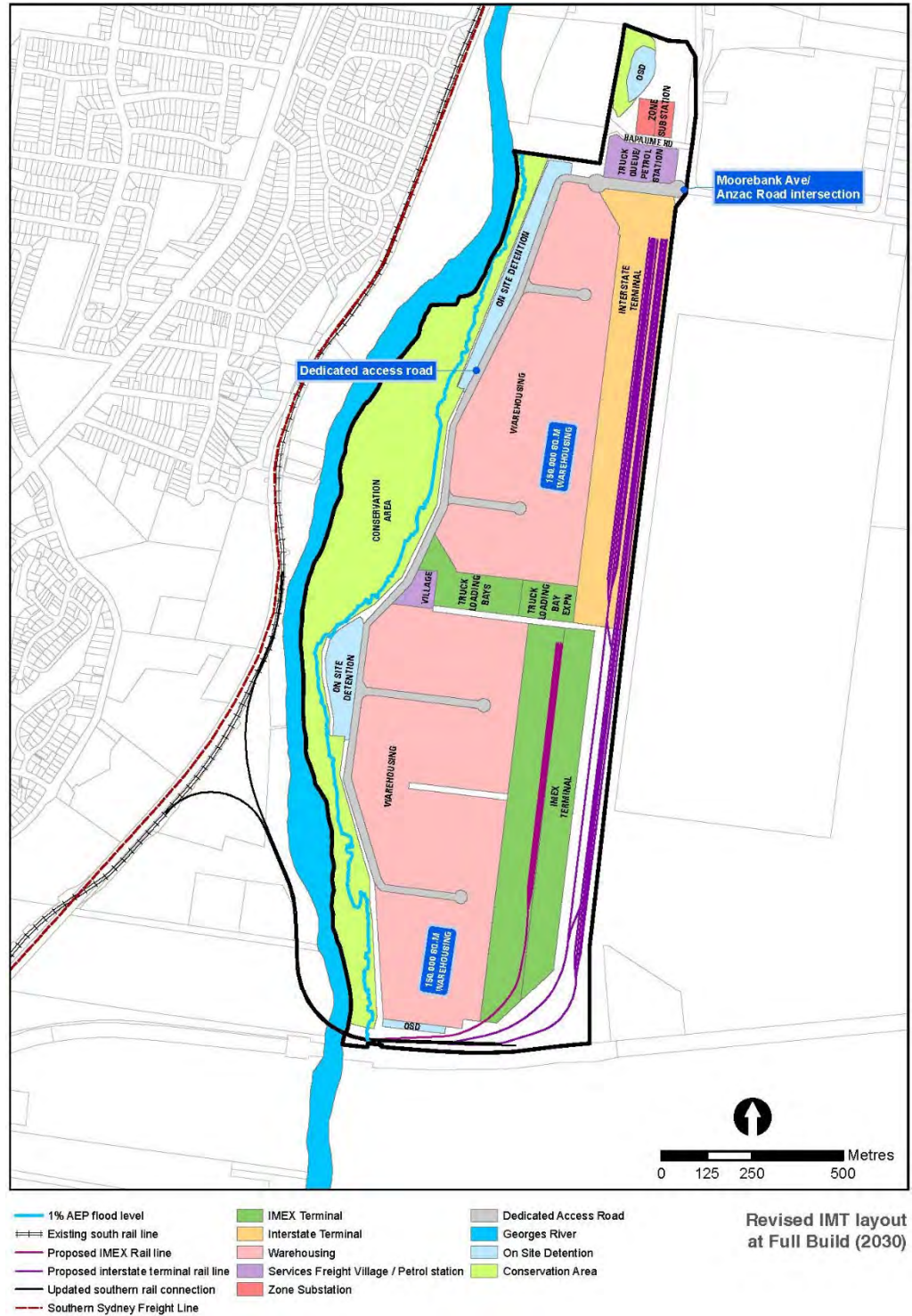


Figure 1-2: MPW Concept Approval

Source: Parsons Brinckerhoff, 2015, Moorebank Precinct West (MPW) Terminal, Response to Submissions Report

Approval for the Early Works phase was granted as Stage 1 of the MPW Project within the MPW Concept Approval, and works for this phase are anticipated to commence in the third quarter of 2016. The Early Works are shown in Figure 1-3 and Figure 1-4 and include the following:

- The demolition of existing buildings and structures
- Service utility terminations and diversion/relocation
- Removal of existing hardstand/roads/pavements and infrastructure associated with existing buildings
- Rehabilitation of the excavation/earthmoving training area (i.e. 'dust bowl')
- Remediation of contaminated land and hotspots, including areas known to contain asbestos, and the removal of:
 - Underground storage tanks (USTs)
 - Unexploded ordnance (UXO) and explosive ordnance waste (EOW) if found
 - Asbestos contaminated buildings
- Archaeological salvage of Indigenous and European sites
- Establishment of a conservation area along the Georges River
- Establishment of construction facilities (which may include a construction laydown area, site offices, hygiene units, kitchen facilities, wheel wash and staff parking) and access, including site security
- Vegetation removal, including the relocation of hollow-bearing trees, as required for remediation/demolition purposes.

The other phases of the MPW Project are subject to additional approvals undertaken in accordance with Part 4, Division 4.1 of the EP&A Act.

The Conditions of Approval for the MPW Concept Approval (Schedule 4) provide a detailed list of further investigations and information that should be undertaken to inform future approvals for the site, and ultimately construction and operation of the MPW Project, including the Proposal. The Conditions of Approval also refer to the Revised Environmental Mitigation Measures (REMMs) which have been prepared as part of the MIC Supplementary Response to Submissions (SRtS), and are to be satisfied as part of future stages of approval for the MPW Project. The Conditions of Approval and the REMMs for the MPW Concept Approval are included in Appendix A of this EIS.

This EIS is seeking approval for the construction and operation of the Proposal as part of the Concept Plan Approval for the MPW Project.

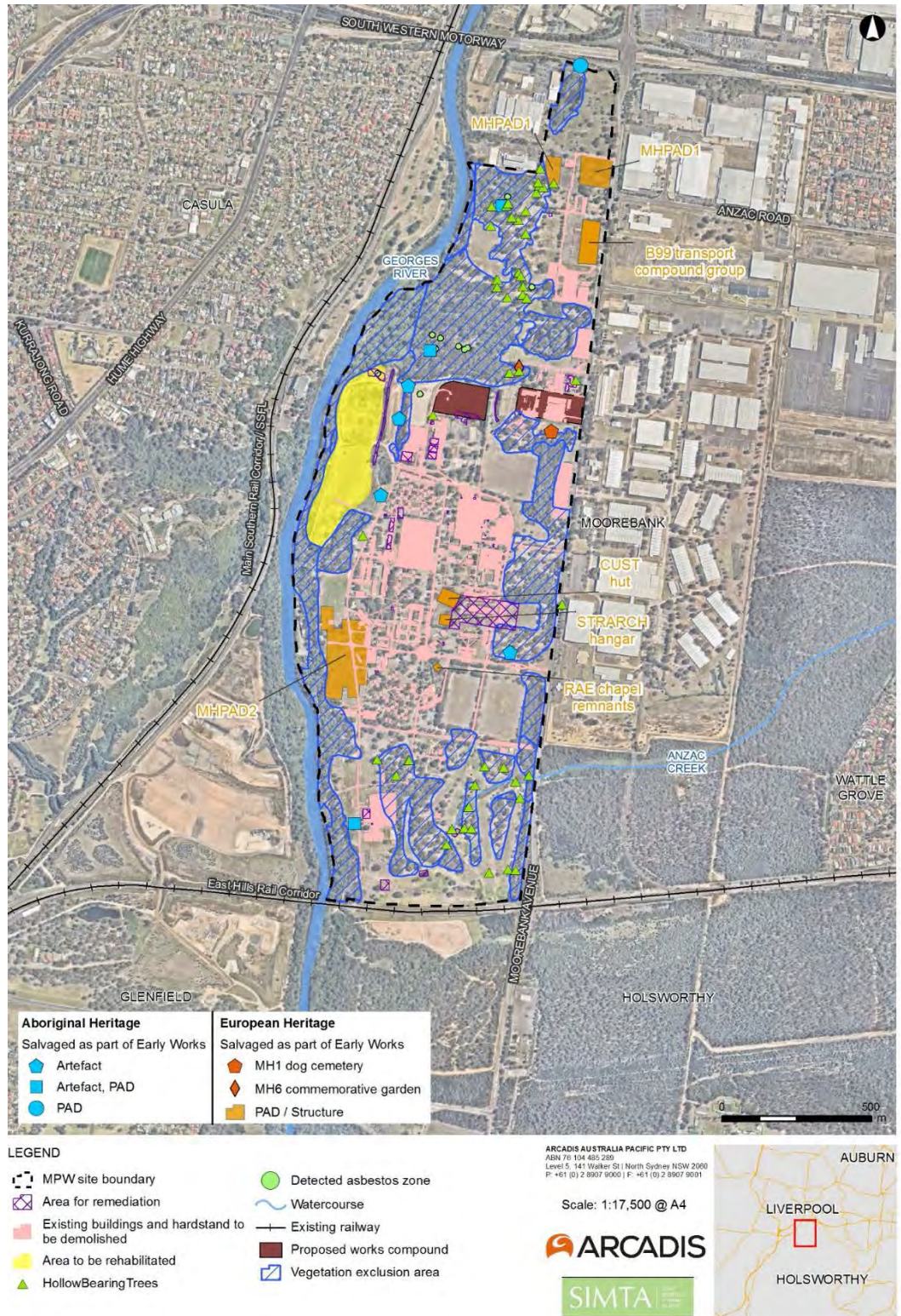


Figure 1-3: MPW Project Early Works

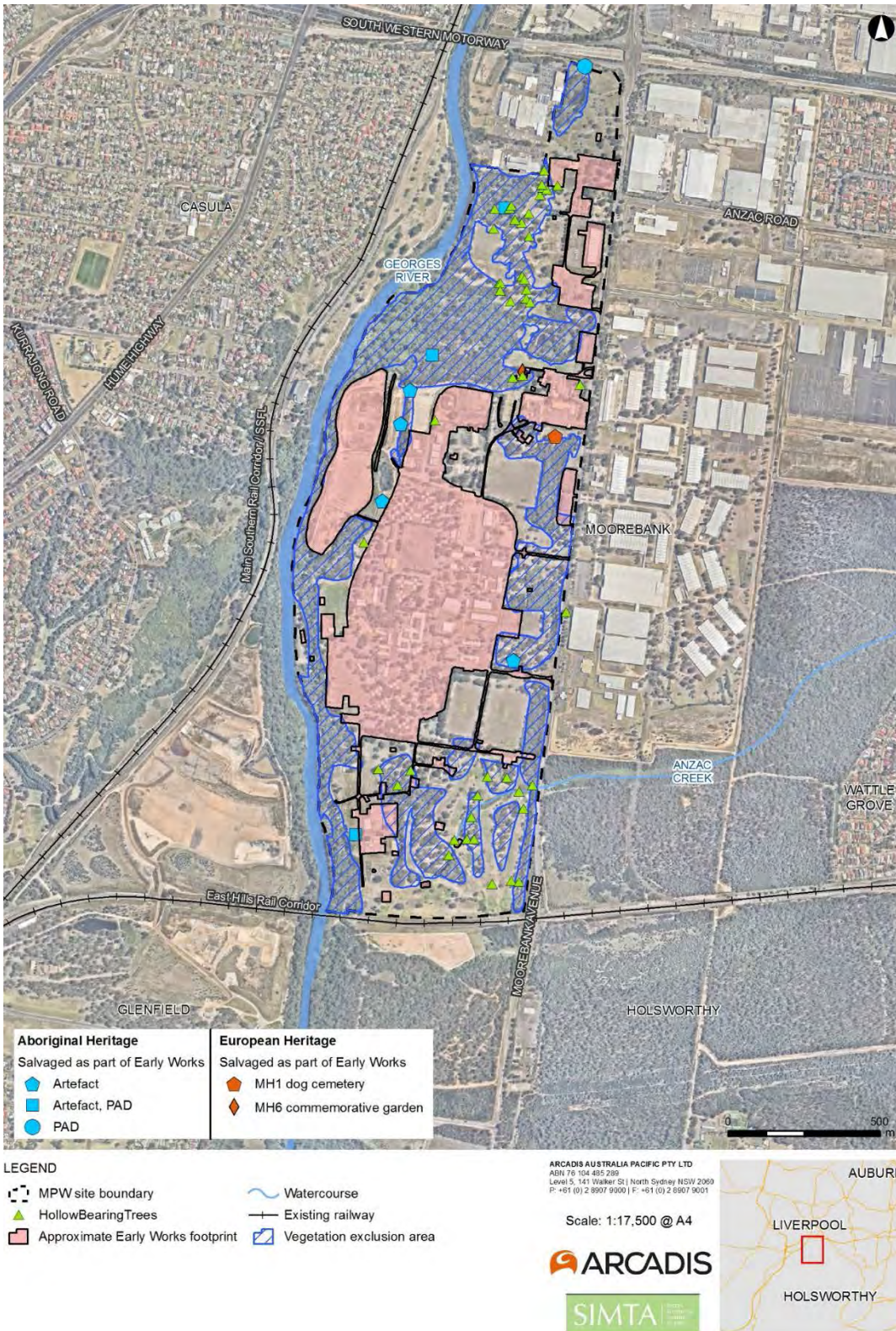


Figure 1-4: Approximate Early Works footprint

MPW Concept Modification

The Environmental Impact Assessment (EIS) prepared for the MPW Concept Approval (SSD_5066) identified that fill material required for the development of the MPW site would be largely sourced from excavations within the MPW site and hence imported fill volumes for the MPW Project would be small. Subsequent civil design development for the MPW Project has identified that fill required to be imported to the MPW site is estimated at 1,600,000 cubic metres (m³). SIMTA has proposed to undertake additional site preparatory works, including the import, placement and stockpiling of clean fill, as a modification to the MPW Concept Approval (not Early Works) under section (s) 96(2) of the EP&A Act.

In addition to the importation of fill, the following activities are also proposed to be undertaken under the MPW Concept Modification:

- Staging of future applications – alteration to the works to be included in MPW Stage 2 and future stages
- Maximum building heights – related to the importation of fill and the resulting increase in building heights, which do not comply with the Liverpool Local Environmental Plan 2008
- Land use changes – alteration to the location of key built form elements included in the MPW Project and additional parcels of surrounding land impacted by the MPW Project
- Subdivision – facilitate for the subdivision of the MPW site.

The works included within the MPW Concept Modification, as identified above, would be physically undertaken as part of this Proposal (i.e. are also the subject of this EIS).

1.4.2 MPW EPBC Approval

Approval for the MPW EPBC Approval (No. 2011/6086), under the EPBC Act, to develop the MPW Project was received in mid-2016.

The EPBC Approval was required, subsequent to a referral, as the MPW Project was determined to be a 'controlled action' under the EPBC Act for the reasons identified in Table 1-2.

Table 1-2: EPBC Approval details

Matter of National Environmental Significance triggered	Details
An action by the Commonwealth which will have a significant impact on the environment	MIC is a Commonwealth Government Business Enterprise and as stated in the MPW Concept EIS, without mitigation measures, MPW Project would potentially have a significant impact on surrounding environment, particularly with regards to traffic, transport and access, noise and vibration, local air quality and human health.
Significant impact on listed threatened species and communities	The MPW Project would affect two Threatened species of plant, <i>Grevillea parviflora</i> subsp. <i>Parviflora</i> and <i>Persoonia nutans</i> , which are listed under the EPBC Act and the TSC Act. Impacts on these species would include direct loss of individuals and loss of habitat. Impacts were also predicted to 25 Threatened fauna species known or likely to occur on the MPW site.

Matter of National Environmental Significance triggered	Details
	<p>Overall it was determined that no EPBC Act or TSC Act Threatened species population or ecological community is likely to be significantly affected by the Project.</p> <p>For additional details refer to Section 11 (Biodiversity).</p>

The Conditions of Approval for the EPBC Approval provide a detailed list of further investigations and information that should be undertaken to inform future approvals for the MPW site, and ultimately construction and operation of the MPW Project, including the Proposal. The Conditions of Approval also refer to the Revised Environmental Mitigation Measures (REMMs) which have been prepared as part of the MIC Supplementary Response to Submissions (SRtS), and are to be satisfied as part of future stages of approval for the MPW Project. The Conditions of Approval and the REMMs for the MPW Concept Approval are included in Appendix A with an overview of the EPBC Approval Conditions of Approval provided within Section 5 of this EIS.

1.4.3 MPW Planning Proposal

The MPW site is located wholly within the Liverpool Local Government Area (LGA) and is subject to the provisions of the LLEP 2008.

Previously under, the LLEP 2008 land within the MPW site is primarily located within the SP2 Infrastructure (Defence) zone, with the exception of the Northern Commonwealth Land and Northern Council Land (the area north of Bapaume Road), which is zoned IN1 General Industrial.

In order to facilitate future development of the MPW site in accordance with MPW Concept Approval, MIC sought (through Planning Proposal (PP_2012_LPOOL_004_00) to rezone the MPW site under Part 3 of the EP&A Act to partly IN1 General Industrial (for the Interstate IMT) and partly E3 Environmental Management (for the conservation area along the Georges River), refer to Figure 1-6. For this purpose, the MIC lodged a planning proposal with NSW Department of Planning and Environment (DP&E) to amend the Liverpool LEP.

The process of undertaking an amendment to an LEP is set out in Division 4 of Part 3 of the EP&A Act and involves the following steps:

- Preparation of a Planning Proposal
- A 'gateway' decision by the Minister to determine whether or not to proceed with the planning proposal
- Lodgement of the Planning Proposal
- Exhibition of the Planning Proposal
- Assessment of the Planning Proposal and variation, if required
- Giving effect to the Planning Proposal through amendments to the LEP.

The planning proposal was exhibited concurrently with the MPW Concept EIS, in order for the proposed rezoning of the MPW site to be properly considered in conjunction with the MPW Project.

Approval was received on 24 June 2016 for the Planning Proposal (PP_2012_LPOOL_004_00) to rezone the MPW site, allowing for the MPW Project and associated amendments to the Liverpool Local Environmental Plan 2008 (LEP 2008).

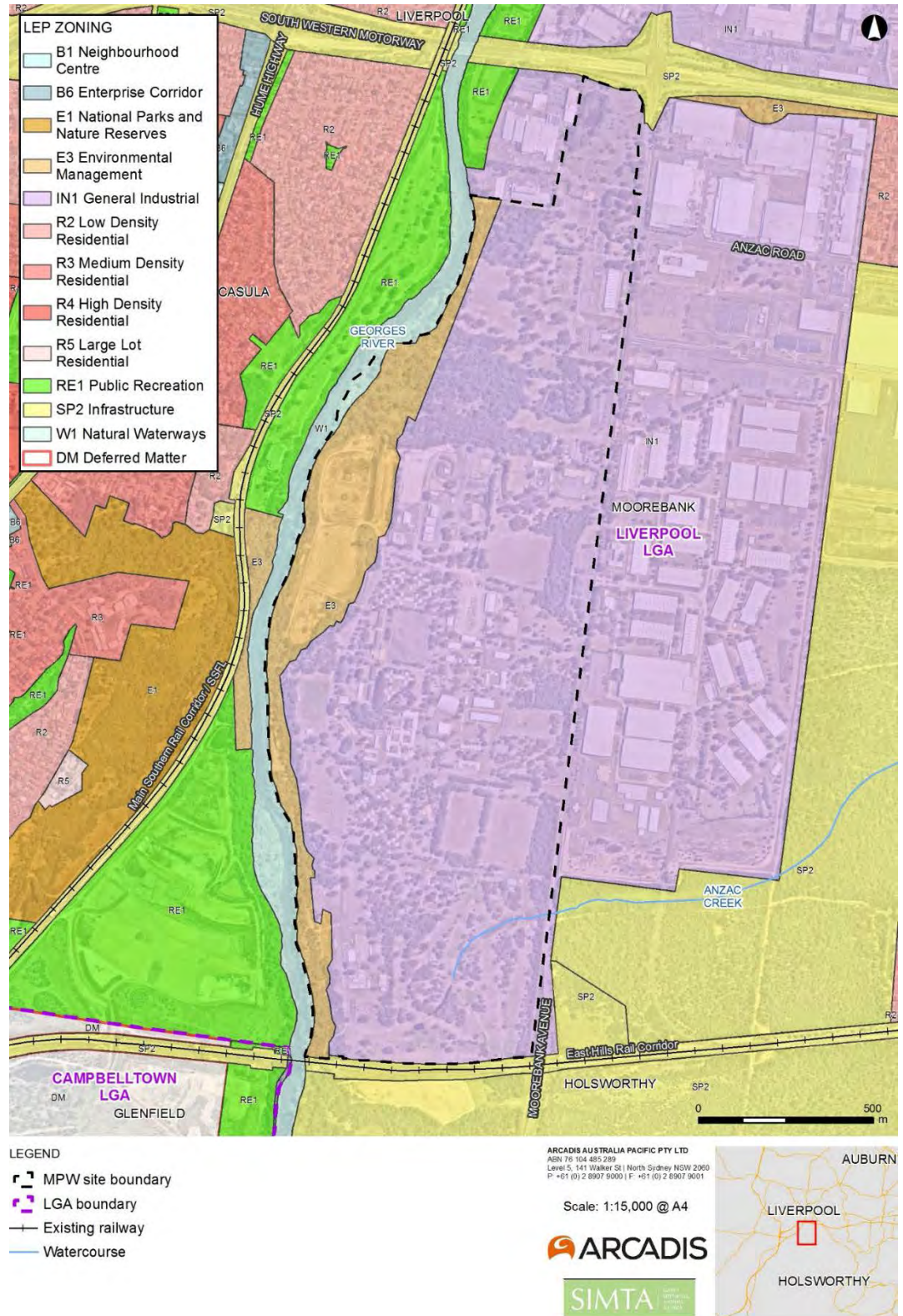


Figure 1-5: MPW Planning proposal

1.4.4 Moorebank Precinct

As discussed above, SIMTA and MIC have recently entered into an agreement to develop the MPW site for the purposes of an IMT facility. The MIC IMT facility forms part of the greater Moorebank Precinct, which also includes the SIMTA IMT (approved under the MPE Concept Plan Approval and the MPE Stage 1 Proposal¹). The Approvals which relate to the SIMTA IMT include:

- EPBC Approval (No. 2011/6229) granted in March 2014 for the impact of the MPE Project on listed threatened species and communities (sections 18 and 18A of the EPBC Act) and Commonwealth land (sections 26 and 27A of the EPBC Act)
- Concept Plan Approval (No. 10_0193) granted by the PAC on the 29 September 2014 for the 'Concept Plan Approval' of the MPE Project under Part 3A of the EP&A Act
- Stage 1 Approval (14-6766) anticipated to be granted by the PAC in late 2016 for the construction and operation of an IMT and associated Rail link under Part 4, Division 4.1 of the EP&A Act.

Of particular importance is that the MPE Project includes the construction of the Rail link, which would be utilised for the purposes of the Proposal. Notwithstanding this, as approvals have previously been provided separately it is SIMTA and MICs intention for these approvals to remain separate, and therefore for the sites to be constructed and operated via progressive individual approvals which are consistent with the Concept Plan's granted for each of the sites.

1.5 Planning approval pathway overview

On the 3 June 2016 Concept Plan Approval was granted, under Part 4, Section 4.1 of the EP&A Act for the MPW Project (SSD 5066) which includes the following:

- **Concept Proposal:** *the Concept involves the use of the site as an intermodal facility, including a rail link to the Southern Sydney Freight Line, warehouse and distribution facilities, and associated works.*
- **Early Works (Stage 1):** *involves: the demolition of buildings, including services termination and diversion; rehabilitation of the excavation/ earthmoving training area; remediation of contaminated land; removal of underground storage tanks; heritage impact remediation works; and the establishment of construction facilities and access, including site security."*

It was generally envisaged, with the MPW Concept EIS and associated documentation, that any further development under the Concept Plan Approval would be undertaken under Part 4, Division 4.1 of the EP&A Act. Although, this has not been stipulated within the MPW Concept Approval and therefore there is the potential for future stages of approval under the MPW Concept to be undertaken under other approval pathways, as defined by the EP&A Act and the relevant Environmental Planning Instruments.

Of particular importance to the Proposal is Schedule 1, clause 19 of the *State Environmental Planning Policy (State and Regional and Development) 2011* (State and Regional Development SEPP), which states that 'rail and transport related facilities' that have a capital investment value of more than \$30 million for; (a) heavy railway lines associated with mining, extractive industries or other industry, (b) railway freight terminals, sidings and inter-modal facilities are considered State Significant Development (SSD) and would require assessment under Part 4, Division 4.1 of the EP&A Act.

¹ Refer to Section 2 of this EIS for further information.

Further, Schedule 1, clause 12 states that warehouses or distribution centres with a capital investment value of more than \$50 million are considered SSD under the State and Regional Development SEPP. Notwithstanding this, this clause notes that warehouses or distribution centres which are related to 'rail and transport related facilities' are not included within the clause, and therefore this capital investment value does not apply. In summary, warehousing related to rail and transport related facilities, such as an intermodal terminal, are considered SSD based on a capital investment value of \$30 million.

The Proposal includes the construction and operation of an intermodal terminal and associated warehousing which is included within the definition of 'rail and transport related facilities' and has a capital investment value above \$30 million. Therefore, in accordance with the State and Regional Development SEPP, the Proposal is to be assessed as SSD and approval is sought under Part 4, Division 4.1 of the EP&A Act.

1.6 Structure of the EIS

The structure of the EIS is as follows:

- **EIS Summary:** Provides a brief overview of the Proposal, key environmental assessment results and an outline of the proposed environmental and social mitigation measures
- **Section 1 – Introduction:** Provides an introduction to the Proposal and the EIS, including project objectives, site history, previous approvals and relevant documentation
- **Section 2 – Site Description:** Provides a summary of the existing Proposal site, its location in a regional and local context and the legal description and ownership of the Proposal site
- **Section 3 – Proposal Justification, Need and Alternatives:** Provides a discussion on the need for the Proposal having regard to strategic justification, relevant legislation, plans and policy and also provides alternatives to the design and location of the Proposal
- **Section 4 – Proposal Description:** Includes a description of the Proposal including built form, construction methodology and operational procedures
- **Section 5 – Statutory Planning and Approvals:** Provides a summary and assessment of the Proposal having regard to relevant statutory legislation and plans at a Commonwealth, State and Local Government level
- **Section 6 – Consultation:** Provides a summary of the consultation (public, stakeholder and government agencies) which has been undertaken to date for the Proposal
- **Sections 7 to 19 – Key Environmental Issues:** Provides a discussion on the existing environment conditions and an assessment of the key environmental issues (identified in the SEARs) for the Proposal namely Traffic and Transport, Noise and Vibration, Air Quality, Human Health, Biodiversity, Stormwater and Flooding, Geology, Soil and Contamination, Hazard and Risk, Visual Amenity, Urban Design and Landscape, Indigenous Heritage, Non-Indigenous Heritage, Greenhouse Gas and Cumulative impacts
- **Section 20 – Other Issues:** Provides a discussion of the existing environment conditions and an assessment of the other environmental issues (identified in the SEARs) for the Proposal namely Waste, Bushfire, Property and Infrastructure, Ecologically Sustainable Development, Socio-Economic.
- **Section 21 – Environmental Risk Analysis:** Provides an analysis of the likely environmental risks and assigns a rating before and after the implementation of mitigation measures

- **Section 22 – Summary of Mitigation Measures:** Includes a summary of the mitigation measures identified in Sections 7 to 20 to minimise any adverse impact of the Proposal on the surrounding environment
- **Section 23 – Justification and Conclusion:** Provides a justification and conclusion of the Proposal.

The following Appendices are included in the EIS

Appendix	
A	Secretary’s Environmental Assessment Requirements (SSD 16-7709), Revised Environmental Management Measures, Concept Plan Approval (SSD 5066) Compliance Table
B	Quantity Surveyors Report
C	Survey Plan
D	Architectural Drawings and Subdivision Plan
E	Landscape Design Statement and Plans
F	Rail Access Report Rail Engineering Drawings
G	Moorebank Road Intersection Design Drawings
H	Utilities Strategy Report Building Services Strategy Brief
I	Preliminary Construction Environmental Management Plan
J	Preliminary Construction Works Drawing
K	BCA Assessment Report
L	Community and Stakeholder Consultation Outcomes Report
M	Operational Traffic and Transport Impact Assessment Preliminary Operational Traffic Management Plan Construction Traffic Impact Assessment Preliminary Construction Traffic Management Plan
N	Noise Impact Assessment Noise Best Practice Review
O	Air Quality Impact Assessment Air Quality Best Practice Review Air Quality Management Plan
P	Health Risk Assessment
Q	Biodiversity Assessment Report Specialist Wetlands Assessment
R	Stormwater and Flooding Environmental Impact Assessment Stormwater and Drainage Design Drawings

Appendix

S Geotechnical Structural Report

Phase 2 Environmental Assessment

T Visual Impact Assessment

Light Spill Study Report

U Aboriginal Heritage Impact Assessment

V Non-Indigenous Heritage Impact Assessment

W Bushfire Protection Assessment

2 SITE DESCRIPTION

Section 2 provides a summary of the Proposal site, including a description of its regional setting and local context within the surrounding area.

2.1 Site context

The MPW Stage 2 site (the Proposal site) includes the entire site for which Concept Approval was granted, as shown in Figure 1-1.

2.2 Regional context

The Proposal site is located approximately 27 km south-west of the Sydney Central Business District (CBD) and approximately 26 km west of Port Botany. The Proposal site is situated within the Liverpool Local Government Area (LGA) in Sydney's South West Sub-Region, approximately 2.5 km from the Liverpool City Centre. The Proposal site is also located in the vicinity of the South West Growth Centre, which is currently under development, and a concentration of industrial and business centres in Sydney's west and south-west.

The regional context of the Proposal site is shown on Figure 2-1.

The M5 Motorway provides the main road connection between the Proposal site and the key employment and industrial areas within the West and South Western Sydney Sub-Regions. The M5 Motorway is Sydney's primary arterial route connecting Sydney's City Centre to the western part of the Greater Sydney Metropolitan Region and the NSW road network via the M7 Motorway. Similarly, the M5 Motorway is the principal connection to Sydney's north and north-east via the Hume Highway. The Proposal site is well situated relative to these transport routes providing accessibility in servicing the Sydney metropolitan area including regional and interstate routes linking Sydney to other states.

The Main South Railway Line, the corridor for the Southern Sydney Freight Line (SSFL), is located one kilometre to the west of the Proposal site and the East Hills Railway Line is located directly to the south of the Proposal site. The SSFL is a 36 km dedicated freight line between Macarthur and Chullora. The SSFL commenced operations in January 2013 and aims to improve rail freight movements through Sydney to increase productivity and the overall competitiveness and reliability of the Rail Freight Network. The Proposal would connect to the SSFL, via the MPE Stage 1 Rail link², and would form a significant component of Australia's national rail freight network, which includes the planned Northern Sydney Freight Corridor and Port Botany Freight Line Upgrades.

The freight catchment area that the Proposal would partially cater for in 2018 is shown in Figure 2-1. The Proposal's freight catchment area can broadly be defined as Sydney's Industrial West, Liverpool and South West. The catchment area includes the industrial areas of Wetherill Park, Smithfield, Eastern Creek, Minchinbury, Arndell Park, Blacktown, St. Marys, Greystanes, Erskine Park, Liverpool, Moorebank, Camden Ingleburn, Milperra, Bankstown, Prestons and Minto.

² Constructed as part of the MPE Stage 1 Proposal (SSD 14-6766).

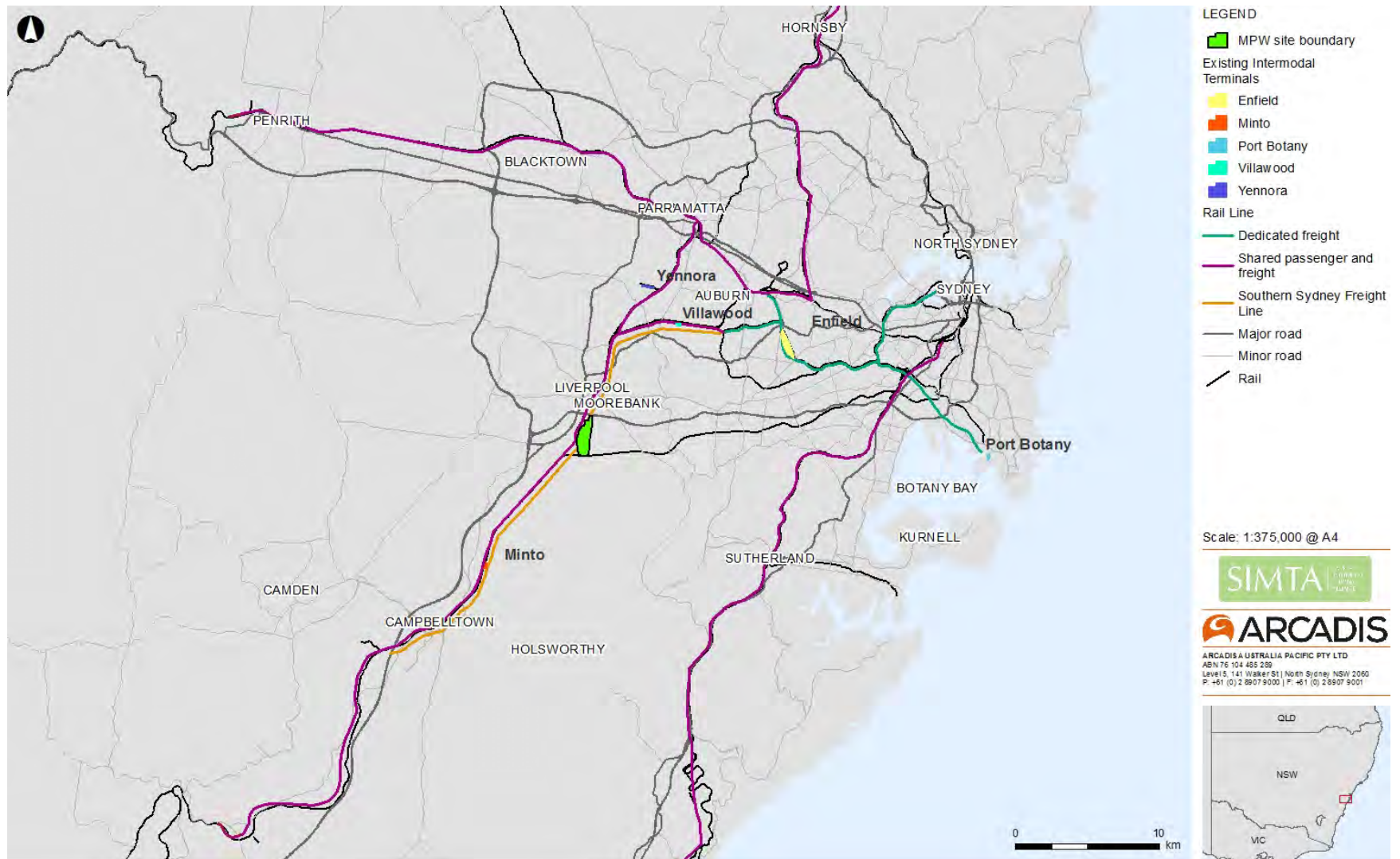


Figure 2-1: Regional context

2.3 Local context

The Proposal site has previously been occupied by Defence, comprising the School of Military Engineering (SME) and other minor Defence units. Defence has recently vacated the Proposal site, relocating to a site in West Wattle Grove as part of the Defence Moorebank Units Relocation Project (MUR Project).

2.3.1 Industrial (including Defence)

The Proposal site is located within and near a number of significant industrial and commercial areas within Moorebank, Warwick Farm, Chipping Norton, Prestons, Glenfield and Ingleburn. The industrial areas support a range of industrial uses including freight and logistics, heavy and light manufacturing, and office and businesses park developments. The area surrounding the site predominately comprises previous or existing industrial uses.

Directly north of the Proposal site, the land use is predominantly industrial and commercial, including the ABB Australia's Medium Voltage Production Facility site. This industrial and commercial land extends north of the M5 Motorway.

To the immediate east of the MPW site, across Moorebank Avenue, is the MPE site. The MPE site was formerly occupied by the Defence National Storage Distribution Centre (DNSDC), however now is subject to a number of approvals for the construction and operation of the SIMTA Intermodal Terminal Facility, Moorebank (refer to Section 1 of this EIS for further information).

Land use immediately east of the Proposal site and north of Anzac Road includes the privately owned Moorebank Industrial Area, which comprises approximately 200 ha of industrial development, the majority of which is located north of the M5 Motorway between Newbridge Road, the Georges River and Anzac Creek. This industrial area supports a range of industrial uses including freight and logistics, heavy and light manufacturing, and office and business park developments.

To the south-west of the Proposal site, is the Glenfield Waste Facility, which includes an existing waste handling facility and refuse disposal site. This facility is located adjacent to the western bank of the Georges River.

Current Defence industrial land uses surrounding the site include the Holsworthy Military Area (Holsworthy Barracks), located south-east of the Proposal site, and the Defence Joint Logistics Unit, located to the north east of the Proposal site, across Moorebank Avenue. Defence land, known as the Boot Land, which includes existing bushland is located, across Moorebank Avenue, to the east of the MPW site. A portion of Defence owned land, known as the 'Hourglass Land' is located to the west of the Proposal site, adjacent to the western bank of the Georges River.

2.3.2 Infrastructure

The Proposal site is well situated with regard to transportation infrastructure, both road and rail.

The Proposal site is bordered by Cambridge Avenue (south), Moorebank Avenue (east) and the M5 Motorway (to the north). Access to the Proposal site is currently via a main entrance known as the "Steel Barracks" entrance. A number of other site access points to Moorebank Avenue are located along the eastern perimeter of the MPW site.

The East Hills Railway Line Corridor and SSFL and Main South Railway Line are located to the south and west of the Proposal site respectively. A Rail link³ is to be

³ Constructed as part of the MPE Stage 1 Proposal (SSD 14-6766).

constructed to provide connection between the MPE site and the SSFL. The Rail link would traverse the southern part of the MPW site.

2.3.3 Residential

A number of residential suburbs are located in proximity to the Proposal site, as shown in Table 2-1. The closest residential sensitive receivers are approximately 300 m west of the Proposal site, and west of the SSFL.

Table 2-1: Distance from the closest residential receivers

Suburb	Distance ⁴ from:		
	Proposal site	Rail link connection	Rail link
Wattle Grove	1,000 m	1,000 m	1,260 m
Moorebank	630 m	1,400 m	2,500 m
Casula	330 m	1,200 m	290 m
Glenfield	820 m	1,100 m	750 m

2.3.4 Recreational and natural features

The Georges River runs directly west of the Proposal site. The riparian vegetation along the river is disturbed, with native and other vegetation (refer to Section 11 of this EIS for further details).

The areas west of the Georges River are generally characterized as low-density residential development with commercial developments and community facilities in the suburbs of Casula, directly west, and Liverpool, north-west.

Recreational areas in the vicinity of the Proposal site include Leacock Regional Park located to the west of the Georges River, in the suburb of Casula. Features of the park include the Bellbird walking track, Greenfield Creek, Leacock picnic area, and the State heritage listed Glenfield Farm, which is occupied as a private residence. North of the park, located between the west bank of the Georges River and the SSFL, is the Casula Powerhouse Arts Centre. Formerly a 1950s power station, the facility was converted to a multi-purpose arts facility in 1994.

The Proposal site is located entirely within the Georges River Catchment, which is a sub-catchment of the Sydney Metropolitan Catchment. The Georges River flows north through the Liverpool LGA, meeting with Glenfield Creek at Casula. The river then continues to flow north through the Chipping Norton Lakes Scheme, then east towards Botany Bay.

In the south-west corner of the Proposal site a number of linked ponds within the existing golf course form a link to Anzac Creek, which is an ephemeral tributary of the Georges River. The creek flows in a north-easterly direction and ultimately drains to Lake Moore on the Georges River, some three kilometres downstream of the Proposal site. The local context of the Proposal is shown in Figure 2-2.

⁴ Distance is measured from the closest residential receiver within this suburb.

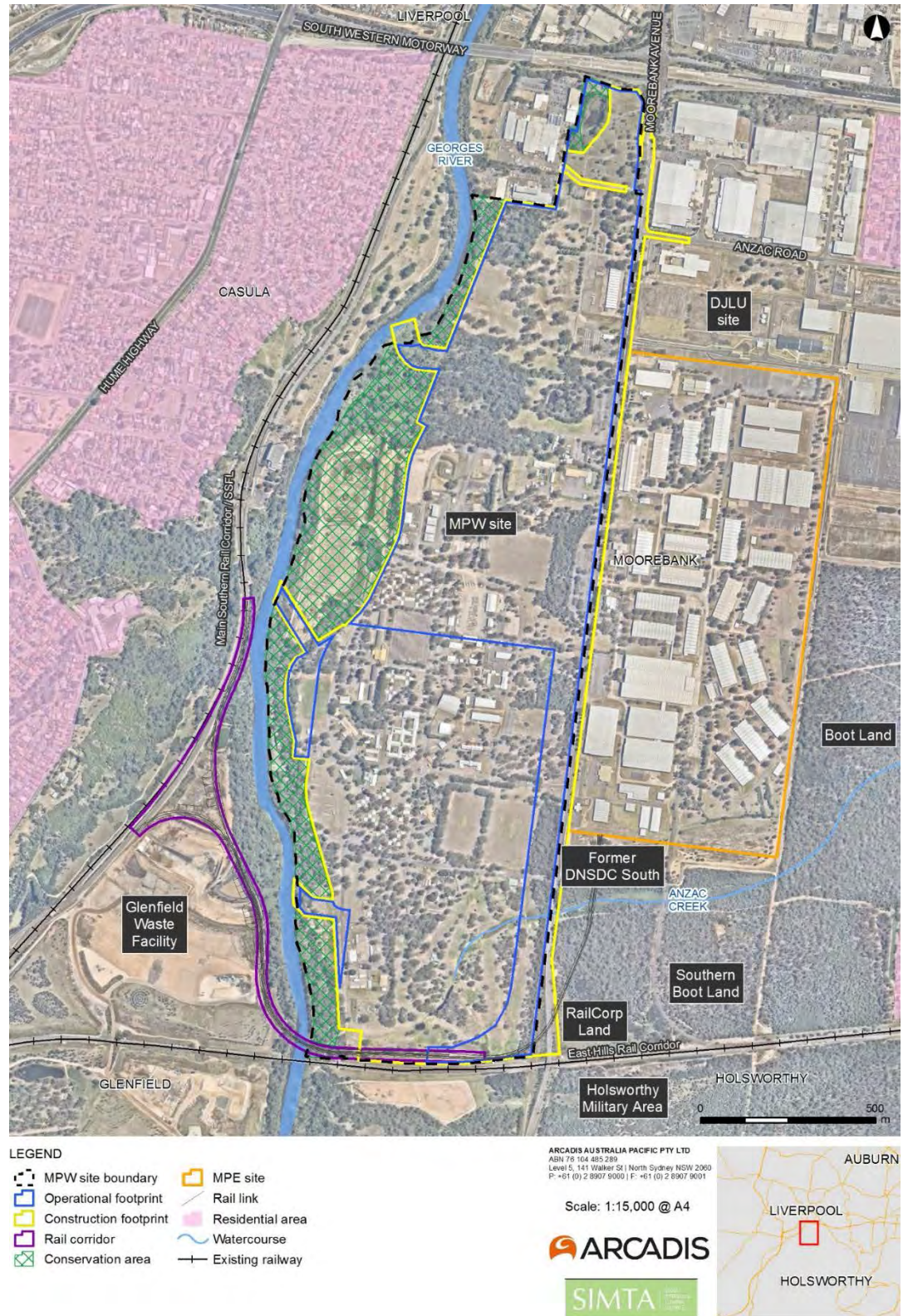


Figure 2-2: Local context

2.3.5 Surrounding development proposals

Development proposals in the vicinity of the Proposal are listed in Table 2-2. The locations of these proposals in relation to the Proposal site is shown in Figure 2-3.

Table 2-2: Nearby development proposals

Proposal	Application number	Location	Description	Status
Glenfield Waste Facility – Materials Recycling Facility	SSD 13_6249	Southern portion of the Glenfield Waste Facility site, south of the East Hills Rail Corridor, west of the Georges River.	Involves the development of a Materials Recycling Facility within the bounds of the current landfill site at Glenfield.	SEARs issued (13 December 2013)
MPE Moorebank Intermodal Terminal Facility Concept Plan	MP10_0193		Includes the development of former Defence land at Moorebank in three stages, comprising the following components: <ul style="list-style-type: none"> ▪ A Rail link ▪ An intermodal terminal ▪ Warehousing and distribution facilities ▪ A freight village 	Approved (29 September 2014)
MPE Intermodal Terminal Facility Stage 1	SSD 6766	MPE site, east of Moorebank avenue, south of Anzac Road.	Involves the construction and operation of Stage 1 of the MPE Concept Plan comprising of the following components: <ul style="list-style-type: none"> ▪ An intermodal terminal facility ▪ A rail link ▪ Associated works including vegetation clearing, remediation and levelling works; and drainage and utilities installation. 	Anticipated to be approved late 2016

Proposal	Application number	Location	Description	Status
MPE Interim warehousing	DA-1264/2015		Involves minor alterations, additions and use of two of the existing warehouses located within the north eastern part of the MPE site.	DA lodged (23 December 2015)
Minto Rail Siding	701/2011/DA-CW	5 and 9 Culverston Road, Minto. Lot 3 of DP817793, and Lot 400 of DP87511	Involves the construction and operation of a rail siding connected to the SSFL	24 August 2011
Minto Warehousing and Logistics Hub	SSD16_7500	5 and 9 Culverston Road, Minto. Lot 3 of DP817793, and Lot 400 of DP87511	Involves the construction and operation of a warehouse and logistics hub	SSD Lodged June 2016
Moorebank Resource Recovery Facility - Construction and Demolition Waste	MP 05_0157	Lots 308, 309 and 310, DP 1118048 and Lot 6, DP 1065574, Newbridge Road, Moorebank (adjacent to Georges Fair).	Involves the construction and operation of a recycling facility that would handle construction waste.	Approved

Further details on each of these proposals is provided below and an assessment of the cumulative impacts of these proposals with the Proposal is included in Section 19 of this EIS.

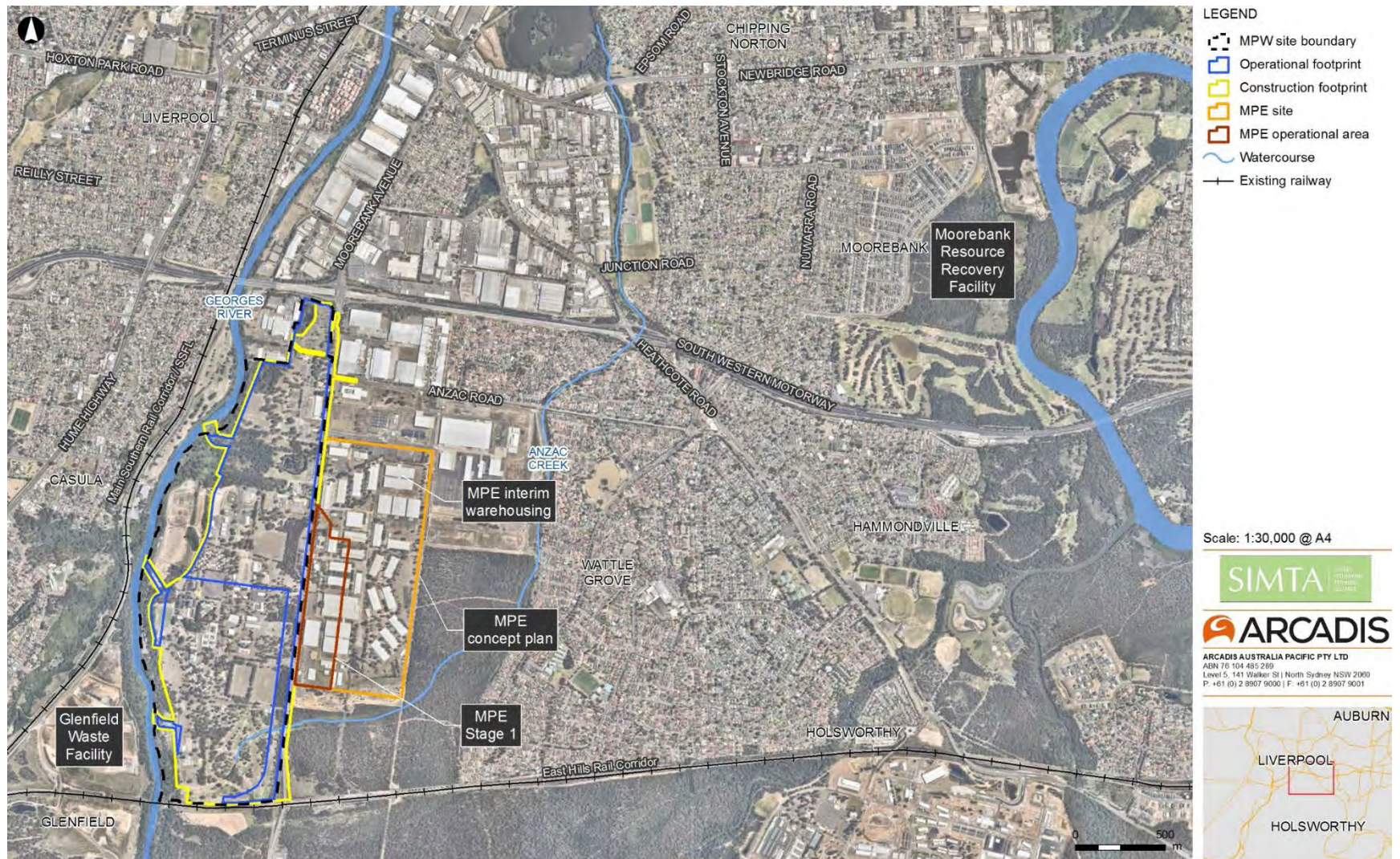


Figure 2-3: Developments within the vicinity of the Proposal site

2.4 Site description

The Proposal site is generally bounded by the Georges River to the west, Moorebank Avenue to the east, the East Hills Railway Line to the south and the M5 Motorway to the north. It is located on Moorebank Avenue, Moorebank and forms Lot 1 in Deposited Plan (DP) 1197707⁵, which is wholly owned by the Commonwealth, and leased by SIMTA. The Proposal site also contains Lots 100 and 101 DP1049508, which are located north of Bapaume Road. Works would also be required within the Georges River, to facilitate construction of the OSD channels, and the Commonwealth Hourglass land (Lot 4, DP 1130937) and Bootlands (Lot 4, DP 1197707), as part of the Biodiversity Offset Strategy.

The Proposal would also require works to upgrade the intersection of the MPW site with Moorebank Avenue and would therefore be undertaken on the following parcels of land:

- Moorebank Avenue, owned by the Commonwealth Government, south of Anzac Road Lot 2, DP 1197707 (formerly part of Lot 3001, DP 1125930)
- Moorebank Avenue, owned by Roads and Maritime Services, north of Anzac Road
- A portion of Anzac Road, owned by Liverpool City Council
- A portion of Anzac Road (Lot 3 of DP 1197707), which is on adjoining Defence land
- Bapaume Road, owned by Liverpool City Council.

The Proposal site includes approximately 200 ha of Commonwealth land to the south of the M5 Motorway and west of Moorebank Avenue.

The key existing features of the Proposal site are:

- Relatively flat topography, with the western edge flowing down towards the Georges River, which forms the western boundary to the MPW site
- A number of linked ponds in the south-west corner of the Proposal site, within the existing golf course, that link to Anzac Creek, which is an ephemeral tributary of the Georges River
- An existing stormwater system comprising pits, pipes and two open channels (one vegetated, one concrete-lined) that convey stormwater in a north-westerly direction across the site and discharge into the Georges River. Only one of the existing stormwater pipe networks discharges into Anzac Creek. In addition, there is an on-site detention basin (OSD) located in the northern portion of the site, which collects runoff from the M5 Motorway
- Direct frontage to Moorebank Avenue, which is a publicly used private road, south of Anzac Road and a publicly owned and used road north of Anzac Road
- The majority of the site has been developed and comprises low-rise buildings, including warehouses, administrative offices, operative buildings and residential buildings, access roads, open areas and landscaped fields for the former School of Military Engineering (SME) and the Royal Australian Engineers (RAE) Golf Course and Club. Defence has since vacated the site
- Native and exotic vegetation is scattered across the Proposal site
- The riparian area of the Georges River lies to the west of the Proposal site and contains a substantial corridor of native and introduced vegetation. The riparian vegetation corridor provides a wildlife corridor and a buffer for the protection of soil stability, water quality and aquatic habitats. This area has been defined as a conservation area as part of the MPW Concept Approval

⁵ Previously legally described as “Lot 3001, DP 1125930” in the Concept Plan Approval (MP 10_0193), however has since been subdivided.

- As stated above, the majority of the Proposal site has been developed, however biodiversity and heritage values are still present (discussed further in Sections 11, 16 and 17 respectively)
- A strip of land (up to approximately 250 m wide) along the western edge of the Proposal site lies below the 1% annual exceedance probability (AEP) flood level. This area generally corresponds to the proposed conservation area (refer to Figure 1-1)
- The Rail link (as approved under the MPE Stage 1 Proposal), which would be located along the southern boundary of the Proposal site, linking the MPE site to the SSFL.

Figure 2-4 shows the existing site layout.

It should be noted that the key existing features of the Proposal site as listed above would be considerably changed as a result of the Early Works, as approved under the MPW Concept Approval, refer to Section 1.4.1 of this EIS.

The Proposal site would be used for the IMT facility, the Rail link connection and the warehousing development, as discussed in Section 4 of this EIS.

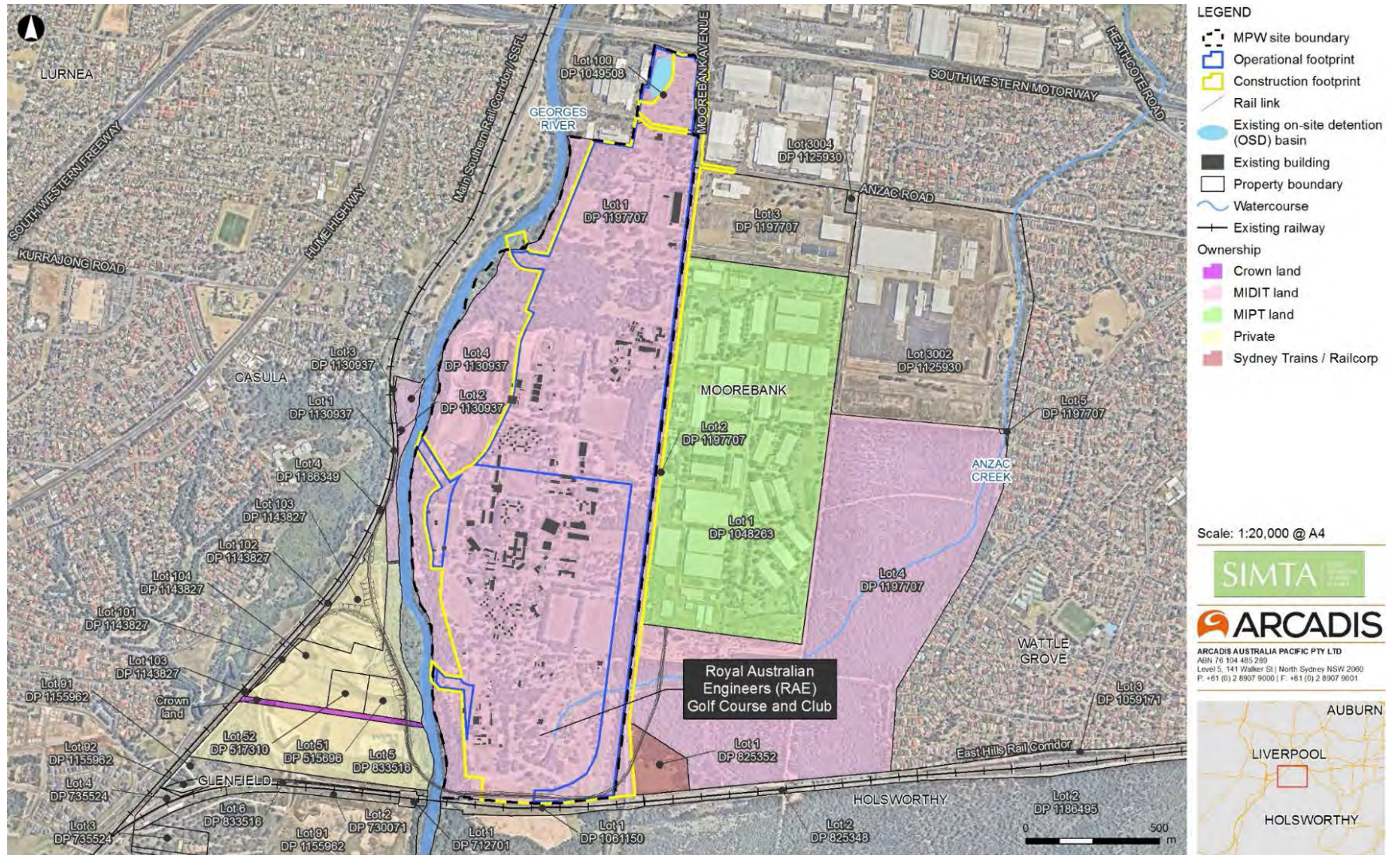


Figure 2-4: Existing site layout

3 PROPOSAL JUSTIFICATION, NEED AND ALTERNATIVES

The strategic justification, need for the Proposal and alternatives to the Proposal were broadly outlined in the MPW Concept EIS. This section provides an update to that analysis, including consideration of updated or additional strategic planning documents, plans and policies where relevant.

Table 3-1 sets out the SEARs as they relate to the Proposal with regards to its need and justification, and where in this EIS these have been addressed

Table 3-1: SEARs – Proposal justification, need and alternatives

Section/Number	Requirement	Where addressed in this EIS
General requirements	<p>The Environmental Impact Statement (EIS) must meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 the <i>Environmental Planning and Assessment Regulation 2000</i> including but not limited to:</p> <ul style="list-style-type: none"> ▪ a statement of the objectives of the development, including consideration of the development's consistency with the aims and objectives of relevant State policies and plans ▪ a justification of the development taking into consideration the objects of the EP&A Act 	Section 3.1 and 3.2 of this EIS
1. Statutory and strategic context	<p>Addressing the relevant planning provisions, goals and strategic planning objectives in the following:</p> <ul style="list-style-type: none"> ▪ NSW State Priorities; ▪ A Plan for Growing Sydney 2014 ▪ State Infrastructure Strategy 2012-2032; ▪ NSW Freight and Ports Strategy 2013; ▪ NSW Long Term Transport Masterplan; and ▪ National Land Freight Strategy. 	Section 3.1 of this EIS

3.1 Strategic justification

There has been strong and consistent policy support at State and Commonwealth levels for the expansion of the freight rail network across NSW and the development of an IMT facility at Moorebank since 2004. This section of the report clearly demonstrates that the Proposal responds to the aims and objectives of each of the existing and draft State and Commonwealth policies and plans.

3.1.1 National strategic planning and policy framework

Australian Infrastructure Plan, 2016

The Australian Infrastructure Plan (AIP) (Infrastructure Australia, 2016) provides a positive reform and investment roadmap for Australia, and sets out the infrastructure challenges and opportunities that Australia faces over the next 15 years. This plan also provides the solutions required to drive productivity growth and. The AIP provides 78 recommendations for reform with the aim of addressing existing infrastructure gaps.

The AIP states that ‘the efficient movement of freight into, out of and across Australia is critical to the nation’s ongoing productivity, growth and competitiveness’. The Australian Infrastructure Audit, on which the AIP is based, predicted substantial growth in the national freight task, with containerised trade predicted to increase by 165 per cent to 17,997,000 tonnes by 2031 and non-containerised trade to increase by 138 per cent to 2,098 million tonnes by 2031. The AIP notes that freight networks and supply chains are subject to a number of constraints, including missing links, pinch points, operational restrictions and last mile access challenges. Improving the efficiency and capacity of Sydney’s IMT network through the provision of an IMT facility at Moorebank would support the AIP by improving the capacity and efficiency of containerised freight movements through Port Botany.

Infrastructure Australia’s Infrastructure Priority List was released concurrently with the AIP to support and recommend specific investment areas. The Infrastructure Priority List is designed to guide private and public investment that represent the most productive use of infrastructure funding, while solving our most critical infrastructure problems. The Infrastructure Priority List used the Australian Infrastructure Audit (Infrastructure Australia, 2015) as the primary evidence base, working with State and territory governments, industry and other stakeholders to establish priorities for investment in two categories:

- Initiatives: infrastructure priorities that have been identified to address a nationally significant need, but require further development and rigorous assessment to determine and evaluate the most appropriate option for delivery.
- Projects: infrastructure priorities that have undergone a full business case assessment by Infrastructure Australia, will address a nationally significant problem, and deliver robust economic, social or environmental outcomes.

A business case assessment for the Moorebank IMT was undertaken by Infrastructure Australia under the AIP. The assessment stated that the Moorebank IMT alignment with the AIP’s strategic priorities of ‘increasing Australia’s productivity’ and ‘expanding Australia’s productive capacity’. The summary included in the business case assessment noted that:

- An intermodal terminal could be economically viable, particularly given the growth potential of Port Botany, the long timeframes for alternative road transport improvements such as WestConnex, and the likely continued congestion in the immediate Port Botany area.
- The use of alternative ports to Port Botany is not commercially viable because of the greater distances to the Sydney metropolitan destinations and economies of scale of stevedoring.
- An IMT at Moorebank was chosen as there is no other potential terminal site in the Sydney basin that has the same locational advantages, size, short-term availability, existing road and rail connections and ability to meet long-term industry needs at the time of the assessment.

The business case assessment was approved by the Infrastructure Australia board in February 2015. The business case assessment noted that the local environment of the Proposal is complex and relies on investments made by others, including the NSW

Government ensuring adequate connections between Moorebank Avenue and the M5 Motorway. 'Moorebank Intermodal Terminal road connection upgrade' is identified as an initiative on the Infrastructure Priority List. In summary, the development of an IMT at Moorebank, as included in the Proposal, is consistent with the priorities included in the AIP.

National Land Freight Strategy, 2012

The National Land Freight Strategy (Commonwealth of Australia, 2012) is a partnership between Commonwealth, State, Territory and local governments and industry to deliver a streamlined, integrated multimodal transport and logistics system, capable of efficiently moving freight throughout Australia.

The objective of the National Land Freight Strategy is to improve the efficiency of freight movements across infrastructure networks, minimise the negative impacts associated with such freight movements and influence policy making relevant to the movement of freight.

The long-term outcomes of the National Land Freight Strategy are to ensure:

- An efficient, productive and competitive national land freight system
- A sustainable land freight system that responds to growth and change
- That policies affecting land freight are aligned and coherent across governments.

The National Land Freight Strategy includes Moorebank IMT as a case study, noting that it will provide capacity to accommodate increases in container trade at Port Botany while delivering \$10 billion in economic benefits including improved productivity, reduced business costs, reduced road congestion and better environmental outcomes. It also notes that as a result of the Australian Government unlocking land of strategic importance to enable the development of the IMT, Sydney will be better positioned to handle the growth in the freight task as it occurs, rather than waiting until existing infrastructure has reached capacity. The Proposal is considered to be consistent with the objectives of the National Land Freight Strategy.

National Ports Strategy, 2011

The *National Ports Strategy* (Infrastructure Australia, 2011) was developed to drive the development of efficient, sustainable ports and related freight logistics that work towards an economically, socially and environmentally sustainable future. The main objective of the National Ports Strategy is to facilitate trade growth and improve the efficiency of port-related freight movement across infrastructure networks by committing to, and applying, best-practice policy making and planning. The *National Ports Strategy* was endorsed by the Council of Australian Governments in July 2012.

Ports are considered critical to the productivity and economic growth of Australia and as such, there is a need for a more collaborative approach to the management of supply chains and integrated planning to increase efficiencies. The objectives of the *National Ports Strategy* are to facilitate trade growth and improve the efficiency of port-related freight movement across infrastructure networks. Item 1.3 of Appendix A: Best practice guidelines – master planning and execution of the *National Ports Strategy* provides guidance for each metropolitan area to identify the inland IMTs, industrial/warehousing lands or other nodes that generate substantial amounts of port related freight traffic.

The *National Ports Strategy* provides background to the growth of the south-west area of Sydney, increasing freight demand and the need for IMTs to maintain the rail modal share of container freight from Port Botany. Maintaining or potentially increasing the rail mode share of container freight movements in the future would improve the efficiency of port-related freight movements across Sydney.

The *National Ports Strategy* has been developed to encourage and share best-practice and it identified the need to improve the efficiency of port-related freight movements across the infrastructure network, which aligns with the Proposal objectives.

National Infrastructure Priorities, 2009

In May 2009, Infrastructure Australia released the *National Infrastructure Priorities – Infrastructure for an economically, socially, and environmentally sustainable future* (Infrastructure 2009). This document identifies seven themes to boost Australia's productivity, protect the environment and enhance Australian's quality of life. These seven themes include the national broadband network, energy market, international gateways, rail freight network, cities, essential Indigenous infrastructure and water supply. Priority projects are then identified for each of these themes.

An IMT at Moorebank was identified under the infrastructure objective of 'Competitive international gateways' as one of the 'Priority Infrastructure Pipeline projects with real potential'. The aim of this infrastructure objective is to "develop more effective ports and associated land transport systems to more efficiently cope with imports and exports". The Proposal involves the development of part of the IMT at Moorebank which would improve the efficiency of land transport systems, which aligns with core objectives of this document.

3.1.2 NSW strategic planning and policy framework

NSW State Priorities

In 2016, 30 reforms were drafted, 12 of which were identified by the Premier as state priorities for NSW (NSW Government, 2016). These priorities include:

- Creating jobs
- Building infrastructure
- Reducing domestic violence
- Improving service levels in our hospitals
- Tackling childhood obesity
- Improving education results
- Protecting our kids
- Reducing youth homelessness
- Driving public sector diversity
- Keeping our environment clean
- Faster housing approvals
- Improving government services.

These priorities aim to provide measurable goals towards reforming the economy, delivering infrastructure, and improving health, education and other services across the state.

The Proposal, through the development of an IMT and associated warehousing, would directly support the priorities of creating jobs (both temporarily during construction and permanently during operation) and building infrastructure, and is therefore considered to be consistent with the NSW State Priorities.

Sydney Metropolitan Freight Strategy

The *2015-2024 Sydney Metropolitan Freight Strategy* was released by ARTC in 2015 with the aim of guiding approaches to how rail can successfully service Sydney's freight needs.

As outlined in the Strategy, ARTC's fundamental objective in the Sydney Metropolitan Area is to facilitate the growth of rail freight in the short, medium and long term.

The primary purpose of the Strategy is to detail the challenges, opportunities and the most effective solutions to achieve rail freight growth in Sydney and to subsequently provide direction both within the ARTC business, and for the supply chain participants.

This Strategy has considered the Moorebank Precinct, including the Proposal, in its capability analysis with regards to the SSFL, Port Botany and the broader freight distribution networks, and provided the following recommendations:

- Further discussions with NSW Ports and the Port Botany stevedores regarding train handling capacity and future infrastructure required to receive the projected volume of containers arriving at Port Botany by rail are required
- Further analysis of the feasibility of 1,300 m port shuttle trains in the medium term should be pursued

Further consultation has been undertaken with Sydney Ports as part of the preparation of the Proposal (refer to Section 6 of this EIS). The Proposal considers only a 650m port shuttle however there is the potential for larger trains to be accommodated in the future via the terminal given that also it has capacity to accommodate freight trains up to 1800m long. Therefore, the Proposal is considered consistent with this Strategy.

"Navigating the Future" NSW Ports' 30 Year Master Plan, 2015

"Navigating the Future" NSW Ports' 30 Year Master Plan (NSW Ports Master Plan) (NSW Ports, 2015), was prepared by NSW Ports in 2015 and, in conjunction with the Sustainability Plan, sets out a vision for achieving sustainable and efficient port supply chains in NSW for the next 30 years.

This Master Plan sets out five objectives to drive a sustainable future for the port supply chains:

- Provide efficient road and rail connections to the ports and IMTs
- Grow rail transport of containers
- Use land infrastructure efficiently
- Grow port capacity
- Protect the ports and IMTs from urban encroachment.

Under the 'grow rail transport of containers' priority, the NSW Ports Master Plan notes that maximising the transport of containers by rail between Port Botany and Sydney metropolitan intermodal terminals will be essential for cost-effective, efficient and sustainable container distribution through Sydney. It also notes that Port Botany would not be able to achieve an annual container throughput of seven million TEU without rail becoming a more significant component of the port logistics train. The NSW Ports Master Plan includes the development and commencement of operations of the Moorebank IMT as an action required for the effective implementation of this plan.

Further the NSW Ports Master Plan identifies that intermodal terminals are critical to the logistics chain, and essential if we are to increase the volume of containers moved by rail. The strategy for growing intermodal terminals with dedicated freight rail connections is well recognised as necessary to efficiently service the container transport needs of a growing Sydney. The NSW Ports Master Plan notes that intermodal terminals facilitate landside transport-logistic efficiencies and offer a sustainable and practical transport solution to meet the challenge of Sydney's growing freight volume. It

also states that where warehouse/distribution centres adjoin an intermodal terminal, containers can be transferred between the warehouse and the intermodal terminal without travelling on the external network. Transport operators that use intermodal terminals reduce the distance travelled by their trucks, resulting in a more effective and efficient use of their truck fleet.

It is noted in the NSW Ports Master Plan that the capacity of the intermodal terminals that service Port Botany (Cooks River, Minto and Yennora) do not have sufficient capacity to meet the forecast freight task and that future intermodal terminals (all with dedicated freight rail access), including Moorebank will be critical to meeting future rail demand. The Proposal aligns with the vision of the NSW Ports Master Plan and would assist in meeting the objectives included in the Plan to drive a sustainable future for port supply chains.

A Plan for Growing Sydney, 2014

A Plan for Growing Sydney (Department of Planning and Environment, 2014) was released in December 2014 and replaces the draft Metropolitan Plan for Sydney. *A Plan for Growing Sydney* is the NSW Government's 20 year plan to develop a competitive economy with world-class services and transport, to deliver greater housing choice to meet Sydney's changing needs and lifestyles, to create communities that have a strong sense of wellbeing, and to safeguard the natural environment.

Direction 1.5 of *A Plan for Growing Sydney* identifies the need to enhance capacity at Sydney's gateways and freight networks. IMTs play an important role in the broader freight network, allowing for greater movements of freight by rail and assisting to reduce road congestion, especially around Sydney's ports.

A Plan for Growing Sydney identifies six subregions within Sydney. Subregional plans would be developed as the link between the big picture planning directions and detailed planning controls for local areas. *A Plan for Growing Sydney* identifies priorities for each subregion. The Proposal is located within the South-West Subregion.

The priorities for the South-West Subregion include 'protecting infrastructure of metropolitan significance including intermodal terminals'. The Proposal therefore is considered to be consistent with *A Plan for Growing Sydney*.

State Infrastructure Strategy and Update, 2012 and 2014

The *State Infrastructure Strategy 2012-2032* (NSW Department of Premier and Cabinet, 2012) (the State Infrastructure Strategy) outlines the State Government's short, medium and long term initiatives concerning infrastructure delivery and reform over the next 20 years. The State Infrastructure Strategy identifies and prioritises the delivery of critical public infrastructure to drive productivity and economic growth.

The State Infrastructure Strategy identifies strategic infrastructure options to meet the challenges of population growth and substantial increases in freight volumes. It identifies that rail's share of the freight task has reduced over the last 10 years, partially due to relative cost of moving freight by road over short distances. The strategy identifies that rail could be cost competitive or cheaper than road transport if certain changes were implemented. These changes include the provision of IMTs and warehousing in the vicinity of IMTs.

The State Infrastructure Strategy identifies transport access to and from Sydney's international gateways as a short-term infrastructure priority. The development of an IMT at Moorebank in the next five years, and supporting infrastructure in five to ten years' time, are principal recommendations of the strategy.

An update to the State Infrastructure Strategy (NSW Department of Premier and Cabinet, 2014) was prepared by Infrastructure NSW at the direction of the Premier to

guide how the proceeds from the Rebuilding NSW initiative could be spent. The State Infrastructure Strategy Update makes 30 recommendations to Government on the next round of critical infrastructure for NSW, which prioritise reducing congestions, supporting population growth and stimulating productivity across Sydney and regional NSW.

As part of the update to the 'International gateways' section, under the strategic objective of 'Connect Sydney and NSW regions to national and global markets and suppliers' there is a new key infrastructure recommendation to assess and prioritise projects that ensure efficient road connections from Port Botany to the Moorebank Intermodal Terminal as an opportunity to manage the growing freight. Further, the opening of new intermodal terminals at Moorebank and the expanded use of existing terminals may improve the economies of short haul rail freight.

The Proposal would provide an additional IMT in the Sydney region to assist in increasing the rail mode share for short haul freight from Port Botany and from interstate and intrastate locations. It would also provide additional warehousing and storage adjacent to the IMT and is considered to align with the objectives of the State Infrastructure Strategy and Update.

NSW Freight and Ports Strategy, 2013

The NSW Freight and Ports Strategy (Transport for NSW, 2013) (the Freight and Ports Strategy) explains how Transport for NSW will work with commercial interests across government to provide an efficient network and a framework for managing the growth in freight. It highlights short, medium and long term tasks to improve freight movement on the network. The Freight and Ports Strategy will inform government and commercial investment decisions across all modes of transport and allow for the alignment of purpose and aims to provide a transport network in NSW that allows the efficient flow of goods to the market.

The Freight and Ports Strategy predicts that the freight task in NSW will nearly double to 794 million tonnes by 2031. This projected increase highlights the need to ensure that the network keeps pace with growth, and that this growth is sustainable for the long term prosperity of the State. The Freight Strategy also identifies that there is an opportunity to shift more freight onto rail.

The Freight and Ports Strategy notes that the movement of more freight onto the rail network is essential to the success of the NSW economy, with rail freight playing a critical role in in the NSW transport task for bulk and containerised freight. It is also noted in the strategy that the development of the intermodal terminal at Moorebank would positively impact on the efficient operation of the rail freight task.

To meet the challenges associated with the growing freight task, one of the aims of the Freight and Ports Strategy is to provide a transport network in NSW that allows for the efficient flow of goods to their market. The objectives of the Freight and Ports Strategy under Strategic Action 2– Network Capacity are the delivery of a freight network that efficiently supports the projected growth of the NSW economy and balancing freight needs with those of the broader community and the environment.

Action 2E of Strategic Action 2 of the Freight and Ports Strategy is to foster IMT network development. Metropolitan IMTs are critical to increase rail mode share and manage the rapidly growing import container trade. The existing capacity of IMTs in Sydney is inadequate to meet the growing demand for import and export container movements.

Task 2E-1 as part of Action 2E is to foster IMTs in metropolitan areas. The targeted outcome of this task is:

The development of new intermodal terminals in Enfield, Moorebank and Western Sydney will occur on sites that are supported by dedicated rail freight lines and adequate road connections. Rail lines to Port Botany will avoid interaction with

passenger services on the shared network and facilitate 24 hour port, rail and terminal operations.

The Proposal directly assists the achievement of this task as the facility would have a connection to the SSFL and convenient road connection in close proximity to the Sydney Motorway Network.

NSW Long Term Transport Masterplan, 2012

The *NSW Long Term Transport Master Plan (Master Plan)* (Transport for NSW, 2012) presents the NSW Government's direction for transport planning and investment for the next 20 years. It identifies the key challenges that the NSW transport system must address to support the State's economic and social performance, and identifies a planned and coordinated set of actions to address those challenges.

Chapter 7 of the Master Plan addresses the need to support efficient and productive freight. This section identifies the lack of metropolitan IMT infrastructure as a restriction to rail freight movement. Metropolitan IMTs are identified as critical to increasing the share of container freight moved by rail and to manage growing import container trade particularly in Sydney. The Master Plan identifies that 85 % of import containers are delivered to destinations within 45 km of Port Botany. IMT terminals in the metropolitan area therefore enable the delivery of container freight on rail close to major road links and end users.

IMT infrastructure has the potential to reduce congestion around the port and provides an opportunity to avoid bottlenecks occurring due to a single point of focus for port related road freight movements. It also provides some resilience in the system in the event of incidents causing blockages at the port.

In order to address this capacity issue, the Master Plan identifies an action to develop a metropolitan network of IMTs which would increase the share of freight that is transported by rail. The development of an IMT at Moorebank would assist in achieving this goal of the Master Plan. The anticipated freight catchment for the Proposal is the south-western areas of Sydney and the facility would be located close to the M5 Motorway, consistent with the driver to deliver container freight on rail, close to major road links and end users.

NSW 2021: A plan to make NSW number one, 2011

NSW 2021: A plan to make NSW number one (NSW Department of Premier and Cabinet, 2011) (NSW 2021) is the NSW Government's 10 year strategic business plan, which sets priorities for action and guides resource allocation to deliver economic growth and critical infrastructure throughout NSW.

NSW 2021 includes the following target with regard to freight:

Enhance rail freight movement – Double the proportion of container freight movement by rail through NSW ports by 2020.

Goal 19 of NSW 2021 is to invest in critical infrastructure. NSW 2021 states that the right infrastructure in the right places is essential to achieving economic growth, because it improved productivity and makes us more competitive. By investing in strategic and coordinated infrastructure to boost business confidence and help NSW reach its full potential, more job opportunities and choice will be created. Further, NSW 2021 notes that Infrastructure NSW will strongly encourage the involvement of the private sector to further boost infrastructure activity.

One of the targets of Goal 19 is to enhance freight rail movement, by doubling the proportion of container freight movement by rail through NSW ports by 2020. Under this target, it is noted in NSW 2021 that moving freight quickly and economically by rail through ports is critical to accommodate high forecasted growth in freight movements,

particularly through Port Botany. One of the actions to achieve this target in NSW 2021 is to develop the NSW Freight Strategy, integrated with strategic land use and transport planning.

It is anticipated that the Proposal would allow for the transport of freight via rail both interstate and intrastate, and would provide a port shuttle service. It would also facilitate freight movements via truck. As such, the Proposal would result in an increase proportion of freight movements made by rail and assist in meeting the rail freight target.

The facility would also contribute to achieving the broader land use and planning objectives, including:

- Generating additional employment opportunities to contribute to the 100,000 new jobs to be generated at an average growth of 1.25 % per year. These jobs would be situated within south-western Sydney, which is the fastest growing subregion of Metropolitan Sydney, increasing the availability of jobs closer to home
- Reducing freight demand on the road network within Sydney, helping to reduce travel times and improve road safety due to efficiency improvements along the M5 Motorway.

Draft South West Subregional Strategy, 2009

The *South West Subregion Draft Subregional Strategy* (Subregional Strategy) was prepared by the State Government in 2009. While it has not been formally adopted, it provides subregional actions to deliver the objectives of the Sydney Metropolitan Strategy.

The Subregional Strategy recognises the importance of improving the efficiency of freight transportation from Port Botany to increase port capacity. The Subregional Strategy acknowledges the need for new major IMTs to service south-west Sydney in order to meet the goal of increasing rail freight movements from Port Botany. It also identifies Moorebank as offering a strategically appropriate location for a new major terminal to deliver this goal, being serviced by the SSFL.

The importance of delivering an IMT within Moorebank that connects to the SSFL and meets the growing demands of freight movements in the west of Sydney is outlined in the Subregional Strategy:

The State Government regards the proposal for a transport terminal at Moorebank as a key component in meeting Sydney's intermodal capacity needs. [p.30]

The Subregional Strategy also recognises the significance of the employment lands within Moorebank and their capability to accommodate additional industrial activities. Moorebank is identified as providing 200 ha of Category 1 Employment Lands to service the subregion, being *land to be retained for industrial purposes* (p.28). The precinct is marked to provide a number of key industrial functions, including freight and logistics.

The Proposal is consistent with the Subregional Strategy as it would deliver the planned IMT to support the freight industry. It is located within close proximity to the M5 Motorway, the M7 Motorway and the SSFL, providing access to both road and rail networks. Further, the Proposal would deliver approximately 570 jobs during the peak construction period, and 40 direct operational jobs in the IMT facility and 1,200 full time equivalent staff for the warehouses during operation, contributing to the delivery of jobs within Western Sydney and the South West subregion.

Actions for Air, 2009

Action for Air (DECCW, 2009) is the NSW Government's 25 year plan to improve the air quality in the greater metropolitan region. The plan commenced in 1998 and is a whole-of-government strategy covering all major contributing sources of air pollution.

Actions for Air was reviewed every three years through a clean air forum and updated to take into account changing circumstances and information. Clean Air Forums were held in 2001, 2004 and 2007 with updates in 2002, 2006 and 2009.

The aims of the *Actions for Air* plan are to:

- Reduce emissions so that we comply with the State Plan's cleaner air targets, that is, meeting the national air quality standards for six pollutants as identified in the Air NEPM
- Reducing the population's exposure to air pollution and the associated health costs.

Action for Air identifies ozone and particles as the biggest air quality challenges for the Sydney metropolitan region, and that motor vehicles are the biggest contributor to these problems. The plan also nominates actions and objectives specifically targeted towards reducing emissions from motor vehicles. The Proposal would assist meeting this goal by facilitating a mode shift from road to rail and thereby reducing vehicle emissions.

An *Air Quality Impact Assessment* (Appendix O of this EIS) has been prepared to assess the local and regional air quality impact associated with the Proposal. The assessment found that the Proposal comply with all relevant assessment criteria and that the risk of adverse air quality impacts generated by the Proposal are low.

Port Freight Logistics Plan, 2008

The *Port Freight Logistics Plan* (Logistics Plan) was prepared by Sydney Ports Corporation (now the Port Authority of NSW) in 2008 to guide the development of freight logistics infrastructure across Sydney. The Logistics Plan outlines initiatives to increase freight movements by rail and minimise freight truck movements in and around Port Botany.

The Logistics Plan identifies the need to expand the existing network of IMTs within Sydney and supports the additional IMT network prepared by the then Department of Planning and Infrastructure (now DP&E), which includes a new IMT in Moorebank. The Logistics Plan also identifies a number of constraints on the expansion of the IMT network, principally the requirement for most freight movements to be on rail lines which are shared by passenger services, which limit access and have curfews associated with their operation.

The Proposal meets the aims and objectives of the Logistics Plan. It would facilitate the delivery of an IMT by the private sector, enabling the facility to be delivered in a timely manner and contribute to achieving increased rail freight movements.

Railing Port Botany's Containers, 2005

Railing Port Botany's Containers: Proposals to Ease Pressure on Sydney's Roads (Freight Infrastructure Advisory Board (FIAB), 2005) was prepared by the FIAB to examine potential methods to increase the rail share of freight throughput at Port Botany and presented to the Minister for Planning and Infrastructure for consideration.

The report included 23 recommendations to address the movement of import and export containers within the Sydney basin and the opportunities to increase the movement of freight by rail. The recommendations of the FIAB report were reviewed by the Infrastructure Implementation Group on behalf of the NSW Government, to determine priorities for implementation. Specific recommendations that have particular relevance and consistency to the Proposal with the recommendations of the report are provided in Table 3-2.

Table 3-2: Relevant recommendations from Railing Port Botany's Containers

Recommendation	Relevance to Proposal
The 40% rail share target must be met and if possible exceeded.	The Proposal would assist in a mode shift from road to rail.
The NSW Government take all necessary steps to ensure that Sydney has sufficient additional IMT capacity to meet a rail freight share of 40 %.	
Develop the major, new terminals at Enfield, Moorebank and Eastern Creek (including adequate provisions to allow common user and open access operations).	<p>The Proposal involves the development of an IMT at Moorebank by the private sector. The Proposal would provide capacity for 500,000 TEU annually.</p> <p>The design of the Rail link connection has been, and would continue to be, undertaken in consultation with Sydney Trains to ensure that the future expansion of the East Hills Rail Line is not compromised.</p> <p>The proposed site allows for appropriate buffer zones between residential areas and does not preclude the development of public recreation facilities along the Georges River.</p>
Regard Moorebank as a key component in meeting Sydney's IMT capacity needs	
Ensure that the Moorebank site is secured for IMT development by the private sector and be prepared if necessary, on a transitional basis, to use funds from the Freight Infrastructure Charge for this purpose.	
Commence planning for the site's development by the private sector as an IMT with the capacity to handle at least 500,000 TEUs annually.	
Work with the Australian Government to move the SME from the site as soon as possible.	
Develop a business model for the acquisition and development of the site in a way that allows the private sector to bring forward the terminal's development.	
Ensure that access to the Moorebank site is delivered in a way that does not compromise the future expansion of the East Hills passenger line.	
Ensure planning for Moorebank includes design buffers to reinforce the site's separation from residential development and provide public recreation facilities along both sides of the Georges River.	

3.2 Proposal need

An analysis of the need for the Proposal, the freight demand and the anticipated catchment for an IMT at Moorebank was undertaken as part of the MPW Concept Approval. This section provides a summary of the need for the Proposal and any relevant updates to the information presented in the MPW Concept EIS.

3.2.1 Container freight demand

Forecast growth in international and interstate freight movements through Sydney and increased industrial and commercial development in west and south-west of Sydney have prompted government and industry to consider new strategies for alleviating constraints on freight movement. Insufficient IMT rail freight capacity is recognised as a key barrier to the future development of Sydney and improvements in national productivity as identified in national and state strategies (discussed above).

An IMT at Moorebank would respond to Sydney’s need for more freight handling capacity as the Proposal would enable more containerised freight to be moved by rail.

IMEX demand

Port Botany accounts for almost all containerised IMEX trade through NSW ports. Total container trade through Port Botany in 2013-14 was 2.2 million TEU, up from 2.1 million TEU in 2012-13.

Full container imports in 2013-14 were 1.1 million TEU, while full container exports were 0.44 million TEU, a decrease of 1.6 % from 2012-13. The export of empty containers was 0.66 million TEU, an increase of 8.4 % on 2012-13.

Compound annual container growth through Port Botany has been over seven per cent for a ten year period to 2012. However, current forecasts are slightly more conservative with a forecast average annual growth rate of 6.2 % over the period 2014-2019. In November 2012 the *Ports Assets (Authorised Transactions) Act 2012* came into force. The purpose of the Act is to provide for the restructuring of arrangements for the operation and regulation of Port Botany. The Act removed the 3.2 million TEU throughput capacity limit at Port Botany, meaning that port TEU throughput is constrained only by the physical capacity of the port to handle containers and market demand. At the projected TEU throughput growth of 6.2 % per annum (Port Authority of NSW forecasts) the 3.2 million TEU capacity is expected to be reached in 2020. Over the longer term, the NSW Freight and Port Strategy predicts that total throughput at Port Botany is forecast to reach seven million TEU by 2030, as shown in Figure 3-1.

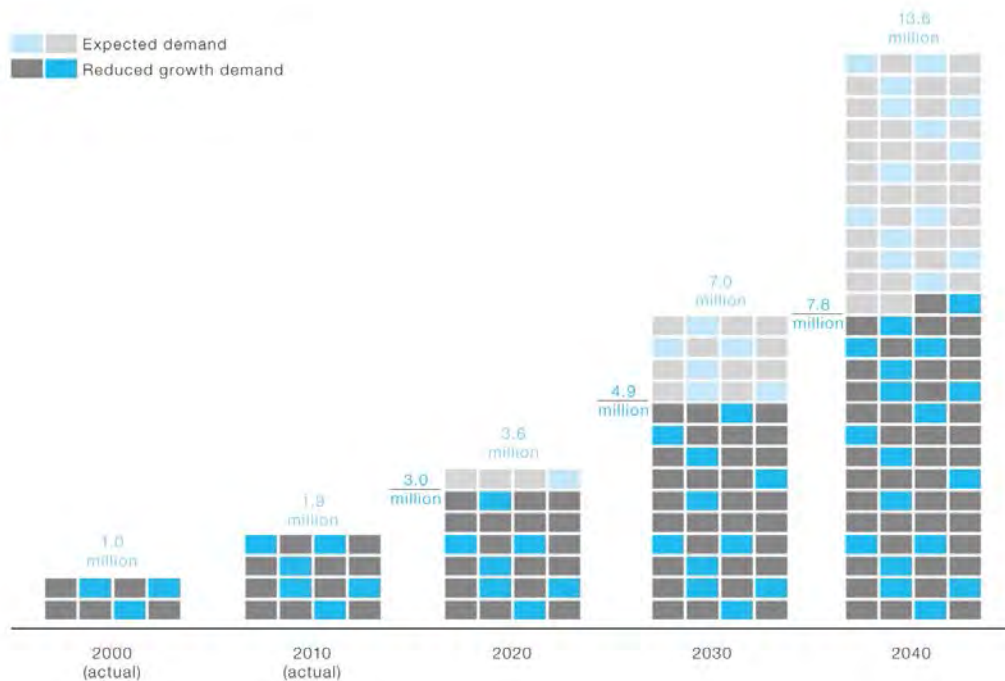


Figure 3-1: NSW container volume forecasts 2020-2040

Source: NSW Freight and Ports Strategy, NSW Government 2013, as shown in the MPW Concept EIS (PB, 2014)

Note: ‘Expected demand’ forecasts are the NSW Government’s expectation as to the most likely growth forecast, and the ‘reduced demand’ scenario represents a scenario where growth is lower.

Projected growth in trade volumes will lead to an increase in freight movements across the Sydney Greater Metropolitan Area. This will pose substantial challenges for the supply chain which is currently dominated by road transport. It is estimated that only 14% of container freight through Port Botany is currently transported by rail. To meet

these challenges and to allow for increased use of rail, it is considered necessary to invest in new IMT capacity, to develop dedicated freight rail lines, to widen the orbital motorway network and ideally to complete the missing linkages in the current orbital motorway network, and to improve the rail interface at Port Botany.

Intrastate and Interstate demand

Strategic planning in the freight sector is also placing renewed emphasis on interstate rail transportation. It is anticipated that demand for interstate freight will continue to grow consistently over the coming years, requiring additional IMT facilities at key points within the freight network. Interstate rail demand is estimated to be approximately 328,000 TEU a year by 2030 and 363,000 TEU a year (volumes going directly to/from Sydney, excluding transit traffic) by 2040 (Deloitte, 2013).

The majority of east coast interstate freight in NSW is currently transported by road, with only a small proportion being transported by rail. The rail mode share for the Sydney-Melbourne freight corridor and the Sydney-Brisbane freight corridor is approximately 10% and 20% respectively (Deloitte 2013). However, it is anticipated that the volume of interstate freight moving through Sydney will grow at a rate of 3.6% per year for the next 20 years (with road and rail freight at 3.8% and 3.5% a year, respectively) (BITRE 2010).

In addition to interstate rail demand going directly to/from Sydney, there is also transit cargo between Brisbane-Melbourne and Adelaide-Perth. It is assumed that Brisbane-Melbourne services would bypass the Proposal; however, Brisbane-Adelaide and Brisbane-Perth services may utilise a Sydney terminal to consolidate and tranship cargo between services. The volume on these services is estimated to be approximately 104,000 TEU a year.

Asciano's facility at Chullora is currently the primary interstate terminal in Sydney and has an estimated annual throughput of 200,000 TEU and an estimated current capacity of 350,000 TEU a year (Deloitte 2013). The future plans for Chullora as an interstate terminal (i.e. whether it closes, expands or continues as existing) are likely to have a major impact on the timing of the development of an interstate facility at Moorebank (the Proposal). Sensitivity testing undertaken as part of the demand forecasting reported by Deloitte (2013) for the MIC EIS, predicted that even with rail network constraints and if Chullora remains operational with a capacity of approximately 350,000 TEU, there would still be demand for handling up to 107,000 TEU for the interstate market through the Moorebank IMT (the Proposal) in the short to medium term.

3.2.2 Business as usual – existing capacity vs need

Total annual IMT container throughput capacity in Sydney was approximately 0.68 million TEU throughput per annum in 2013, across the Yennora, Minto, Villawood, Chullora, Cooks River and Enfield IMTs (MIC, 2013). Since that time, the Villawood IMT has ceased operations reducing IMT capacity by approximately 20,000 TEUs per annum. The Enfield IMT, which has recently been completed, currently has a throughput capacity of 50,000 TEU however the proposed capacity of the Enfield IMT is 300,000 TEU per annum.

With annual throughput at Port Botany projected to increase to 2.6 million TEU by 2016, further additions to the capacity and efficiency of the freight and logistics network are needed to increase the share of rail container freight transport so that Sydney has over 0.73 million TEU of IMT capacity (in order for Sydney to meet the target of 28% rail mode share).

In the absence of any additional investment and development of IMT facilities, IMT capacity in the Sydney Region would be limited to the aggregate capacity of the

Yennora, Minto, Chullora, Cooks River and Enfield IMT facilities, which equates to 1.2 million TEU per annum including interstate freight. The existing capacity would be unable to fulfil the policy target of 28 % container freight movement by rail out of Port Botany by 2016. This would result in an increase to the mode share of road transport and place further pressure on an already constrained road network both around the port and on parts of Sydney's Motorway Network.

3.2.3 Container distribution – origin and destination

Of critical importance in planning and developing IMTs within Sydney, is an understanding of where containers have their origins and destinations. The development of IMTs to provide rail supply capacity must be in those areas where the majority of freight activity is generated. There is a strong connection between the location of economic activity, population and container destination, and this connection is not expected to change significantly over the next 30 years. With Sydney's population forecast to grow, the metropolitan area will remain the origin/destination for the majority of Port Botany's container throughput.

Approximately 90% of Port Botany's container throughput has its origin/destination within the metropolitan Sydney area (i.e. within a 60 km radius of Port Botany). Of the full container exports, approximately 65% are packed in the metropolitan area and 35% in regional NSW/Newcastle (e.g. cotton, grain, meat, aluminium etc.). By 2040 the Port Authority of NSW forecast that 92.5% of containers would have a destination in the Sydney metropolitan area.

Since Port Botany was established in the late 1970s, it attracted a number of associated container handling industries, such as freight forwarding, transport, warehousing and container packing/unpacking. Over time, as a result of limited land availability and increased land value in the Botany/Mascot area, many of the industries associated with container receipt and distribution have migrated away from the port area, to where land is more available and more affordable, and nearer to their end-clients.

Sydney's employment distribution has been changing with a distinct shift westwards of Sydney's manufacturing, employment, wholesale and warehousing distribution industries. The consequence of this redistribution, aggregated with trade growth, has been a marked increase in truck movements, and over reliance on roads to manage Port Botany container freight logistics.

On various occasions over recent years, origin/destination studies have been commissioned in order to better understand the locations of import container points of delivery and of export container collection, to help identify infrastructure needs associated with developing freight areas. The methodology used incorporated the use of statistical data regarding areas of population and employment, as well as statistical data relating to the physical points on cargo origin (exports) and destination (imports). This information was calibrated against information garnered from trucking company surveys. Over the last seventeen years at least five such studies have been undertaken:

- Sydney Ports Corporation, *Logistics Review 2010/2011*, May 2012
- Sydney Ports Corporation/Thompson Clarke, *Metropolitan Sydney International Container Origin/Destination Analysis*, August 2010
- Sydney Ports Corporation/University of Victoria, *Container Origin and Destination Study*, 2010
- Sea Freight Council of NSW/Jays Corporate Services, *NSW Import Export Container Mapping Study*, February 2004
- Sydney Ports Corporation/Connell Wagner, *Port Botany Origin-Destination Study*, July 1998.

The anticipated catchment area for the Proposal is South West Sydney including Moorebank, Liverpool, Prestons, Ingleburn, Minto, Campbelltown, Camden as well as the future South West Growth Centre, which is centred on Leppington.

Each of the above origin/destination studies confirm that the catchment area as defined for the Proposal is growing as industry and employment migrates west. The latest origin/destination study conducted by Sydney Ports (now the Port Authority of NSW) in 2011 and published in 2012, showed that the Proposal catchment area accounts for 15% of Port Botany's import trade by destination. Based on current throughput this equates to an existing catchment of 300,000 TEUs per annum increasing to one million TEUs per annum in the long-term. As the South West Growth Centre is developed, it is forecast the Proposal catchment area would increase from 15% of Port Botany imports by destination, to around 20%.

To maintain the rail share of 14%, let alone to achieve an increase to the targeted 28%, additional metropolitan IMT capacity is needed, located in proximity to those catchment areas where import/export freight has its origin/destination. This is particularly relevant for the growing region of South West Sydney, as evidenced in key NSW Government reports.

Indeed the Freight Infrastructure Advisory Board (FIAB) Report to the then Minister for Planning, *Railing Port Botany's Containers* (2005), recommended that Government target a rail mode share of 40% and that in order to cater for this volume that large-scale IMTs be developed at Enfield, Moorebank and eventually Eastern Creek.

Further consideration of the potential container flow movements for the Proposal has been undertaken by Neil Mathews Consulting (refer to Appendix M, appended to the Traffic and Accessibility Impact Assessment). A summary of the container origins and destinations for the proposed IMT facility is depicted in Figure 3-2.

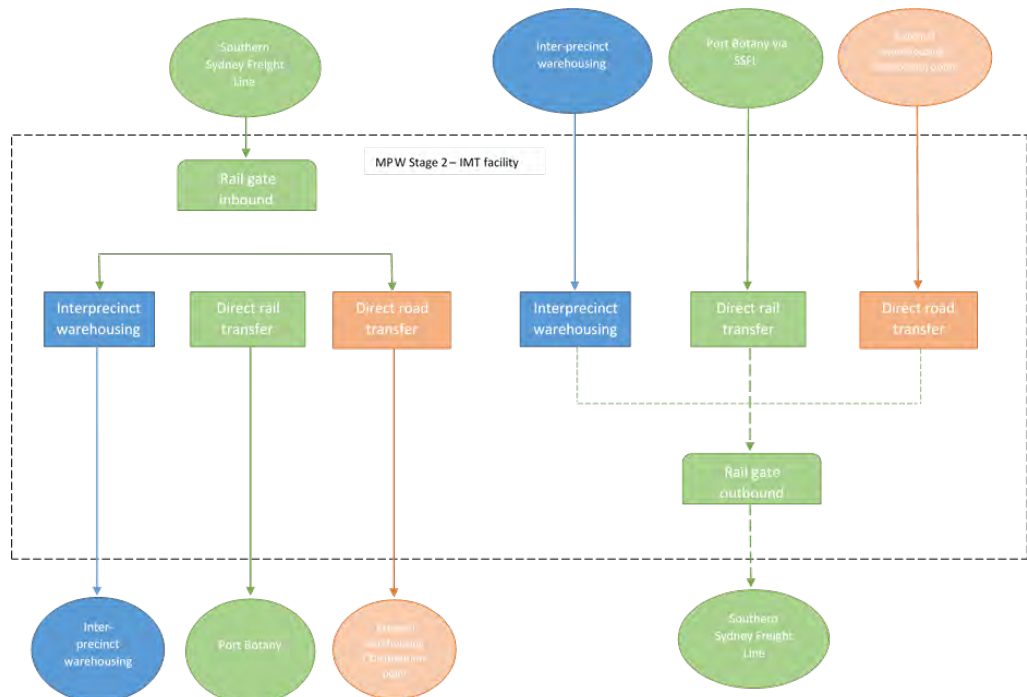


Figure 3-2: IMT facility container movements

3.2.4 Proposal benefits

Both Commonwealth and State government policy have indicated the strategic importance of improving freight transportation throughout NSW (and Australia) and,

more specifically for the development of an IMT facility at Moorebank, since 2004. Further, with the recent long term leasing of Port Botany/Kembla, and associated increase to the container throughput limits, there is added importance placed on IMTs with their operation being critical, especially in increasing the rail mode share and reducing truck movements on already constrained road networks throughout Sydney.

In addition to its strategic importance, the Proposal is expected to generate a number of economic, social and environmental benefits for the community and economy, including:

- Economic benefits: The unit costs of transporting containers by rail for IMEX and interstate markets would be reduced, which would lead to an increase in the share of freight movements by rail. This would therefore improve productivity, reduce operating costs, increase reliability, reduce costs associated with road damage, congestion and accidents, and lead to better environmental outcomes
- Job creation: Creation of approximately 570 personnel during the peak construction period of the Proposal and 40 jobs per year for the IMT facility operations and 1,200 full time equivalent staff for the operation of the warehousing area
- Better environment through reduced road congestion: Fewer truck journeys every day (to and from Port Botany), resulting in reductions in noise, greenhouse gas emissions, fuel consumption and other air pollution
- Social benefits of reducing road traffic and associated noise along key road freight routes between Moorebank and Port Botany and interstate
- Easing the Port Botany bottleneck to enable the Port to cope with future growth and provide large scale freight capacity
- Enabling the movement of freight around Australia, considering interstate freight is expected to grow by 3.6% a year over the next 20 years.

The Proposal is considered to be in the public's best interest as its residual impacts would be localised and managed, however its benefits would be significant and widespread for the entire community.

3.2.5 Relationship to the adjoining development

Approval has been granted for the MPE Concept Plan which includes a separate intermodal terminal and associated warehousing (the MPE Project) on the adjoining MPE site, previously occupied by the Defence National Storage and Distribution Centre (DNSDC). The MPE Project is for the development of an intermodal terminal facility linked to Port Botany by rail. Stage 1 of the MPE Project includes the construction and operation of an intermodal terminal (IMEX) with capacity for 250,000 TEU throughput, which is anticipated to commence operations in 2017.

The MPE IMEX facility would serve the same freight catchment area in Sydney's west and south-west. The intended freight catchment has an indicative capacity of one million TEU. This one million TEU represents a cumulative capacity, or total freight capacity, for IMTs located at Moorebank (with the exception of proposed interstate freight transport being included as part of the MPW Proposal).

On 5 December 2014, MIC and SIMTA announced their in-principle agreement to develop the Moorebank IMT Precinct on a whole of precinct basis. This agreement is subject to satisfying several conditions which both parties are currently working towards.

Despite its close proximity to the MPE Proposal and the in-principle agreement, the Proposal remains a viable standalone operation irrespective of the undertaking of surrounding development and, at this point in time, is unrelated to and independent of such other development.

This EIS includes consideration and assessment of the potential cumulative impacts of the two IMTs, refer to Section 19 of this EIS.

3.3 Proposal alternatives

The potential alternatives to the Proposal were considered as part of the MPW Concept EIS. As such, this section provides an overview of the do-nothing option and alternative sites, and the design options for the Proposal.

3.3.1 Do nothing

Section 3.2 clearly identifies the strategic need for the provision of an IMT located in Moorebank that can provide distribution capacity to the south west freight catchment.

Whilst the 'do nothing' option would result in a reduction of localised environmental impacts around the Proposal site, this option would not improve freight transit for outward or inward bound interstate, intrastate and port shuttle freight movements. Similarly, it would not deliver any improvements to general transit conditions on the M5 Motorway or reductions in greenhouse gas emissions from diesel trucks. Furthermore, it would not provide temporary and long-term employment opportunities within the region.

As such, the 'do nothing' option is not considered to be a feasible alternative to the Proposal.

3.3.2 Alternative sites

There are limited alternative options for a viable IMT within the area. IMT facilities are ideally located to meet the following criteria:

- Close proximity to a dedicated rail freight line and the major road network
- Land zoned for industrial purposes
- Separated from sensitive land uses such as residential
- Within or close to the catchment for which there is a demand.

To this end, the proposed site represents an ideal position for the proposed facility as:

- It is adjacent to existing industrial areas, and is in a central location relative to major freight markets in the west and south west of Sydney
- It is located near to the South West Growth Centre
- It is in proximity to major road and rail freight corridors (SSFL, M5 Motorway, near the M7 Motorway and Hume Highway)
- It is situated in close proximity to the SSFL, a dedicated freight rail line providing a direct link to the interstate freight network and a direct link to Port Botany;
- There is a direct intersection linking the adjacent Moorebank Avenue to the M5 Motorway
- Buffers are provided between the facility and nearby residential areas
- It is within the catchment for which there is a demand, resulting in shorter average delivery distances and more efficient use of road transport
- It is located a sufficient distance from Port Botany to make rail a commercially viable alternative to road for movements to and from Port Botany
- It is long enough to handle interstate freight trains, which can be 1,500 to 1,800 m long
- It is large enough to handle the number of containers expected and has the space required for the associated warehousing, which will increase the efficiency of the

freight service offered and therefore increases the attractiveness of the terminal and its potential to get more freight onto the rail network.

The location has also been identified in both state and federal strategies as the best, and only location for an IMT to service a defined catchment in South-Western Sydney.

Further the Proposal site has been granted Concept Plan Approval, for the development of an IMT and therefore is considered suitable for the development.

Other potential IMT locations across Sydney have been proposed at Eastern Creek, Badgerys Creek, in north-west Sydney, and St Marys in western Sydney. Both the Eastern Creek and Badgerys Creek projects are currently largely undefined and are unlikely to be developed in the near future; requiring significant investment in transport infrastructure to connect to the rail network (MIC, 2013). A preliminary environmental assessment was issued to the NSW DP&E for an intermodal terminal and rail link, with an operating capacity of 301,000 TEU throughout at Forresters Road, St. Marys. Given the rapid growth rate in container throughput at Port Botany these IMTs, if developed, would not alone solve the short-medium term freight demand by rail.

The freight catchment to be serviced by the Proposal is different to the freight catchment that the proposed Eastern Creek IMT would service and would therefore not alleviate the need for an IMT in Moorebank.

3.3.3 Proposal design options

Design options considered at the commencement of assessment for the Proposal, which resulted in changes to the MPW Concept EIS site layout, include the following:

- Co-location of the IMEX and Interstate terminals
- Layout of warehousing area.

Design refinements made throughout the assessment of the Proposal are discussed in Section 3.3.4.

IMEX and interstate terminals

The final layout for the MPW site in the Response to Submissions Report included separate IMEX and interstate terminals along the eastern boundary of the site. This design has been updated to now incorporate both IMEX and interstate movements within the one multi-purpose terminal (the IMT facility). This co-location of facilities would result in space savings on site and increased efficiency of freight handling.

The location of the IMT facility within the broader MPW site was determined based on the location of the Rail link and proximity to Moorebank Avenue to enable access to and from the site by rail and road. As such, the IMT facility occupies the eastern portion of the site. This portion of the MPW site also represents the area with greatest distance to the nearest residential receivers, minimising impacts to residential areas to the greatest extent possible.

Locating the IMT facility in the south eastern portion of the site was considered as this was the originally proposed location of the IMEX terminal, however this location did not provide suitable area to accommodate interstate and intrastate trains (1500 m to 1800 m in length) without compromising access on the Rail link, i.e. trains to be accommodated wholly within the IMT rather than congesting the Rail link. As a result, it was determined to locate the IMT facility in the north eastern portion of the site.

Warehousing

The final layout for the MPW site in the Response to Submissions Report included 150,000m² GFA of warehousing in the northern portion of the site with separate truck loading bays and queuing for the interstate terminal located to the south of this

warehousing area. A more detailed analysis of the site constraints has been undertaken which determined that, as a result of innovative design improvements and a greater understanding of operational practices, a greater proportion of warehousing can be accommodated within this northern area. As a result the Proposal includes warehousing comprising 215,000m² GFA within the northern part of the MPW site (i.e. the Proposal site). In addition to this, truck loading areas would now be more efficiently integrated into warehousing operations and therefore are provided adjacent to each individual warehouse. Further, truck queuing areas would be integrated into the IMT facility and located within an area on the northern part of the Proposal site (north of Bapaume Road).

3.3.4 Design refinement

Since the MPW Concept Approval and MPW EPBC Approval, a number of other design refinements have been undertaken for the Proposal. Design changes have been undertaken in response to advice and consultation with government authorities, service providers and the community, as well as additional data from more detailed environmental and social investigations. Where a refinement was likely to have wider implications, or where a range of constraints and alternatives was considered, design refinements were identified in the context of environmental considerations.

A summary of key design refinements, undertaken to address concerns, is provided in Section 6 of this EIS.

4 PROJECT DESCRIPTION

SIMTA are seeking approval under Part 4, Division 4.1 of the EP&A Act for the construction and operation of an intermodal terminal (IMT) facility, a Rail link connection and associated warehousing, in accordance with the MPW Concept Approval (SSD 5066). This section of the EIS provides a detailed description of the works for which approval is sought (the Proposal).

Included within this section is a detailed description of the built form of the Proposal, the indicative construction methodology, and the operational procedures to be implemented for the Proposal. This section should be read in conjunction with the following design drawings, statements and plans:

- Architectural Drawings prepared by Reid Campbell (refer to Appendix D of this EIS)
- Landscape Design Statement and Plans prepared by Ground Ink (refer to Appendix E of this EIS)
- Rail Access Report and Rail Engineering Drawings prepared by AECOM (refer to Appendix F of this EIS)
- Utilities Strategy Report prepared by AECOM and Building Services Strategy Brief prepared by Arcadis (refer to Appendix H of this EIS)
- Preliminary Construction Environmental Management Plan prepared by Arcadis (refer to Appendix I of this EIS)
- Preliminary Construction Works Drawings prepared by Arcadis (refer to Appendix J of this EIS)
- Stormwater and Flooding Impact Assessment and Drainage Design Drawings prepared by Arcadis (refer to Appendix R of this EIS).

The design of the Proposal has been prepared to progress and further refine the design identified in the MPW Concept Approval. The design for the Proposal has been altered and updated based on consultation undertaken for the Proposal with a view to maximising efficiency of the site operations, and reducing the overall impact of the Proposal on the environment (refer to Sections 6 to 20 of this EIS for further information).

4.1 Proposal overview

The Proposal involves the construction and operation of an IMT facility, warehousing and a Rail link connection, comprising the following key components:

- IMT facility, including:
 - Infrastructure to support a container freight throughput volume of 500,000 twenty-foot equivalent units (TEUs) per annum
 - Installation of nine rail sidings
 - Truck processing, holding and loading areas
 - Container storage area serviced by manual handling equipment
 - Administration facility, engineer's workshop and associated car parking
- Rail link connection – linking the sidings within the IMT facility to the Rail link (which would be constructed as part of the MPE Project)
- Warehousing area – construction of 215,000 m² Gross Floor Area (GFA) of warehousing, with warehouses ranging in size from 4,000 m² to 71,000 m². Included within the warehousing area would be ancillary offices, truck and light vehicle parking, associated warehouse access roads.
- Freight village – construction and operation of approximately 800 m² of retail premises, with access from the internal road

- Upgraded intersection on Moorebank Avenue, which would provide site access and egress
- Ancillary works – including vegetation clearing, earth works (including the importation of 1,600,000 m³ fill), utilities installation/connection, signage and landscaping.

The Proposal would operate 24 hours a day, seven days a week. The footprint and operational layout of the Proposal is shown on Figure 4-1.

The IMT facility and Rail link connection would operate 24 hours per day and seven days per week. The warehouses would generally be operational for 18 hours a day, and five to seven days a week and the operational hours of the freight village would be 7am to 6pm, five to seven days per week.

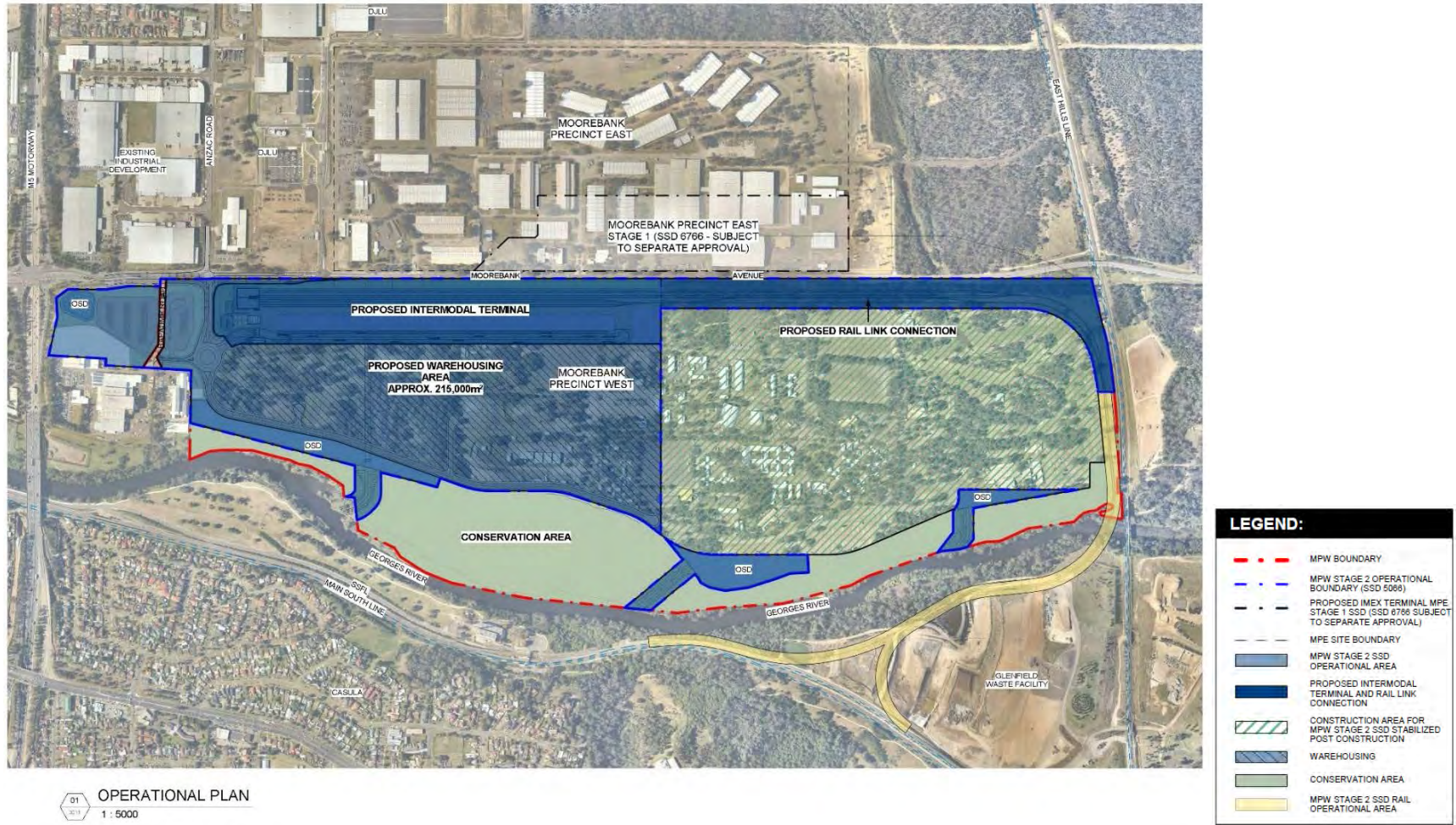


Figure 4-1: Proposal overview

4.1.1 Property ownership and rights

The MPW site, which includes the Proposal site, is owned by the Commonwealth and leased by SIMTA.

The construction and operation of the Rail link connection (including associated utilities and infrastructure) would require works to be undertaken on the Rail link, which is an asset owned by the Commonwealth and operated by SIMTA.

Necessary property rights would be established for the construction and operation of the Proposal.

4.2 Built form

The key built form elements of the Proposal include the IMT facility, the Rail link connection and the warehousing area. In addition to these primary elements the Proposal includes a number of ancillary works, namely:

- Signage
- Lighting
- Landscaping
- Water management works
- Utilities
- Parking.

These elements are described in detail in the following sections. Reference should be made to the design drawings, statements and plans listed above.

4.2.1 Intermodal terminal facility

The layout of the IMT facility is shown on Figure 4-2. The operational areas of the IMT facility consist of primary and secondary container loading/unloading areas (rail and road related), container storage areas, engineer's workshop, loco shifter, truck access, processing and holding areas, rail sidings, associated infrastructure and an administration area. The built form to be developed in these areas is described in further detail below.

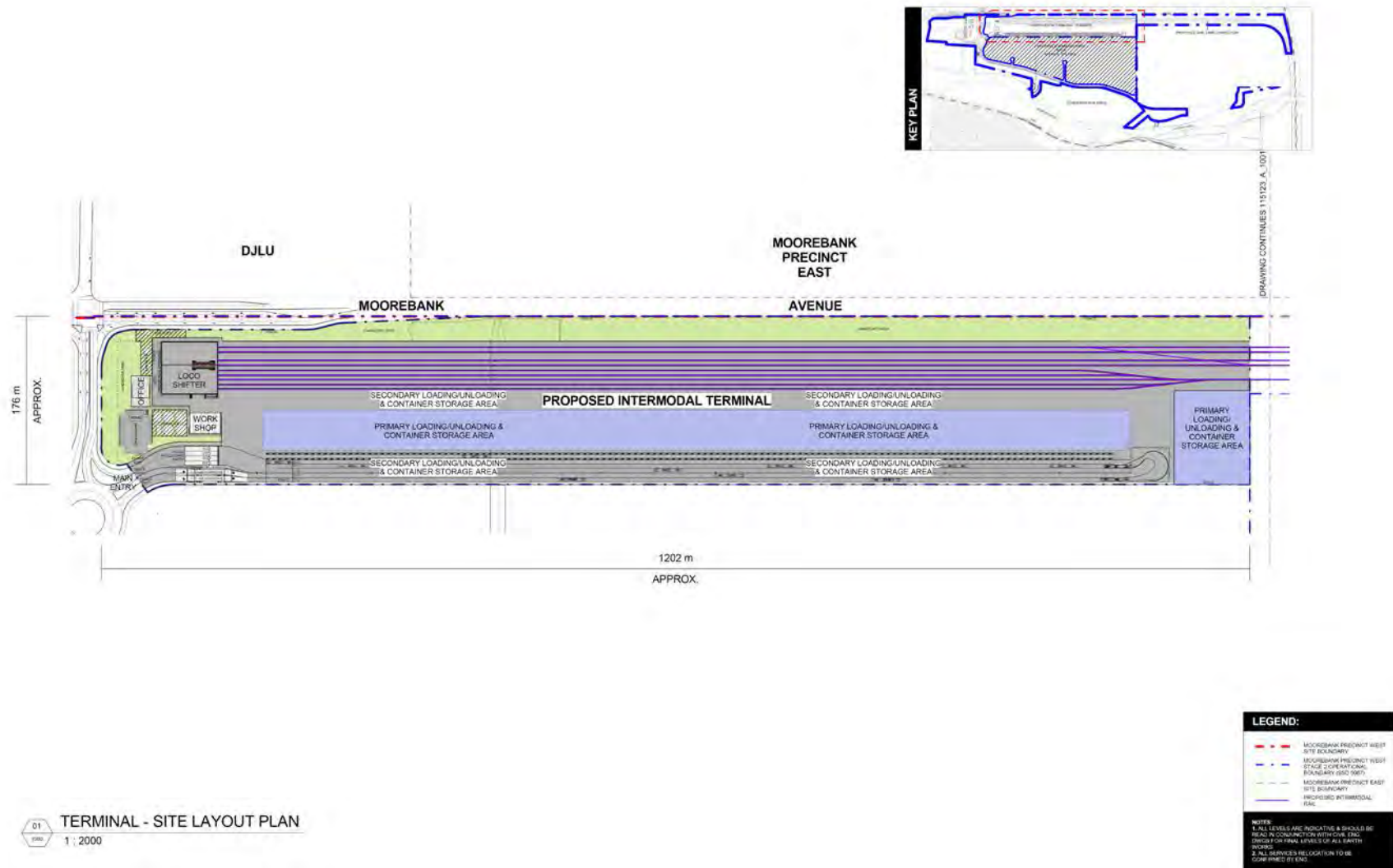


Figure 4-2: IMT facility layout

Container handling and storage

A designated primary loading, unloading and container storage area is located on the western side of the proposed rail sidings. Within the container storage areas, containers would be stacked up to five high, equalling a total height of approximately 13 m. Containers would generally be arranged in stacks four containers wide by six deep, with space between the stacks to allow for manoeuvring of container handling equipment.

Truck access, processing and holding areas

Truck access to the Proposal site would be via the upgraded site entry at the intersection of Moorebank Avenue and Anzac Road. Trucks would turn into the site entry at the signalised intersection of Moorebank Avenue/Anzac Road, and proceed to the IMT facility processing gates via a proposed round-about, constructed within the Proposal site. Trucks arriving at their designated time would proceed immediately to the IMT facility.

There would be a four lane road entry into the IMT facility which would connect to the truck container loading area along the western portion of the facility. A turning area would be provided for vehicles at the southern end of the terminal to enable them to exit the facility via the two lane weighbridges and exit gates at the northern end.

A truck waiting area would be established to the north of the IMT facility to provide temporary parking for trucks arriving at the IMT facility prior to their designated arrival time. Trucks accessing the temporary waiting area would turn right at the site round-about and right into the parking area. An emergency truck storage area and driver facilities would be established to the north of the IMT facility and Bapaume Road. This area would be used in the event of a significant incident on the M5 Motorway or surrounding road network that results in trucks already within the IMT facility, or on route to the Proposal are unable to leave the IMT facility. Trucks accessing the emergency storage would also turn right from the site entry, passing Bapaume Road and the ABB site entry.

Rail sidings and associated infrastructure

Nine rail sidings would extend along the eastern length of the IMT facility from the Rail link connection. Five would be 1,800 m long entry sidings and the remaining four would be 900 m long container handling sidings, refer to Figure 4-3. These rail sidings provide an area for loading/unloading of trains accessing the IMT facility from the Rail link connection, which connects to the Rail link and ultimately the SSFL.

The four eastern-most rail sidings are 1,800 m in length and are referred to as the entry sidings. These sidings would be used to break down and shunt the trains as they enter the terminal and for rail maintenance. The five western-most rail sidings are 900 m in length and are referred to as the handling sidings. Trains over 900 m would be broken down on the entry sidings, using locomotives to shunt the wagons between the sidings, and into the handling sidings. Trains of 900 m in length would directly enter the handling sidings. Once in the handling sidings the trains would be unloaded and reloaded with container handling equipment.

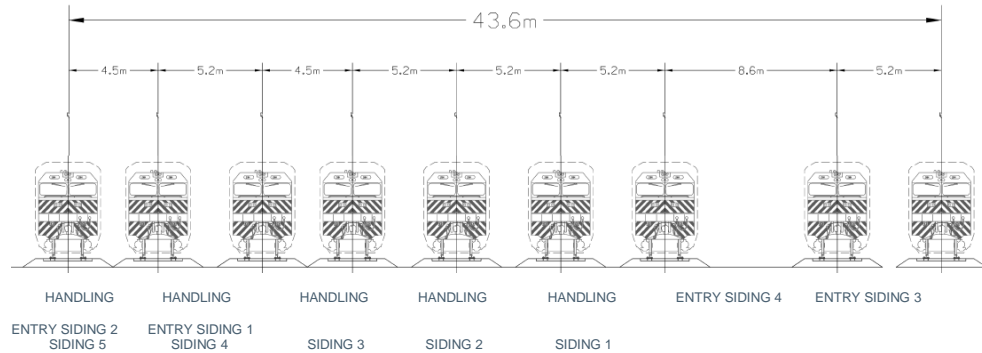


Figure 4-3: Rail link connection access tracks

A locomotive shifter and locomotive refuelling facilities would be located at the northern end of the rail sidings. An example of the type of locomotive shifter that would be installed is provided in Figure 4-4. The locomotive shifter would facilitate for locomotives to transfer between the nine rail sidings. Locomotives would enter the locomotive shifter and then the shifter would mechanically shift (via a support pad) the locomotive across to align with another rail siding. Once in position the locomotive would exit the locomotive shifter and transfer to one of the rail sidings.

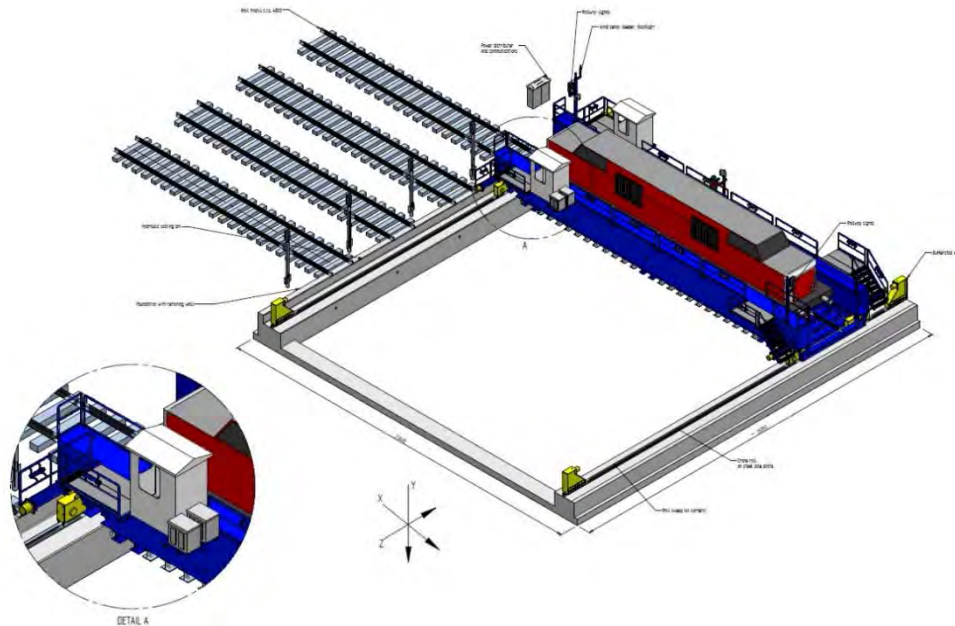


Figure 4-4: Example of locomotive shifter (indicative only – specification subject to further investigation)

A mobile refuelling station would be located within the IMT facility, and would be generally stored adjacent to the locomotive shifter. The refuelling station would consist of a self banded container with a fuel tank inside. An example of the mobile refuelling tank is provided in Figure 4-5. The mobile refuelling tank would store diesel fuel (class C1 combustible liquid), with a maximum capacity of approximately 60,000 litres. When empty the container could be relocated around the IMT facility and, as required, transported off site by truck or train.

The mobile refuelling tank would be used for the purposes of refuelling locomotives when stationary on the locomotive shifter.



Figure 4-5: Self-bunded, mobile refuelling tank example (indicative only – specification subject to further investigation)

Wagon inspection and maintenance would occur on the three eastern-most entry sidings, allowing minor repairs to be undertaken on site.

Administration area

Light vehicles would also use the proposed site access off Moorebank Avenue into the Proposal site to access the IMT facility, Rail link connection, warehousing and the administration area (located within the IMT facility).

The administration area would comprise an office area of approximately 590 m², an engineer's workshop of approximately 785 m², and a light vehicle parking area. The office would accommodate IMT facility office staff, truck and train drivers and include a reception, meeting rooms, offices, amenities, lunch room and an outdoor area. The office would have a maximum height of approximately 5.2 m. The workshop comprises an area for the maintenance of trucks associated with the IMT facility. The workshop would have a maximum height of approximately 21 m.

4.2.2 Rail link connection

The Rail Access Report and Rail Engineering Drawings prepared by AECOM show the design of the Rail link, and have been included in Appendix F.

A summary of the alignment for the Rail link connection and individual elements including crossings and access tracks is provided below.

Rail alignment

The Rail link connection would join the proposed IMT facility to the Rail link proposed as part of the MPE Stage 1 Proposal. From the IMT facility, the Rail link connection (initially comprising nine sidings) would travel in a southerly direction for the extent of the IMT facility reducing to five sidings, before reducing to two sidings at the southern end of the Proposal where it turns west near the East Hills Rail Corridor to join up with the Rail link.

Access tracks

Access tracks would be constructed to facilitate on-going maintenance of the Rail link connection and would be a mix of pedestrian and vehicular. Five pedestrian access tracks would be provided between the following rail sidings:

- Handling sidings 4 and 3
- Handling sidings 2 and 1
- Handling siding 1 and entry siding 4
- Entry sidings 4 and 3

- Entry sidings 2 and 1.

Two vehicle access roads would be provided, one along the eastern side adjacent to Moorebank Avenue, and one between entry sidings 2 and 3 and would extend for the length of the Rail link connection. The vehicular access roads would allow safe access for vehicles while locomotives are stationary on the sidings.

Access to the vehicle access roads would be via the main site access into the northern end of the IMT facility.

4.2.3 Warehousing

Warehouses within the warehousing area would range in size from 4,000 m² to 71,000 m², and the total area of all combined warehouses would be approximately 215,000 m². The layout of the warehouses are shown in Figure 4-1.

The warehouses would be up to 21 m in height and of varying size and design. The Proposal would also include some internal fitout of the warehouses, namely the installation of racking and associated services. The Proposal would seek approval for the construction of these warehouses and also the operation of these warehouses by future tenants.

Each individual warehouse would consist of the following:

- A container storage area
- Office and administration facilities
- Amenities
- Car parking
- Truck loading/unloading docks
- Internal parking for pick-up and delivery vehicles (PUD)
- Specialised sortation and conveyor equipment
- Racking for goods storage
- Hardstand areas that provide trailer parking spaces, external PUD parking spaces, vehicle manoeuvring areas and access to the main internal site road
- Signage for business identification purposes.

Associated with this key built form is a number of ancillary works which include signage, lighting, vegetation removal and landscaping, water management works and utilities.

The Proposal seeks approval for the provision of seven warehouses, all located west of the IMT facility and east of the internal road. The following table outlines the key details relating to each proposed warehouses to be developed on the Proposal site.

Table 4-1: New warehouses seeking approval as part of the Proposal

Warehouse no.	General location	Size (m ²)	Office (m ²)	Car parking spaces
1A	Northern-most warehouse, located directly east of the proposed main site entry roundabout.	21,000	1,000	95
2A	Directly south of Warehouse 1A, north of the open stormwater channel and adjacent to the IMT facility.	21,000	1,000	95
1B	Directly south of the open stormwater channel and Warehouse 2A, and adjacent to the IMT facility	38,000	1,000	152

Warehouse no.	General location	Size (m ²)	Office (m ²)	Car parking spaces
2B	Directly south of Warehouse 1B and adjacent to the IMT facility.	30,000	1,000	125
3B	Directly west of Warehouse 2B.	30,000	1,000	125
1C	Directly south of Warehouse 2B and adjacent to the IMT facility.	71,000	2,000	287
2C	In the south western corner of the operational area, directly west of Warehouse 1C.	4,000	300	29

4.2.4 Freight village (Precinct Amenities)

A freight village including amenities for the precinct would be located within the warehousing area, directly west of warehouse 2A and east of the internal road. This precinct amenities area would occupy approximately 800 m² of GFA and would generally comprise of the following:

- Café
- Food services
- Commercial premises
- Outdoor area with seating
- Landscaped area along the internal road boundary
- Amenities
- Loading dock
- Services area
- Services corridor
- Car parking (25 spaces).

The layout of the freight village area is show in Figure 4-6.

Buildings and structures within the freight village would be up to six metres in height and of varying size and design, as detailed in Section 15.4. The Proposal would also include the internal fitout of these buildings, including utilities and services. The Proposal would seek approval for the construction of this freight village and also the operation of these premises by future tenants.

Associated with this key built form is a number of ancillary works, which include materials and finishes, signage, lighting, vegetation removal and landscaping, water management works and utilities, which have been discussed in Section 4.2.8 of this EIS.

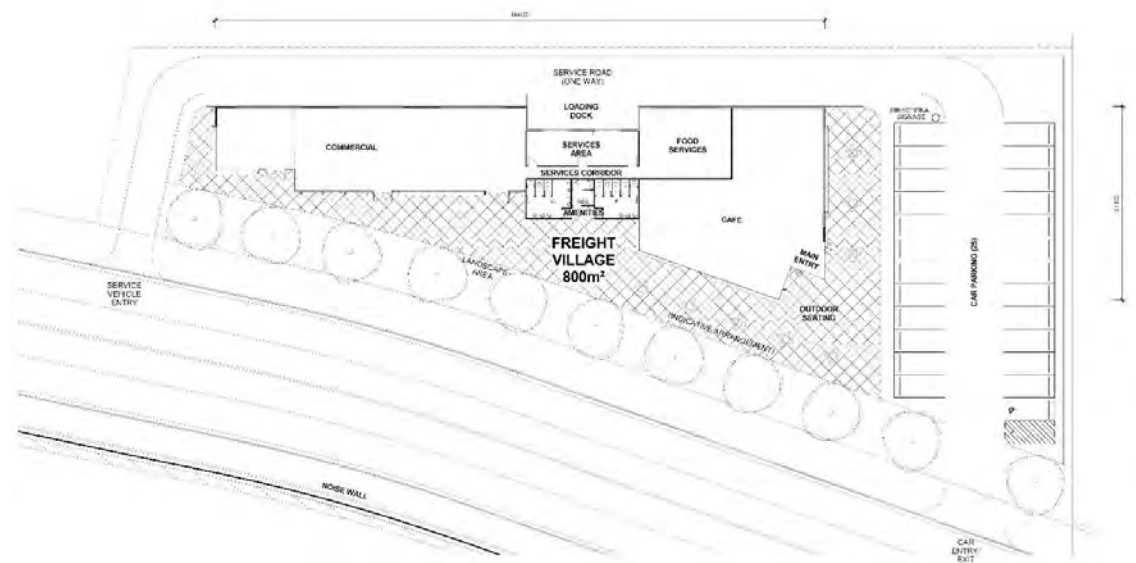


Figure 4-6: Freight village

4.2.5 Moorebank Avenue intersection

Modifications to the intersections of Moorebank Avenue/Anzac Road and Moorebank Avenue/Bapaume Road would be required to facilitate the upgrade of the site access to the Proposal site. There would be an overall increase to the footprint of Moorebank Ave as part of these intersection works

The final configuration of the Moorebank Avenue/Anzac Road signalised intersection, which would include the construction of a new access road into the Proposal site, would be as follows:

- New access road:
 - One left turning slip lane onto Moorebank Avenue (northbound)
 - One shared through/right lane onto Anzac Road (eastbound) or Moorebank Avenue (southbound)
- Moorebank Avenue (southbound):
 - One left turning slip lane onto Anzac Road (eastbound)
 - Two through lanes continuing on Moorebank Avenue (southbound)
 - Two right turning lanes onto the new access road (westbound)
- Anzac Road:
 - Two right turning lanes onto Moorebank Avenue (northbound)
 - One through lane onto the new access road (westbound)
 - One left turning slip lane onto Moorebank Avenue (southbound)
- Moorebank Avenue (northbound):
 - Two right turning lanes onto Anzac Road (eastbound)
 - Two through lanes continuing on Moorebank Avenue (northbound)
 - One left turning slip lane onto the new access road (westbound).

Refer to Appendix G of this EIS for intersection layout details.

This intersection would have the capacity to accommodate A-Double vehicles, i.e. vehicles capable of moving two 40 foot containers. The final configuration of the Moorebank Avenue/Bapaume Road intersection would be as follows:

- Moorebank Avenue would be reconfigured for no right turn onto Bapaume Road from Moorebank Avenue
- Bapaume Road would be reconfigured for no right turn onto Moorebank Avenue from Bapaume Road
- The reconfigured Bapaume Road would allow the following movements:
 - Inbound traffic to the ABB site would be directed to the new Moorebank Avenue/Anzac Road intersection (main MPW site entrance)
 - Northbound traffic out of the ABB site would use Bapaume Road or the new Moorebank Avenue/Anzac Road intersection (main MPW site entrance)
 - Southbound traffic out of the ABB site would use the new Moorebank Avenue/Anzac Road intersection (main MPW site entrance).

The Architectural Drawings (refer to Appendix D of this EIS) include details on the intersections included in the Proposal.

4.2.6 Vehicle access

The main access (entrance and exit) to the Proposal site for heavy and light vehicles would be via the new site access off Moorebank Avenue (refer Figure 4-1). From the Moorebank Avenue/Anzac Road intersection vehicles would access the site via a two-lane roundabout that has been designed to accommodate vehicles up to double road trains. The roundabout would provide access to the IMT facility, warehousing area, Rail link connection, and the ABB site from Moorebank Avenue. The main site exit would include two lanes which would facilitate trucks and light vehicles exiting the Proposal site and the ABB site onto Moorebank Avenue.

Trucks accessing the warehousing area of the Proposal site would continue from the roundabout to the internal road on the western perimeter of the site and onto the warehouse access roads to the warehousing free of processing. Light vehicles accessing the warehousing area would similarly use the roundabout and internal access road, however a separate entrance would be provided to the light vehicle and semi-rigid vehicle parking facilities for each warehouse. Vehicle movements would be managed to minimise reversing.

The main entrance to the IMT facility would be controlled through the use of truck processing gates. Truck processing gates would include gantry structures, which would be located over the extent of the IMT facility entrance and exit lanes. Trucks arriving prior to their designated time would proceed around the roundabout to the truck waiting area, to the north of the IMT facility. Once the designated arrival time is reached the truck would proceed from the waiting area, through the roundabout to the IMT facility gates for processing.

An emergency truck storage area and truck queuing area would be provided in the northern portion of the site, north of the IMT facility entrance. This area would be accessed by taking a right turn at the roundabout and proceeding past Bapaume Avenue.

4.2.7 Urban design

Urban design principles were developed for the MPW site as part of the concept master planning work undertaken by Parsons Brinckerhoff and Sutera in 2012, and were summarised in the MPW Concept EIS as follows:

- Creating a high quality, efficient and attractive development which allows for easy way-finding opportunities while also addressing both its industrial and residential neighbours
- Promoting a safe working environment by separating different uses on the Project site and providing different entry points for public, staff vehicles, trucks and rail

- Encouraging environmentally sustainable design and where possible minimising impacts on both the environment and the public
- Allowing flexibility for future growth and staging of terminal operations and warehousing/commercial endeavours to maximise the Project site's potential.

The MPW Concept EIS also identified that the building design would be consistent with controls outlined in the Liverpool Development Control Plan 2008, Part 7 Development in Industrial Areas (LCC 2008). These controls include:

- Facade treatment - adopting a contemporary architectural appearance and use of architectural elements to articulate facades
- Materials - use of quality materials such as brick, glass and steel to construct the facades and masonry material for construction of factory units or similar
- Colours – choice of finishes and colours which limit the amount of contrast with the surrounding landscape with the preferred use of muted colours
- Building design, incorporating considerations such as location of administration buildings at the front
- Lighting to be provided in the car park and external entry paths, with consideration given to light spill impacts on the amenity of adjoining residents.

Additional planning controls identified in the MPW Concept EIS as relevant to the MPW site include those from the Liverpool Local Environmental Plan 2008 (Liverpool LEP) related to height, floor space ratios and setbacks as follows:

- Building heights within the warehousing precinct, the IMT facility and the associated administration facilities would be restricted to a maximum of 21 m
- A floor space ratio of 1:1 would apply to the warehousing area
- The western area of the Proposal site would consist of the conservation area, which would be landscaped to provide a visual buffer along this boundary
- An 18 m building setback would apply along the Moorebank Avenue (eastern) boundary and a 7 m building setback along the other site boundaries

These built form controls would be incorporated into the design for the Proposal.

Built form controls included in the amended Liverpool LEP (PP_2012_LPOOL_004_00), regarding the rezoning of the MPW site, would also be considered.

The IMT facility, warehouses and structures included in the Proposal would be of a high design quality. The building colours and finishes would be compatible and blend with the surrounding land uses, including non-reflective colours. A variety of materials would be incorporated, including glass, colourbond and painted concrete. The intention is that all buildings, where possible, be provided a comprehensive landscape setting that integrates with the surrounding landscape.

A schedule of the indicative materials and colour palette for the proposed buildings and other structures is provided in the Architectural Drawings (refer to Appendix D of this EIS).

4.2.8 Ancillary works

Water management works

Stormwater Drainage Design Drawings have been prepared by Arcadis and are included in Appendix R. These plans show the layout of the surface water management systems that would be installed on site as part of the Proposal.

The key water management systems included in the Proposal comprise:

- Existing site run-off and water flowing through the site from surrounding properties

- Proposal site run-off.

A summary of these water management systems is provided below.

Existing site run-off

The Proposal site is generally flat to gently undulating, with vegetated banks on both sides of the Georges River. The eastern floodplain of the river (part of the Proposal site) has a terraced area at a relatively low elevation. The ground levels then rise steadily up towards the eastern site boundary.

A small portion of the south-eastern part of the Proposal site, where the Rail link connection would be located, drains to Anzac Creek, which is an ephemeral tributary of the Georges River with a catchment of 10.6 km². The creek flows in a north-easterly direction and ultimately drains to Lake Moore on the Georges River, some three kilometres downstream of the Proposal site. In the south-west corner of the Proposal site a number of linked ponds within the existing golf course form the headwaters of Anzac Creek.

Stormwater on the existing site is generally conveyed via pits, pipes and two open channels (one vegetated, one concrete-lined) in a north-westerly direction across the site and discharged into the Georges River. Only one of the existing stormwater pipe networks discharges into Anzac Creek.

Discharges within the south-eastern portion of the site, i.e. within the golf course, drain via open channels to road culverts underneath Moorebank Avenue, which subsequently discharge into Anzac Creek.

A number of areas surrounding the Proposal site also drain into the site through open channels, box culverts, natural drainage lines and overland flows during differing rainfall events. These areas include:

- DJLU site, east of the Proposal site
- MPE site, east of the Proposal site
- M5 Motorway, north of the Proposal site
- Moorebank Business Park, north-east of the Proposal site
- ABB site, north of the Proposal site.

Proposal site run-off

The Proposal would include the installation of stormwater, drainage and flooding infrastructure across the Proposal site. Key features of this infrastructure would include:

- Three on-site detention (OSD) basins located along the western boundary of the construction footprint adjacent to the conservation area, the purpose of which are to manage water volumes being discharged into the Georges River and to reduce sediment in the water. In addition, there is one existing OSD located in the northern portion of the site which would remain (refer to Figure 4-1)
- An open channel traversing the site from east to west
- Stormwater infrastructure (e.g. pits and pipes) to collect and transport stormwater runoff from the Proposal site and into nominated detention basins and discharge points
- Stormwater drain(s) to discharge stormwater runoff from the Proposal site to discharge points along the Georges River.

Refer to the Stormwater and Drainage impact assessment and design drawings (refer to Appendix R of this EIS) for additional details.

Vegetation removal and landscaping

All vegetation on the Proposal site would be removed prior to or during the site preparation phase of construction for the Proposal (as discussed in Section 4.3 of this EIS).

Following construction activities, any area not forming part of the operational footprint would be appropriately rehabilitated. Cut and fill batters associated with the construction would be stabilised to minimise the potential for ongoing erosion. The Rail link connection would remain cleared through on-going maintenance undertaken during the operation of the Proposal.

Landscaping would be undertaken on the site as part of the Proposal. The Landscape Design Statement and Plans (Appendix E) provide details on the key landscaping features that would be included as part of the Proposal site. Landscaping would be included on all boundaries of the Proposal site.

Landscaping along Moorebank Avenue would include extensive tree and shrub planting on road frontages that would provide visual relief from the industrial appearance of the warehousing and IMT facility, with a layered approach along the streetscape. Landscaping would also be provided around the northern and southern boundaries of the Proposal site. This landscaping would include a mix of shrubs and turfed areas.

Tree plantings would be provided around the warehousing and within the carparking areas.

The landscape design for the Proposal aims to integrate the site into the broader environment with the following:

- Use of species that are local to the area, hardy and easy to maintain, including those recommended by the Liverpool City Council DCP.
- Use of trees within the site to provide a uniform canopy cover within vegetated areas
- Use of local species as understory planting to support and enhance local habitat values
- Use (where reasonable and feasible) of seeds collected within the local area for planting to reinforce the genetic integrity of the region.

Utilities

The Proposal site has historically been connected to nearby public utility networks through Commonwealth owned assets. These connections would be disconnected and redundant infrastructure would be decommissioned as part of the Early Works. Utilities installation across the Proposal site and in the immediate surrounds would be completed as part of the Proposal. As identified in the Utilities Strategy Report and Building Service Strategy Brief (Appendix H) the IMT facility, Rail link connection and warehouses would connect to a number of utilities as shown in Table 4-2. Consultation has been undertaken with all relevant service and infrastructure providers as discussed in Section 6 of this EIS.

Table 4-2: Proposed utility connections

Utility	Proposed connection point	Route to site
Water	Water main north of Anzac Road on Moorebank Avenue	Within the road reserve of Moorebank Avenue

Utility	Proposed connection point	Route to site
Sewer	Moorebank Avenue sewer main near Bapaume Road	New sewer main along Moorebank Avenue to the existing connection near Bapaume Road.
Electricity	Anzac Village Substation	Two new 11 kilovolt feeders along the road reserves of Anzac Road and Moorebank Avenue each capable of providing 7 MVA to meet demand and provide redundancy.
Communications	Existing assets along Moorebank Avenue and Anzac Road	Connection from site to Moorebank Avenue.
Natural gas	Existing assets along Moorebank Avenue	Connection from site to Moorebank Avenue.

The Utilities Strategy Report and Building Service Strategy Brief (Appendix H) provide further discussions on the demand requirements, proposed supply network and the future works plan proposed for the majority of these utilities connections. It should be noted that no additional gas demand is expected from the Proposal.

The Proposal includes the installation of a private sewer main on the site connecting, via an underground sewer pipe, to the existing Sydney Water sewer connection adjacent to the intersection between Moorebank Avenue and Bapaume Road. The Proposal also includes the construction of private sewer pumping infrastructure. The specific location and sizing of this private pumping infrastructure would be subject to confirmation with Sydney Water during detailed design.

As discussed the Proposal would involve works on, and adjacent to, Moorebank Avenue for the purposes of site access, drainage and signalling and intersection upgrades. Further details on the works associated with these impacts is provided within the Utilities Strategy Report and Building Service Strategy Brief (refer to Appendix H of this EIS).

Lighting

Lighting would be provided throughout the entire operational footprint to allow for 24 hour operations. Lighting design is provided within the Light Spill Study Report prepared by Arcadis (Appendix T). All lighting has been designed in accordance with *AS/NZS 1680.5:2012 Australian and New Zealand Interior and workplace, Part 5: Outdoor workplace lighting* and *AS 4282 - 1997 Control of the obtrusive effects of outdoor lighting*.

The main lighting for the Proposal would include pole lighting which would be a maximum of approximately 21 m, with heights varying subject to their location within the site. The lighting specification has yet to be finalised however it is envisaged that lighting would comprise of directional flood lighting tilted to focus on the operational areas included within the IMT facility and warehousing area. The lighting along the proposed internal road would consist of traditional road lighting fixtures with side throw

to maximise the light distribution along the Proposal site and minimise backwards light spill.

Fencing and noise wall

A palisade security fence would be installed along the eastern boundary of the Proposal site, fronting Moorebank Avenue. An example of the fence is provided in Figure 4-7 (refer to the Architectural Drawings at Appendix D and Landscape Design Plans at Appendix E for further details). This fence would be integrated into the landscaping proposed for the boundaries of the site.

Chain link security fencing would be installed on all four boundaries (north, east, south and west) to the Proposal site.

In addition, a noise wall approximately five metres high would be installed along part of the western boundary of the site, refer to Section 8 and Appendix N of this EIS for additional detail.



Figure 4-7: Palisade security fence example

Signage

A number of illuminated signs would be located at relevant access locations and within the Proposal site. These signs would be for the purposes of way-finding and access to/from the IMT facility, warehousing area and freight village. A Signage Strategy Plan has been prepared for site identification and directional signage and is included within the *Architectural Drawings* (refer to Appendix D of this EIS). A summary of the type of signs that would be included within the site is provided in Table 4-3.

Table 4-3 Signage details

Signage type	Maximum height (m)	General locations
Type 1 - Street entry signage	6	Main site entrance off Moorebank Avenue
Type 2 - Tenant identification signage and IMT facility signage	5	IMT facility entrance and warehouse entrances along the internal road
Type 3 – Tenant directional signage	3	Within the warehousing area

An illuminated variable message sign (VMS) would be located at the Proposal site entrance and would be used during operation. The size and exact location would be verified during detailed design.

Additional signage necessary for the operation of the IMT facility would also be included within the site. This may include way-finding, operational guidance or similar.

Subdivision

The agreement undertaken between MIC and SIMTA for the development and operation of the Moorebank Precinct includes a requirement to subdivide the precinct into a number of parcels of land. The subdivision is required as a prerequisite to completion of each stage of the works to allow the land to be subleased for operations.

The creation of lots is a fundamental requirement of the Moorebank Precinct for the following reasons:

- It provides legal boundaries to each lot for future subleasing to individual tenants
- It allows the subleases to be register with a registered subdivision plan
- It allows services to be provided to each lot, e.g. metered power and water.

Further detail regarding the subdivision of the Proposal site is provided in Table 4-4.

Table 4-4: Subdivision of the Proposal site

Existing		Proposed		
Lot No.	DP	Sub lot	General description	Area
100	1049508	5	Precinct western entry and warehousing lot 5	24.45 ha
1	1197707	2	Intermodal terminal lot 2	20.48ha
		6	Warehousing lot 6	22.92 ha
		7	Warehousing lot 7	16.18 ha
		8	Warehousing lot 8	16.14 ha
		9	Warehousing lot 9	14.73 ha
		10	Warehousing lot 10	17.42 ha

A number of private easements are proposed over these lots for the benefit of each lot to maintain access and provide for electrical, water, sewer and telecommunication services. In addition, services corridors within the road verge standard allocation are proposed to remain unutilised to provide access for services authorities in the event each lot should be required to be individually serviced by the authorities in the future. Refer to the Subdivision Plan in Appendix D of this EIS.

Sustainability initiatives

A broad range of technologies exist that could be employed as part of the Proposal to enhance its sustainability performance. As a new facility, the Proposal would strive for a high level of efficiency, and potential measures to further enhance efficiency and implement the principles of Ecological Sustainable Development would be considered at detailed design. ESD and energy efficiency measures and management strategies would also be reviewed and updated as appropriate for incorporation into the Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP), as required. ESD measures that may be considered during detailed design could include:

- Use of alternate fuels in operational machinery (such as LPG or biofuels)
- Use of natural light and ventilation for office spaces
- The procurement of energy efficient equipment for construction and operation

- Water harvesting, including roof water collection on all warehouses
- Re-use of waste water, e.g. for toilet flushing, landscape irrigation and wash-down areas
- Energy efficiency design measures (such as for lighting types and controls, control systems, compressors, variable speed drives for fans/pumps etc)
- Measures to minimise HVAC demand (such as use of natural cooling vents and doors to control air movement, insulation, routine maintenance, and economy cycles that exchange ambient air to help control indoor temperature)
- Installation of energy efficient conveyors and automatic sortation systems
- Use of a warehouse management systems (enabling multi-tasking of mobile equipment, optimising storage locations, and allowing integration of energy management systems and other management systems)
- Review of potential renewable energy sources, such as solar energy, prioritised in accordance with the prioritising the Carbon Management Principles for Emissions Reduction (such that offsetting is considered as a last priority).

4.3 Construction

The section details the construction methodology for the Proposal. The description for the Proposal incorporates the proposed construction activities required for the MPW Concept Modification (detailed in Section 1.4 of this EIS).

4.3.1 Construction methodology overview

Construction of the Proposal would occur over a period of approximately 36 months and would be generally managed in the following areas, being:

- The Intermodal (IMT) terminal facility
- The Rail link connection
- Warehousing
- Southern bulk earthworks area.

The construction footprint for the Proposal is shown in Figure 4-8.

Key construction activities occurring over this time would include:

- Pre-construction stockpiling, including the importation of 400,000 m³ fill
- Establishment of construction compounds for the:
 - Pre-construction stockpiling and bulk earthworks (Earthworks Compound)
 - IMT facility (the IMT Compound) providing car parking, offices, amenities, laydown and storage
 - Rail link connection (the Rail Compound) providing car parking, offices, amenities, laydown and storage
 - Warehouses (Warehouse compounds) providing car parking, offices, amenities, laydown and storage
- Establishment of a temporary batching plant
- Clearing of exotic and native vegetation
- Bulk earthworks to level and raise the site, including the importation of 1,200,000 m³ fill
- Construction of the IMT facility and associated infrastructure
- Construction of the Rail link connection from the IMT facility to the Rail link
- Upgrade of the Moorebank Avenue/Anzac Road intersection and site access, and construction of the internal road network

- Construction of the warehouses and warehouse access roads
- Fit-out of warehousing
- Landscaping and finishing works.

Further detail regarding the construction methodology is provided in the following sections.



Figure 4-8: Construction layout

4.3.2 Construction program and activities

Subject to planning approval, construction of the Proposal is planned to commence in the third quarter of 2017. The total period of construction works for the Proposal is anticipated to be approximately 36 months. The indicative construction program is shown in Table 4-5. The construction works have been divided into seven 'works periods' which are interrelated and also may potentially overlap. Subject to confirmation of construction staging, the order of these construction works periods may shift slightly.

It should be noted that works period A would occur prior to the construction phase of the Proposal, therefore prior to the development of the CEMP.

Table 4-5: Indicative construction program

Construction Phase	2017				2018				2019				2020		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Works period A – Pre-construction stockpiling															
Works period B - Site Preparation Activities															
Works period C – Bulk earthworks, drainage and utilities															
Works period D - Moorebank Avenue intersection works and internal road network															
Works period E – IMT facility and Rail link connection construction															
Works period F – Construction and fit-out of warehousing															
Works period G – Miscellaneous															

Construction Phase	2017				2018				2019				2020		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
structural construction and finishing works															

A summary of the indicative activities included in each of these works periods, which is relevant to the construction of the IMT facility, the Rail link connection and the warehouses, is provided in Table 4-6.

Table 4-6: Works periods and activities

Works period	Activities
Pre-construction fill placement and stockpiling	<ul style="list-style-type: none"> ▪ Establishment of temporary erosion and sediment controls ▪ Minor clearing and grubbing of temporary stockpiling area ▪ Establishment of a temporary stockpiling pad and associated temporary access roads ▪ Installation of temporary construction compound, including amenities and office for bulk earthworks ▪ Importation and placement of approximately 400,000 cubic metres (m³) of clean fill
Site preparation activities	<ul style="list-style-type: none"> ▪ Establishment of construction compound fencing and hoardings ▪ Installation of temporary sediment and erosion control measures ▪ Vegetation clearance ▪ Installation of temporary site offices and amenities ▪ Construction of hardstands for staff parking and laydown areas ▪ Establishment of temporary batch plant sites and installation of batch plant ▪ Construction of access roads, site entry and exit points and security (N.B. preference is to use existing access where practicable) ▪ Set up of construction monitoring equipment
Bulk earthworks, drainage and utilities	<ul style="list-style-type: none"> ▪ Importation, stockpiling and placement of approximately 1,200,000 m³ of imported clean fill (Bulk Earthworks) and raising of the Proposal site to final level ▪ Installation of OSDs ▪ Drainage and utilities installation ▪ Establishment of a concrete batching plant
Moorebank Avenue intersection works and internal road network	<ul style="list-style-type: none"> ▪ Relocation, adjustment and/or protection of all affected utilities, services and signage, as required ▪ Establishment of traffic management devices ▪ Installation of erosion and sediment controls

Works period	Activities
	<ul style="list-style-type: none"> ▪ Stripping and stockpiling of topsoil by excavators and trucks ▪ Drainage works ▪ Progressive stabilisation of exposed areas ▪ Compaction of widening areas ▪ Preparation of new lane surfaces ▪ Forming of new kerbs, gutters, medians and other structures ▪ Construction of asphalt and concrete pavement ▪ Landscaping of exposed earthworks areas ▪ New line marking, lighting and sign posting ▪ Removal of construction traffic management and progressive opening of new works to traffic
<p>IMT facility and Rail link connection construction</p>	<ul style="list-style-type: none"> ▪ Importation, placement and compaction of engineering fill ▪ Compaction of engineering fill ▪ Importation and placement of ballast material ▪ Establish formwork and reinforcement for sidings and bridge infrastructure ▪ Placement of concrete, curing and sealing ▪ Installation of permanent ways and rail systems ▪ Installation of permanent access gates, security gatehouse and permanent fencing ▪ Installation of the connection between the Rail link and the IMT facility sidings ▪ Erection of IMT facility administration building – excavation foundation and floor slab construction, structural wall and roof framework, and roofing ▪ Internal fit-out of building with control room, office, workshops, loco-shifter and staff amenities
<p>Construction and fit-out of warehousing</p>	<ul style="list-style-type: none"> ▪ Establishment of construction compound, temporary fencing/hoardings and temporary sediment and erosion control ▪ Installation of temporary site offices and amenities ▪ Excavation, foundation and floor slab installation ▪ Erection of framework and structural walls ▪ Installation of roof ▪ Internal fit out ▪ Landscaping and surrounds ▪ Preparation of warehouse access road subgrade ▪ Forming of new kerbs, gutters, medians and other structures ▪ Construction of asphalt and concrete pavement ▪ New line marking, lighting and sign posting ▪ Removal of construction traffic management and progressive opening of the internal road and warehouse access roads to traffic

Works period	Activities
Miscellaneous structural construction and finishing works	<ul style="list-style-type: none"> ▪ Decommissioning/demobilisation of the construction area ▪ Commissioning of operational facilities ▪ Landscaping ▪ Rehabilitation of affected areas ▪ Post-construction condition surveys ▪ Removal of construction environmental controls ▪ Removal of construction ancillary facility related traffic signage

4.3.3 Construction methods

It should be noted that all building demolition, hardstand removal, utilities termination and relocation, crushing and remediation of known contamination ‘hot-spots’, and salvage of identified heritage items on the Proposal site would be undertaken as part of the Early Works for the MPW Concept Approval and therefore have not been considered in this EIS. Please refer to Section 1 of this EIS for further detail on works undertaken and approved to be undertaken to date.

Pre-construction stockpiling

Stockpiling would be undertaken on site prior to construction commencing during the following hours:

- 6am to 10pm Monday to Friday
- 7am to 6pm Saturdays.

This pre-construction stockpiling would comprise up to 400,000 m³ of imported fill to be stockpiled in the area shown on Figure 4-8.

Prior to commencement of stockpiling, minor clearing and grubbing would be undertaken and a level earthworks pad for the purposes of stockpiling would be established. A level area would also be established for office and amenities facilities to support the preconstruction stockpiling. Prior to commencement of works onsite, existing security fencing would be repaired as required around the stockpiling and compound site.

Access to the stockpiling site and the stockpiling compound would be via the signalised intersection at Chatham Avenue and Moorebank Avenue. It is estimated that a total of 30 employees would be on site during the pre-construction stockpiling works. Parking for employees would be provided within the compound area.

Stockpiles would not exceed ten metres in height from the final site levels, with battered walls at gradients of 1:3. A temporary sedimentation basin would be established to manage potential water quality impacts resulting from this pre-construction stockpiling. Appropriate erosion and sediment controls and dust suppression measures would be established prior to the commencement of stockpiling on the site.

During this period, all trucks would enter and exit the site via the existing access off Moorebank Avenue onto Chatham Avenue. Ingress and egress to the stockpiling pad would be arranged to minimise reversing of trucks on the stockpiling site.

Site preparation

Prior to the commencement of clearing of the remainder of the construction footprint, erosion and sediment controls would be established. During construction, water and soil management works would involve the early establishment of operational water management swales and the construction of three permanent OSDs, which would require earthworks (refer Figure 4-1). The swales would flow in a westerly direction to the OSDs, which would subsequently discharge into the Georges River. These basins would capture and store surface water prior to being discharged. Sediment fences would be placed around the perimeter of the Proposal site to guide run-off and limit sediment transportation off-site. In addition, the waterbodies within the Proposal site, including the ponds in the southern portion of the site within the golf course that are linked to Anzac Creek and the ponds in the central portion of the site, would be dewatered, dredged and then reclaimed as part of the site preparation works period.

Section 4.2.7 provides a detailed description of the water management works included within the Proposal. Sedimentation and Erosion Control Plans are provided with Stormwater and Drainage Design Drawings (Appendix R).

As discussed in Section 1, vegetation removal required for remediation purposes would be undertaken as part of the Early Works for the MPW Concept Approval. All remaining vegetation would be removed as part of the site preparation activities, once appropriate erosion and sediment controls have been established. Weed-free vegetation would be mulched and stockpiled on site for reuse in landscaping on completion of construction.

It is estimated that approximately 50 workers would be on site during this works period. The preconstruction stockpiling compound would be adjusted at this time to accommodate the additional worker numbers. The IMT compound and the Rail link connection compounds would also be established at this stage. These areas would be levelled and hardstand established to accommodate site sheds, storage areas and parking for staff. The proposed location of the compound is shown in Figure 4-8.

A temporary batch plant for construction of the IMT facility, would be established during this works period. Two locations for the temporary batch plant have been identified, one at the northern extent of the IMT facility and the other at the southern extent. The sites for the temporary batch plant would be cleared and levelled and hardstand established. The silos for the temporary batch plant would be up to 25 metres in height and it is estimated that the plant would be operational on site for a period of approximately 18 months.

Bulk earthworks

The entire Proposal site would be levelled and raised in preparation for the construction of the IMT facility, the Rail link connection, the warehouses and internal roads. Where possible and subject to its suitability, excavated soil would be reused on-site for foundation preparation, levelling works or maintenance access roads.

Excavated soil, which is not considered suitable for re-use on site, would be temporarily stockpiled within the most appropriate construction compound and then transferred off site. All soil to be transferred off site would be tested and deposited at a suitable collection facility based on its determined category.

In total, 1,600,000 m³ of clean fill would be imported to the site in trucks. This would comprise:

- 400,000 m³ of fill imported during the pre-construction stockpiling phase
- 1,200,000 m³ of fill imported during the Bulk earthworks phase

Clean fill would be imported to the site during the following hours:

- 6am to 10pm Monday to Friday
- 7am to 6pm Saturdays.

The fill would be stockpiled across the site, adjacent to areas of placement works to minimise material handling. Stockpiles would not exceed ten metres in height from the final site levels, with battered walls at gradients of 1:3. There is the potential for some oversized boulders to be contained within the imported fill that would require segregation and crushing to make the materials suitable as an engineered fill. Demolition waste stockpiled after the Early Works would also be crushed at the Earthworks Compound during the Bulk earthworks period for potential reuse on the Proposal site. Further detail regarding materials crushing is provided in Section 4.3.7 of this EIS.

The cut to fill operation, comprising excavation, transporting, crushing, screening and spreading of excavated material on site, would be carried out concurrently with the placement of imported fill.

Earthworks plant would be used to spread and compact the material on site. Appropriate erosion and sediment controls, and dust suppression measures would be implemented to manage potential air quality, erosion and sedimentation impacts during the earthworks period.

A summary of the earthworks volumes for the Proposal is provided in Table 4-7.

Table 4-7: Preliminary earthworks volumes

Type	Preliminary volume (m ³)
Volume of top soil strip	294,000
Total cut	540,800
Total fill	2,171,300
Imported fill	1,630,500

It is estimated that a total of 50 workers would be present onsite during this works period. Staff parking would be provided at the site compounds.

Moorebank Avenue and internal road works

Modifications to the intersections of Moorebank Avenue/Anzac Road and Moorebank Avenue/Bapaume Road would be required to facilitate the upgrade of the site access to the Proposal site. These intersection works would allow for turning movements of an A-Double vehicle (i.e. two semitrailers linked by a converter dolly between the two trailers). Details of the proposed intersection configurations are provided in Section 4.2.4 of this EIS.

The construction methodology for upgrades to existing roads and intersections would generally comprise:

- Establish traffic controls
- Strip/demolish existing ground and pavements
- Relocation of services and stormwater (including traffic signals)
- Earthworks/subgrade preparation
- Placement of select and pavement layers
- Kerb and gutter
- Final pavement layers
- Line marking and signage
- Reconfiguration of traffic signals
- Commissioning of signals

- Removal of traffic controls.

The works on Moorebank Avenue would be staged in order to maintain existing traffic flows. This may also require some temporary diversions and works to be undertaken out of hours to minimise disruption. It is proposed that upgrades to the Moorebank Avenue/Anzac Road intersection would be undertaken early in the construction programme and would be complete prior to the closure of the Chatham Avenue/Moorebank Avenue site access.

The internal road network would be constructed during this works period, comprising the main arterial road to the warehousing on the western side of the site and roads to the warehousing. The location of these internal roads is shown on Figure 4-1. Works for the establishment of the internal road network would generally comprise:

- Earthworks/subgrade preparation
- Placement of select and pavement layers
- Kerb and gutter
- Final pavement layers
- Line marking and signage.

It is estimated that approximately 50 workers would be required for these work activities. Parking would be provided within the Proposal site for workers. Access to site parking would be via the Anzac Road/Moorebank Avenue site access.

IMT facility and Rail link connection

The IMT facility and Rail link connection would be constructed along the eastern boundary of the site, refer to Figure 4-1. The IMT facility would consist of an office, engineering workshop, staff amenities, loco-shifter, container storage area, heavy vehicle road, fuel storage area and parking. The Rail link connection would connect the IMT facility to the MPE Stage 1 Rail link.

The construction methodology for the IMT facility and Rail link connection would comprise:

- Importation and placement of engineering fill
- Compaction of engineering fill
- Importation and placement of ballast material
- Establish formwork and reinforcement for sidings and bridge infrastructure
- Placement of concrete, curing and sealing
- Installation of permanent ways and rail systems
- Installation of the connection between the Rail link and the IMT facility sidings

The tie in of the Rail link connection to the MPE Rail link may have to occur outside of standard hours. Consultation with the operator of the Rail link would be undertaken prior to these construction works commencing.

The construction methodology for the IMT facility building would generally comprise:

- Excavation of foundations
- Construction of the floor slab
- Erection of structural wall and roof framework
- Installation of roofing and walls
- Fit-out of building and finishing works
- Landscaping and surrounds.

It is estimated that approximately 350 workers would be on site during this works period. Parking for workers would be provided on the Proposal site within the construction compound and designated parking areas.

Warehousing

Warehouses of varying sizes would be constructed within the area shown on Figure 4-1. All of the warehouses would consist of a container storage area, office and administration facilities, amenities and car parking. The total area of all combined warehouses would be 215,000m².

The construction method for the warehouses would comprise:

- Earthworks, importation and placement of fill
- Installation of stormwater drainage and utilities
- Construction of foundations
- Establishment of floor slabs
- Erection of framework and structural walls
- Installation of roof
- Internal fit out
- Landscaping and surrounds.

It is estimated that up to 120 workers would be on site during this works period (based on the concurrent construction of two warehouses).

4.3.4 Construction workforce and hours

It is anticipated that approximately 570 construction personnel would be required during the peak construction period of the Proposal. This would be during the overlap in works periods C, D, E and F (refer to Table 4-8).

Table 4-8: Construction workforce

Works period	Estimation of personnel
A - Preconstruction stockpiling	30
B - Site preparation	50
C - Bulk earthworks	50
D - Moorebank Avenue and internal road network	50
E - IMT facility and Rail link connection	350
F - Warehousing	120 (construction of two warehouses concurrently, ie 50/warehouse plus 10/warehouse overseeing construction)
G - Miscellaneous finishing and commissioning works	100

Construction works would generally be undertaken during the standard daytime construction working hours, being:

- 7 am to 6 pm Monday to Friday
- 8 am to 1 pm Saturday
- No works on Sunday or Public Holidays.

As discussed above, it is proposed to undertake the importation of clean fill to the site over additional hours as follows:

- 6 am to 10 pm Monday to Friday
- 7 am to 6 pm Saturdays.

Any other construction works undertaken outside of these hours would be undertaken in consultation with relevant authorities. The other works that may be required to be undertaken outside of standard construction hours would include:

- Works associated with the upgrade of the Moorebank Avenue/Anzac Road intersection to minimise impacts on through traffic
- Works associated with the tie-in of the Rail link connection to the Rail link to minimise disruption to services on the Rail link.
- Any works which do not cause noise emissions to be audible at any nearby sensitive receptors or comply with the 'Outside Standard Construction Hours' (refer to Section 8 and Appendix N of this EIS)
- The delivery of materials which is required outside of these hours as requested by Police or other authorities for safety reasons
- Emergency work to avoid the loss of lives, property and/or to prevent environmental harm
- Works required to be undertaken during rail corridor possessions
- Any other work as approved through the Construction Noise and Vibration Management Plan.

4.3.5 Plant and equipment

A range of plant and equipment would be required for the construction of the Proposal. A summary of the indicative plant and equipment likely to be utilised is provided in Table 4-9.

Table 4-9: Indicative construction plant and equipment

Equipment	Construction Works period						
	Pre-construction stockpiling	Site preparation	Bulk earthworks, drainage and utilities	Moorebank Avenue and internal roads	IMT facility and Rail link connection	Warehouse construction and fit out	Buildings and finishing works
Loaders	✓	✓	✓	✓	✓	✓	✓
Static and vibratory rollers, and high energy impact compaction	✓	✓	✓	✓	✓	✓	✓
Mobile cranes		✓			✓	✓	
Excavators	✓	✓	✓	✓	✓	✓	
Excavators with hammers			✓				
Backhoes		✓	✓	✓	✓	✓	✓
Crushing plant		✓	✓				

Equipment	Construction Works period						
	Pre-construction stockpiling	Site preparation	Bulk earthworks, drainage and utilities	Moorebank Avenue and internal roads	IMT facility and Rail link connection	Warehouse construction and fit out	Buildings and finishing works
Concrete batch plant				✓	✓	✓	
Concrete agitators (or similar)				✓	✓	✓	✓
Concrete pumps				✓	✓	✓	✓
Concrete saws				✓	✓	✓	✓
Air compressors			✓	✓	✓	✓	✓
Jackhammers				✓	✓	✓	✓
Dozers		✓	✓	✓			
Mulchers		✓	✓				
20-40 tonne articulated tipper trucks	✓	✓	✓	✓	✓		
Scrapers	✓	✓	✓	✓			
Graders	✓	✓	✓	✓	✓	✓	
Water trucks	✓	✓	✓	✓	✓	✓	✓
Piling rigs					✓	✓	
Forklifts					✓	✓	✓
Small earthmoving equipment				✓	✓	✓	✓
Rail tamper					✓		
Welder					✓	✓	✓

4.3.6 Construction traffic movements

Access to and from the Proposal site would be via Moorebank Avenue. The access points proposed for construction are shown on Figure 4-8.

The estimated material truck movements (includes ingress and egress from the site, i.e. includes both trips) for each of the works periods are presented in Table 4-10. This estimate is the total number of truck movements proposed throughout the 36 month construction period.

Table 4-10: Estimated truck movements by construction phase

Construction periods	Estimated total number of truck movements (round-trip)
Works period A – Pre-construction stockpiling	33,000
Works period B – Site preparation activities	650
Works period C – Bulk earthworks, drainage and utilities	100,000
Works period D – Moorebank Avenue and internal road construction	3,300 (1,800 (Moorebank Ave) + 1,500 for internal roads)
Works period E – IMT facility and rail link connection Construction	11,000
Works period F – Warehouse construction and fit out	3,120 per warehouse
Works period G – Miscellaneous structural construction and finishing works	500

The number of construction vehicle movements (round trip), both heavy (truck) and light (car) to and from the site each weekday for each works period is shown in Table 4-11. As shown in Table 4-11 the number of construction truck movements would range between 6 and 740 movements per day and staff car movements would range between 30 and 350 movements per day. The highest construction related traffic movements would occur in Works periods C (i.e. approximately 740 truck movements and 50 car movements).

Table 4-11: Estimates of daily construction vehicle movements

Construction Period	Daily Vehicle Movements (round-trip)	
	Truck movements	Car movements
Works period A – Pre-construction stockpiling	370	30
Works period B – Site preparation activities	26	50
Works period C – Bulk earthworks, drainage and utilities	740	50
Works period D – Moorebank Avenue and internal road construction	19	50
Works period E – IMT facility and Rail link connection construction	31	350
Works period F – Warehouse construction and fit out	20	120
Works period G – Miscellaneous structural construction and finishing works	6	100

Works within the MPE Rail link corridor, which would have the potential to impact on existing rail services, would generally be undertaken during planned possession periods or in safe work zones in order to minimise any potential impacts to rail services.

Formal pedestrian facilities are currently provided on the western side of Moorebank Avenue only.

4.3.7 Construction ancillary facilities

Temporary construction compounds, a batching plant and communal parking areas would be required to support construction works for the Proposal. The locations of these compounds and facilities are indicative and subject to confirmation by the construction contractor.

At this stage construction compounds identified for the Proposal include:

- Earthworks Compound
- IMT Compound
- Rail Compound

An area would be made available in the northern portion of the Proposal site to provide worker parking, once the Moorebank Avenue/Anzac Road intersection upgrade is complete. In addition, compounds would be established for the construction of each warehouse.

The indicative location of these compounds is shown in Figure 4-8. Table 4-12 outlines the proposed construction facilities and their uses during the construction of the Proposal. Details of each of these facilities are provided in the following sections.

Table 4-12: Proposed construction ancillary facilities and activities

Ancillary facility	Activity and use				
	Site office	Staff amenities	Car parking	Storage and laydown	Materials testing
Earthworks Compound	✓	✓	✓	✓	✓
IMT Compound	✓	✓	✓	✓	✓
Rail Compound	✓	✓	✓	✓	✓
Construction parking area			✓		
Warehouse Compounds	✓	✓		✓	✓

Compound and stockpile sites would be temporary in nature and removed/decommissioned at the completion of construction. Where not within the footprint of the Operational area, these areas would be rehabilitated upon completion of the works and the sites left in a stable condition.

Earthworks Compound

The Earthworks Compound would be located to the west of Moorebank Avenue, near the site access off Chatham Avenue, as shown in Figure 4-8. This compound would be in close proximity to the proposed Pre-construction and Bulk earthworks stockpiling site. The compound would have an area of approximately 41,000 m² and would generally

include, but not be limited to, offices, car parking, equipment storage and laydown areas and materials screening, crushing and washing facilities.

After the pre-construction stockpiling works period, this compound would continue to be used during the Bulk earthworks period. The layout of this compound would remain the same as during the pre-construction phase.

Access to the compound would be from Chatham Avenue and the signalised intersection with Moorebank Avenue.

IMT Compound

Two location options for compounds to support the development of the IMT facility and Rail link connection have been identified and are shown in Figure 4-8.

The southern compound site option (Option 1) would be located in the southern portion of the site near the site entrance off Moorebank Avenue onto Chatham Avenue. This site would initially have been used as the Earthworks Compound and would be the primary compound to support construction of the IMT facility and the new access off Moorebank Avenue. This compound would provide offices, administration, worker amenities and an engineer's workshop. The IMT Compound (Option 1) would be accessed and egressed directly to and from Moorebank Avenue via Chatham Avenue. This compound would be the primary compound until works are complete on the Moorebank Avenue/Anzac Road intersection.

After the Moorebank Avenue intersection and new site access works are complete, the IMT Compound may be relocated to the northern compound site option (Option 2), if required. Alternatively, both compound site options may be used concurrently. This site would be located in the northern portion of the site directly south of Bapaume Road and north of the proposed IMT facility. The northern site compound would provide the same facilities as the southern site compound and would have an area of approximately 18,000m². Access to the IMT Compound (Option 2) would be via the new site access off Moorebank Avenue.

Rail Compound

There are two location options for the Rail Compound, as shown in Figure 4-8.

Option 1 would be the same as the Option 1 site for the IMT Compound, which would be located in the southern portion of the site near the site entrance off Moorebank Avenue onto Chatham Avenue. Either combined compound facilities would be utilised on this site (i.e. for both the IMT facility and Rail link connection works) or separate compounds would be located adjacent to each other. The Option 1 site would initially have been used as the Earthworks Compound.

The Rail compound would have an area of approximately 41,000 m² and would be the primary compound to support construction of the Rail link connection. This compound would provide offices, administration, worker amenities and an engineer's workshop. The Rail Compound (Option 1) would be accessed and egressed directly to and from Moorebank Avenue via Chatham Avenue and internal haul roads.

As construction on the Rail link connection progresses in a northerly direction and after the new site access off Moorebank Avenue is constructed, the Rail Compound may be relocated to the Option 2 site if required. This site would be located within the footprint of the proposed IMT facility site. Alternatively, both compound site options may be used concurrently. The Option 2 compound would have an area of approximately 33,000 m² and would provide the same facilities as the Option 1 compound. Access to the Rail Compound (northern site) would be via the new site access off Moorebank Avenue (refer Figure 4-8.)

Warehouse compounds

Multiple compounds would be located within the warehousing site (one compound per warehouse). Each compound would support the construction of one warehouse and would provide offices, worker amenities, and general storage and laydown.

The warehouse compounds would be accessed and egressed via the new site access off Moorebank Avenue and the internal roads.

The location of the warehouse compounds would take into consideration the following criteria:

- Relatively level land
- Greater than 40 m to a watercourse
- Greater than 20 m from threatened species and endangered ecological communities
- No requirement to remove any native vegetation beyond that otherwise being undertaken for the Proposal
- No requirement to undertake any significant ground disturbing works
- Not unreasonably affect the land use of adjacent properties.

Consideration of all of the above factors would be undertaken prior to the establishment of the warehouse compounds.

Batching plant

There are two location options for the batching plant, as shown in Figure 4-8.

Option 1 would be located in the northern portion of the site, directly south of the new site access off Moorebank Avenue. The batching plant would have an area of approximately 8,000 m² and would support the construction works on the Proposal site. The batching plant (Option 1) would be accessed and egressed via the new site access off Moorebank Avenue. Following construction, this site would provide parking for the IMT facility.

Option 2 is located in the southern portion of the site, near the site entrance off Moorebank Avenue onto Chatham Avenue. This option would be adjacent to the proposed Rail Compound (southern site) and IMT Compound (Option 1). The batching plant (Option 2) would have an area of approximately 8,000 m² and would be accessed and egressed via the existing site access off Moorebank Avenue onto Chatham Avenue.

Materials crushing

As mentioned above, there is the potential for some oversized boulders to be contained within the imported fill that would require crushing to make the materials suitable for use as an engineered fill. This oversized material would either be identified on entry to the Proposal site or at the unloading point. Once identified the oversized materials would be directed to the materials crushing area within the Earthworks Compound (refer Figure 4-8).

Demolition waste stockpiled after the Early Works would also be crushed at the Earthworks Compound during the Bulk earthworks period for potential reuse on the Proposal site.

The following process would be followed for screening and crushing of materials:

1. Trucks carrying loads with oversized materials would unload onto the primary screen, which would separate larger materials from the smaller materials.
2. Earth moving equipment would then be used to manoeuvre the screened material into the crushing system.

3. The primary crusher would crush the raw material to a manageable size, which would then be transferred by a conveyor to the secondary crusher.
4. The secondary crusher would crush the material into smaller pieces which would then be put back through the primary screening facility to separate the material into required product sizes and separate stockpiles.
5. Material which is not crushed to product size would be transported back to the crusher for another round of processing.

The product from the crushing and screening operation would be loaded into trucks using a front-end loader, and either directly placed to form the final site levels or placed into a stockpile.

The stockpiles of final product would be located at the opposite end of the crushing area to the originating raw material. Controls would be implemented to ensure erosion and dust generation are minimised on the stockpiles and maximum stockpile heights are not exceeded.

Parking

At the commencement of construction, parking would be provided in the southern portion of the site (refer Figure 4-8). This parking site would have an area of approximately 1,700 m² and would be accessed and egressed via the existing site access off Moorebank Avenue onto Chatham Avenue.

Following the construction of the new site access of Moorebank Avenue, communal parking for all light vehicles on the Proposal site would be located in the northern portion of the site as shown in Figure 4-8. This parking site would have an area of approximately 3.7 ha and would be accessed and egressed via the new site access. If required, additional parking would be provided directly south of Bapaume Road. No access to the parking area would be provided from Bapaume Road and all vehicles accessing the parking area would be required to use the new site access and internal roads.

4.3.8 Construction Environmental Management Plan (CEMP)

A Preliminary Construction Environmental Management Plan (PCEMP) has been prepared by Arcadis Design and Consulting (Appendix I). The purpose of this PCEMP is to provide the preliminary overarching framework for the management of all potential environmental impacts resulting from construction activities.

A number of other preliminary construction related management plans have also been prepared for the Proposal, including:

- Preliminary Construction Traffic Management Plan (Appendix M)
- Air Quality Management Plan (Appendix O)
- Preliminary Erosion and Sediment Control Plans (Appendix I)
- Preliminary Construction Works Drawings (Appendix J)

This PCEMP and these management plans would form the basis of the Construction Environmental Management Plan (CEMP) and associated plans to be prepared for the Proposal, prior to construction. It should be noted that the pre-construction stockpiling phase (works period A) would occur pre-construction (i.e. pre-CEMP).

4.4 Operation

The Proposal would involve the operation of the IMT facility, Rail link connection and warehousing. Section 4.2 of this EIS provides a summary of the built form which would be in operation for the Proposal. This section provides discussion on the operation of the Proposal.

4.4.1 Intermodal terminal facility

Intermodal process

Once operational, the IMT facility would facilitate a container freight throughput of 500,000 TEU per annum, via both rail and road, comprising of the interstate/intrastate and IMEX port-shuttle throughput.

The IMT facility would have capacity to accept trains ranging in length from 600 m to 1800 m. It would comprise nine rail sidings, five of which would be 1800 m long entry sidings and the remaining four would be 900 m long container handling sidings. The site arrangement allows for up to three 1,800 m trains and two 900 m trains to be processed at the terminal at one time.

Eight of the rail sidings would be ordinarily used for operations and one would provide a locomotive escape route. It is anticipated that each train would be on the site for approximately two and half hours to undertake a full unloading and loading operation. During normal site operations it is anticipated that two trains would be on site at any one time, with eight locomotives present on site at any one time. Further details of rail operations are provided below.

The IMT facility would also have capacity to accept heavy vehicles, up to 'double road train' in size. There would be a four lane entry into the IMT facility which would connect to the truck container loading area along the western portion of the IMT facility. A turning area would be provided for vehicles at the southern end of the IMT to enable them to exit the facility via the weighbridges and exit gates at the northern end.

Container loading/unloading and storage areas would be located in the central portion of the IMT facility, to the west of the rail roads and east of the truck loading areas, and would be a maximum of five containers high.

Rail freight

The Proposal would provide an IMT facility to support the transport of freight by rail between Victoria, Queensland and regional NSW and port shuttle movements. Trains would enter the IMT facility using either the northern or southern Rail link connections, and the Rail link. They would then be unloaded, with freight distributed through one of the following container flows:

- Temporarily stored in the IMT facility
- Transferred directly by truck to warehousing within the Proposal site
- Transferred directly by truck to the MPE site
- Loaded directly onto heavy vehicles for distribution to markets via the nearby major road network.

The empty trains would then be re-loaded with freight containers from the following locations:

- Warehouses within the MPW site (transported to the IMT facility via truck)
- Directly brought to the IMT facility by truck
- Containers brought to site by rail.

Full trains would then be sent interstate, intrastate or via port shuttle to a Sydney-based port (e.g. Port Botany) by means of the Rail link and the SSFL.

Empty containers would be managed through an empty container park (ECP) located within the Moorebank Precinct.

During standard operations it is anticipated that the Proposal would receive the following train movements per day:

- Two trains of up to 1,800 m length – each train comprising four locomotives and 74 wagons
- Two trains of up to 1,500 m length – each train comprising four locomotives and 62 wagons
- Two trains of up to 900 m – each train comprising one locomotive and 38 wagons.

No ramp up has been considered for the operation of the Rail link connection. Instead, the above train movements are considered to be a worst-case scenario regarding rail operations (i.e. operating at full capacity from opening day), which is considered to be a conservative approach.

As noted above, a locomotive-shifter would be located at the northern end of the rail sidings to transfer locomotives between the storage sidings. Once the train is in position on the siding, the locomotive would be decoupled from the remainder of the train and driven onto the locomotive-shifter. The locomotive-shifter would shunt the locomotive across onto another rail siding in order for the locomotive to be transferred to the other end of the train to enable travel in the opposite direction.

The 60,000 L, self-bundled mobile refuelling tank would supply the trains with diesel fuel while they are being unloaded and loaded. Mobile fuel tankers would refill the tank as required.

Road freight

The IMT facility would support the transfer of freight between road and rail within NSW. The circulation of trucks through the IMT facility would be as follows:

- Trucks would enter the IMT facility at the northern end via the main entrance off Moorebank Avenue or via the internal road if coming from the warehousing area within the MPW site
- Trucks entering the IMT facility would be processed at the truck processing gates. Only authorised/cleared trucks would be permitted to proceed into the facility. Non authorised trucks would be instructed to turn around and exit via the main access or to wait at the truck waiting area until their allotted time
- Authorised trucks would be held within the truck holding area and/or progress to the loading areas
- Once in location these trucks would be loaded/unloaded using manual container handling equipment. Unloaded freight would be distributed through one of the following container flows:
 - Temporarily stored in the IMT facility
 - Transferred directly by truck to warehousing within the Proposal site
 - Transferred directly by truck to the MPE site
 - Loaded directly onto trains for distribution to markets (including interstate, intrastate and port shuttle movements) via the Rail link
 - Loaded directly onto heavy vehicles for distribution to markets via the road network.
- Once loaded/unloaded, trucks would exit the IMT facility via weighbridges (as necessary). Subject to being determined to be at the approved weight, trucks would proceed via the truck processing gates onto Moorebank Avenue, or onto the internal road to access the warehousing area within the MPW site.

Inter-precinct freight transfer

A portion of freight would be transferred from the IMT facility to the warehousing area within the Proposal site or to the IMEX terminal on the MPE site without accessing the broader road network. These containers would be transferred using designated site

transfer trucks. These trucks would also be processed at the IMT facility gates and weighbridges.

Inter-precinct freight transfers would generally be as follows:

- Site transfer trucks moving between the Proposal and the MPE site would turn right on Moorebank Avenue, and use the signalised MPE site access to enter/exit the MPE site
- Site transfer trucks moving freight to the warehouse area would exit the IMT facility via the weighbridges, before proceeding south-west along the internal access road.

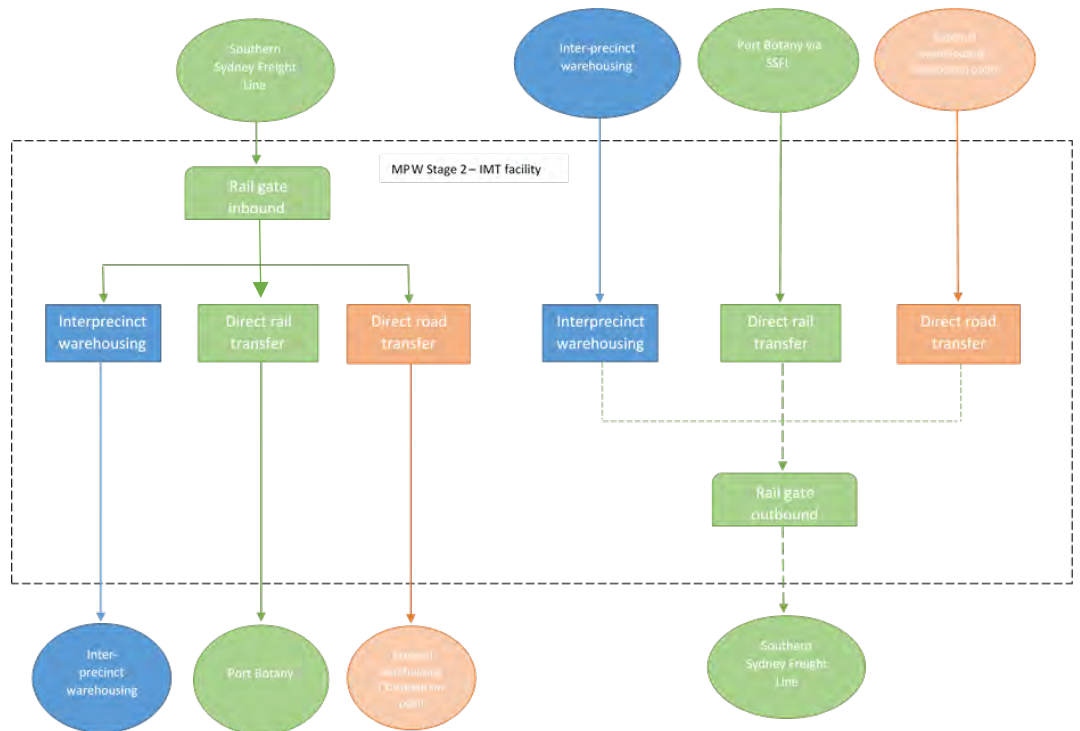
Container flows

A summary of the container flows for the IMT facility is shown in Table 4-13.

Table 4-13: Container flows

Source	Mode	Destination	TEU	%
Inbound				
Port Botany, Interstate and Regional NSW	Rail	IMT facility	110,000	22
Warehouses, (MPW or MPE) or MPE IMEX	Internal transfer	IMT facility	110,000	22
External warehouses/distribution centres	Road	IMT facility	30,000	6
INBOUND TOTAL			250,000	50
Outbound				
IMT facility	Rail	Port Botany, Interstate and Regional NSW	110,000	22
IMT facility	Internal transfer	Warehouses, (MPW or MPE) or MPE IMEX	110,000	22
IMT facility	Road	External warehouses/distribution centres	30,000	6
OUTBOUND TOTAL			250,000	50
TOTAL			500,000	100

The following diagram shows the container flow movements for the Proposal.



Ancillary Facilities

The operation of the Proposal also involves a number of ancillary facilities within the IMT facility including an administration area, an engineer’s workshop, a locomotive shifter and train refuelling facilities.

The administration area would provide a small office and staff car parking area. This area would be accessed via the new site access off Moorebank Avenue and would provide:

- Office facilities for site management
- Amenities and kitchen facilities for site staff, truck drivers and train drivers
- Engineer’s workshop.

4.4.2 Rail link connection

The Rail link connection would join the existing Rail link to the IMT facility. The approved Rail link branches near the SSFL, enabling freight trains to travel to and from either the north or the south. Trains would have the capability to wait at an area (which includes facing and trailing crossovers) to the east of the Georges River, prior to entering the SSFL. This would also provide an area for trains to wait, providing a clear path for trains exiting the SSFL. The Rail link has been designed to allow trains using the northern connection to exit the SSFL at 60 kilometres per hour (kmph) and for trains using the southern connection to exit at speeds of 35 kmph. The usual operating speed of trains on the Rail link and Rail link connection would be 35 kmph.

The Rail link connection has two rail roads, one which feeds the entry sidings and the other feeds the handling sidings in the IMT facility. The two roads are connected to allow the shunting of trains.

As discussed above, the Rail link and Rail link connection would accommodate trains ranging in size between 600 m and 1,800 m in length. Trains up to 900 m in length would generally be made up of a single locomotive with up to 38 wagons. Trains of

1,800 m length would generally be made of up to four locomotives, with up to 74 wagons.

The construction of the Rail link would be undertaken as part of the MPE Stage 1 Proposal and therefore approval is not sought for this. However, approval is sought for the operational use of the Rail link, for Proposal related trains, between the SSFL and the Rail link connection.

4.4.3 Warehousing

Heavy and light vehicles would access the warehouses via the main site access off Moorebank Avenue, as detailed in Section 4.2.5 of this EIS. Light vehicles would park in the allocated parking area adjacent to each warehouse, and heavy vehicles would progress to the truck loading/unloading areas alongside each warehouse. Once in location these trucks would be loaded/unloaded via manual handling equipment. Once loaded the trucks would then be distributed to markets via the nearby major road network, transported to the adjacent IMEX terminal on the MPE site, or transported directly to the IMT facility for dispatch via rail interstate, intrastate or via port shuttle to a Sydney-based port (e.g. Port Botany).

It is noted that dangerous goods would not be accepted by the Proposal and would therefore also be excluded from the warehouses.

Use

Approval is sought for the use of individual warehouses by future tenants. Detailed information relating to use of the warehouses is provided throughout this EIS, namely:

- Internal layout – refer to Section 4.2.3 of this EIS
- Operational workforce – refer to Section 4.4.4 of this EIS
- Hours of operation - refer to Section 4.4.4 of this EIS
- Access and car parking – refer to Sections 4.2.3 and 4.4.5 of this EIS
- Signage – refer to Section 4.2.7 of this EIS.

Individual tenants would be confirmed post-approval, however their operation would be consistent with the details provided in this EIS (refer to comments above) and the Operational Environmental Management Plan (OEMP) for the Proposal.

4.4.4 Freight village (Precinct Amenities)

Vehicles would access the precinct amenities area via the main site access off Moorebank Avenue and the internal road. Light vehicles would access and egress the area directly via the allocated parking area adjacent to the precinct amenities area. Whereas service vehicles would enter the area via the one-way service road, which loops around the rear of the precinct amenities area and exits via the car park.

Use

Approval is sought for the use of the precinct amenities area by future tenants. Detailed information relating to use of the precinct amenities area is provided throughout this EIS, namely:

- Internal layout – refer to Section 4.2.3 of this EIS
- Operational workforce – refer to Section 4.4.5 of this EIS
- Hours of operation - refer to Section 4.4.5 of this EIS
- Access and car parking – refer to Sections 4.2.4 and 4.4.4 of this EIS
- Signage – refer to Section 4.2.8 of this EIS.

Individual tenants would be confirmed post-approval, however their operation would be consistent with the details provided in this EIS and the Operational Environmental Management Plan (OEMP) for the Proposal.

Any food premises located within the freight village would be constructed and operated to meet the Australian Standards (as relevant), including:

- AS 4674-2004: Construction and fit out of food premises
- AS 4322-1995: Quality and performance of commercial electrical appliances - Hot food storage and display equipment
- AS ISO 22000—2005: Food safety management systems—Requirements for any organisation in the food chain.

In addition, operations for food premises within the freight village would comply with the Australia New Zealand Food Standards Code.

4.4.5 Operational workforce and hours

The operational workforce for the IMT facility would comprise of approximately 40 staff whom would generally work in shifts throughout the operational hours of the IMT facility. The operational workforce of the warehousing area would comprise approximately 1,200 full time equivalent staff, who would work in two shifts, increasing to three shifts in the future.

The IMT facility and Rail link connection, would operate 24 hours per day and seven days per week. This would allow the possibility for an increased number of freight related movements to occur outside of peak traffic periods. This is consistent with government strategic planning documents to increase the movement of freight outside of peak periods.

The warehouses on the Proposal site would generally be operational for 18 hours a day, and five to seven days a week. Hours of operation would generally be 7 am to 1 am.

The operational hours of the freight village would be 7am to 6pm, five to seven days per week, and there would be a total of 25 staff members during operation.

4.4.6 Traffic movements, access and parking

Road traffic

As described above, trucks would access the Proposal site via the new site access off Moorebank Avenue. Operational trucks can also leave the site via Bapaume Avenue (left out only). Summaries of the movements of operational trucks through the IMT facility and warehousing area are provided in Section 4.4.1 and 4.4.3 of this EIS respectively.

Cars would also access the site via the main access off Moorebank Avenue. Car parking spaces would be available on-site for the operational workforce and visitors at the IMT facility. In addition, internal roads within the site would enable heavy and light vehicle movements around the warehousing area. Car parking would also be provided for each warehouse at a ratio of 1:300 per GFA of warehousing and 1:40 per GFA for offices, as detailed in Section 4.2.3 of this EIS.

Car parking spaces would be calculated based on projected staffing numbers for both the IMT and warehousing, and would take into account overlap for change of shift.

A summary of the truck and car numbers for the operation of the Proposal are provided in Table 4-14.

Table 4-14: Operational truck and car movements

Trip type		Vehicle movements per day (2-way round trip)
Truck movements	External truck trips via external road network	1,458
Car movements	IMT facility	292
	Warehouses/freight village	2,378
	Total Daily Employee Car Trip Generation (IMT facility and warehouses)	2,670

As discussed in Section 4.2.2 of this EIS, access to the Rail link connection would also be available via the new access off Moorebank Avenue. Access would be provided and retained for Sydney Trains, ARTC and operators of the Rail link connection.

Rail traffic

During usual operations the IMT facility would accommodate up to 12 train movements per day (6 in each direction).]

The on-site rail operation for the Proposal is as follows:

- A train arrives to the IMT facility via the Rail link connection and enters one of the available rail roads
- The locomotive is detached and shifted to an empty rail road using the locomotive shifter
- The locomotive is shunted back to the entry road (southern part of the IMT facility) and is attached to a set of wagons that is ready to depart
- The locomotive attaches to the set of wagons and departs the proposed IMT facility when a path is available.

It is anticipated that, subject to unloading, trains would be processed within two and a half hours of entering the IMT facility. Access to train paths has been developed in consultation with ARTC, who have confirmed sufficient paths are available to service the Proposal.

Interprecinct movements

In addition to the above rail and road movements, movements would also occur between the MPW and MPE sites. These movements would primarily include the transfer of heavy vehicles from the proposed MPW Stage 2 entrance to the MPE site.

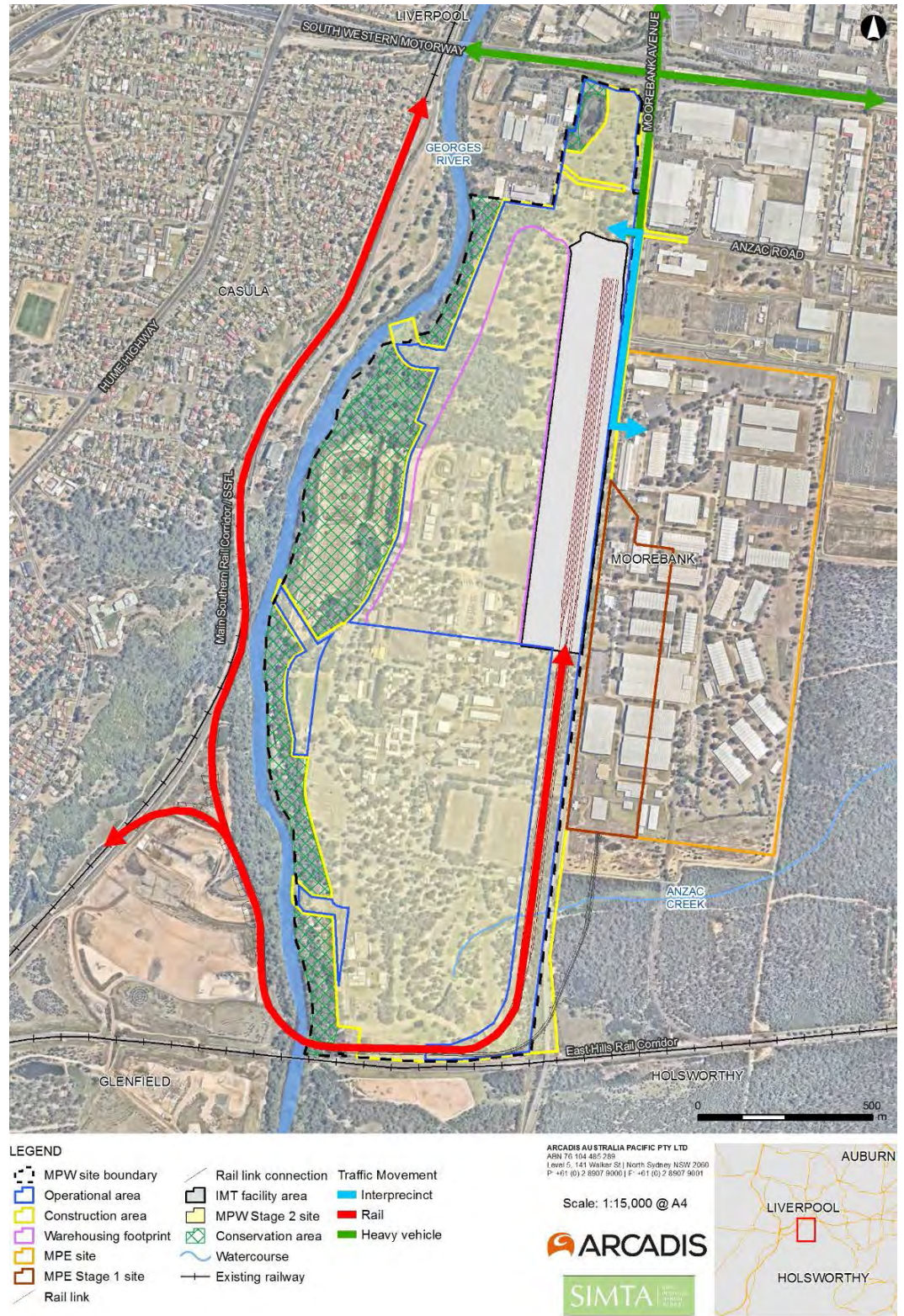


Figure 4-9: Operational traffic movements

4.4.7 Site security

The Proposal includes a number of on-site security measures to ensure the protection and safety of the Proposal site, its employees and authorised visitors. Security at the Proposal site would include:

- Fencing around the perimeter of the Proposal site, and potentially the Rail link connection, which is envisaged to include palisade fencing and chain-link fencing along the Moorebank Avenue boundary and chain-link at other locations (refer to Section 4.2.7 of this EIS)
- A controlled site access system including electronic truck processing
- A controlled circuit television (CCTV) security system at key locations including site entrances and along boundaries
- An integrated telecommunications system which involves connection to all main buildings and structures.

4.4.8 Operational Environmental Management Plan

An Operational Environmental Management Plan (OEMP) would be prepared to provide the overarching framework for the management of all potential environmental impacts resulting from the operation of the Proposal.

A number of operational related management plans have been prepared for the Proposal, including:

- Preliminary Operational Traffic Management Plan prepared by Arcadis (refer to Appendix M of this EIS)
- Air Quality Management Plan (refer to Appendix O of this EIS)
- Stormwater and Drainage Design Drawings (refer to Appendix R of this EIS).

These management plans, along with others, would form the basis of the OEMP to be prepared for the Proposal, prior to operation.

This Proposal also seeks approval for ongoing maintenance which would be undertaken periodically throughout operations. Maintenance would include, but not be limited to:

- Pavements: Ongoing surface and joint repair depending on the pavement type, with subgrade repair where necessary
- Stormwater: Regular sediment and pollutant clean out and repairs to drainage infrastructure, including six monthly maintenance of gross pollutant traps (GPTs)
- Electrical and Communications equipment: Ongoing maintenance and replacement where necessary. Equipment includes light poles, distribution boards, CCTV, boom gates, card readers etc.
- Line marking and other ancillary road furniture: Line marks would be re-lined and road furniture repaired or replaced as necessary
- Fencing and gates: Ongoing fence and gate repair
- Terminal and warehouse: Ongoing infrastructure and plant/equipment repair and replacement as necessary
- Rail: Regular signal testing and replacements, rail inspections, rail tamping, stabilising and grinding, turnout and sleeper replacements and repair as required.

Relevant activities and management measures would be detailed in the OEMP.

5 STATUTORY PLANNING APPROVALS

As noted in Section 1 of this EIS, the Proposal is classified as SSD and is therefore to be assessed under Part 4, Division 4.1 of the EP&A Act. Assessment and operation of the Proposal is subject to both Commonwealth and State legislation. The following sections outline the planning approvals pathway which is applicable to the Proposal and provides an assessment of the Proposal in consideration of relevant environmental planning legislation and plans.

5.1 Commonwealth legislation

5.1.1 Environmental Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places (defined in the Act as Matters of National Environmental Significance (MNES)) – as well as to govern actions undertaken on Commonwealth land. The MNES that are protected under the EPBC Act are:

- World heritage properties
- National heritage places
- Wetlands of international importance
- Listed threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- The Great Barrier Reef National Park
- Nuclear actions (including uranium mines)
- An action on Commonwealth land which is likely to have a significant impact on the environment
- Coal seam gas activities that pose risk to water resources.

In accordance with sections 67 and 67A of the EPBC Act, any works that have the potential to result in an impact on any MNES or on Commonwealth land are considered 'controlled actions' and require a referral to the Federal Minister for the Environment for approval. The MPW Project was determined to be a controlled action under the EPBC Act, EPBC Reference 2011/6086 as the MPW Project will be undertaken by, or on behalf of the Commonwealth and will result in impacts to listed threatened species, including:

- *Persoonia nutans* (listed as Endangered under the EPBC Act)
- *Grevillea parviflora* subsp. *parviflora* (listed as Vulnerable under the EPBC Act).

The MPW Final EIS (Parsons Brinckerhoff, December 2015) was prepared to address the requirements of the EPBC Act assessment requirements. The MPW Project was granted approval as a controlled action under the EPBC Act in mid-2016 (EPBC Approval).

Compliance with EPBC Approval

The EPBC Approval issued in mid-2016 was subject to conditions of approval. The consistency of the Proposal with the EPBC Approval conditions is provided in Table 5-1. Overall, it is concluded that the Proposal is consistent with the relevant conditions of the EPBC Approval.

Table 5-1: EPBC Conditions of Approval compliance table

EPBC conditions of approval	Comments
Disturbance limits (Condition 1)	<p>The Proposal site is consistent with the Development footprint identified in the EPBC Approval (Annexure A). The Proposal does not propose any construction activities or operations outside of the identified footprint and therefore complies with this condition of approval (Refer to Section 4 of this EIS).</p>
Environmental management plans (Conditions 2 – 13)	<p>A Preliminary Construction Environmental Management Plan (PCEMP) has been prepared for the Proposal in consideration of both the Concept Plan Approval and EPBC Approval (refer to Appendix I of this EIS). The purpose of this PCEMP is to provide the preliminary, overarching framework for the management of potential environmental impacts resulting from construction activities.</p> <p>In addition to this a number of other preliminary construction related management plans have also been prepared for the Proposal, including:</p> <ul style="list-style-type: none"> ▪ Preliminary Construction Traffic Management Plan (PCTMP) (refer to Appendix M of this EIS) ▪ Air Quality Management Plan (refer to Appendix O of this EIS) ▪ Erosion and Sediment Control Plans (ESCPs) and Bulk Earthworks Plans, within the Stormwater Drainage Design Drawings (refer to Appendix R of this EIS) <p>This PCEMP and these management plans will form the basis of the CEMP and associated plans to be prepared for the Proposal, prior to construction. This preliminary construction plans have considered the REMMs indicated by the EPBC Approval. The EPBC Approval would be considered further on preparation of the final CEMP and subplans, as relevant.</p> <p>An Operational Environmental Management Plan (OEMP) will be prepared to provide the overarching framework for the management of all potential environmental impacts resulting from the operation of the Proposal.</p> <p>A number of operational related management plans have been prepared for the Proposal, including:</p> <ul style="list-style-type: none"> ▪ Preliminary Operational Traffic Management Plan (refer to Appendix M of this EIS) ▪ Air Quality Management Plan (refer to Appendix O of this EIS) ▪ Stormwater Drainage Design Drawings (refer to Appendix R of this EIS). <p>The management plans will form the basis of the OEMP to be prepared for the Proposal. These plans have considered the REMMs indicated by the EPBC Approval. The EPBC Approval would be considered further on preparation of the final OEMP and subplans, as relevant.</p>
Biodiversity offsets (Conditions 14 – 15)	<p>A Biodiversity Assessment Report has been prepared for to assess the impacts of the Proposal (refer to Appendix Q of this EIS). A Biodiversity Offset Strategy (BOS) is to be prepared separately for the Moorebank Precinct which considers all impact of the MPW and MPE Projects</p>

EPBC conditions of approval	Comments
	(including the Proposal). This BOS would be prepared and implemented in accordance with the EPBC Approval.
Administrative conditions (Conditions 16 – 27)	The Proposal would involve impact on Commonwealth land and listed threatened species and ecological communities, approval for which has been granted under the EPBC Approval. The administrative conditions within the EPBC Approval are not relevant to the planning approvals stage of the Proposal, however would be considered at later stages as mandated by the conditions.

5.2 State legislation

5.2.1 Environmental Planning and Assessment Act 1979

The NSW environmental planning and assessment framework is established by the EP&A Act, which sets out approval requirements and provides for the making of environmental planning instruments, which in turn determine the relevant planning approval pathway for development in NSW.

Part 3 of the EP&A Act provides for the formation of environmental planning instruments (EPIs), which can take the form of local environmental management plans (LEPs) or State Environmental Planning Policies (SEPPs). EPIs include development standards that control the permissibility of development and identify when development approval is required. EPIs which are applicable to the Proposal include:

- *State Environmental Planning Policy (State and Regional Development) 2011*
- *State Environmental Planning Policy (Infrastructure) 2007*
- *State Environmental Planning Policy No.33 - Hazardous and offensive development*
- *State Environmental Planning Policy No. 55 - Remediation of land*
- *State Environmental Planning Policy No. 64 - Advertising and signage*
- *Greater Metropolitan Regional Environmental Plan No.2 - Georges River Catchment*
- *Liverpool Local Environment Plan 2008 (Liverpool LEP).*

An assessment of these EPIs in consideration of the Proposal is provided below.

Objects of the EP&A Act

Section 5 of the EP&A Act provides objects which form the basis of the Act. The objects of the EP&A Act in consideration of the Proposal has been provided in in Table 5-3.

Table 5-2: Objects of the EP&A Act

EP&A Act Objective	Comment
To encourage the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, waters, cities, towns and villages for the	Where possible the Proposal has been designed to conserve natural and artificial resources. Where reasonable and feasible, the Proposal has been designed to avoid impacts on the surrounding natural environment and to minimise impacts on existing development and local communities. The Proposal includes a mode a shift from road to rail and would result in a reduction in regional traffic movements (refer to Section 7 of this EIS). As a result of this modal shift

EP&A Act Objective	Comment
<p>purpose of promoting the social and economic welfare of the community and a better environment.</p>	<p>the Proposal would result in a long term reduction in greenhouse gas emissions (refer to Section 18 of this EIS). Measures would be implemented for the Proposal throughout construction and operation to ensure that impacts of the Proposal on the natural and built environment are minimised and not substantial (refer to Section 22 of this EIS).</p>
<p>To encourage the promotion and coordination of the orderly and economic use and development of land.</p>	<p>The Proposal site has been strategically identified in government policy to be a suitable location for an intermodal terminal which would improve the economic efficiency of freight distribution throughout Sydney and NSW (refer to Section 3 of this EIS). The Proposal has been designed to respond to the site's opportunities and constraints by providing an intermodal terminal, and associated warehousing, which meets both the operators and the government's objectives for the development of the land while considering surrounding development and mitigating impacts (refer to Section 22 of this EIS).</p>
<p>To encourage the protection, provision and co-ordination of communication and utility services.</p>	<p>The Proposal has been designed to minimise impacts on communications and utility services, where possible (refer to Section 20.3 of this EIS). Consultation has been undertaken with all key utilities and service providers for the preparation of the Proposal's design (refer to Section 6 of this EIS). In general, it has been identified that the existing infrastructure is suitable to service the estimated demands of the Proposal either with augmentation or in its current condition. Further consultation with infrastructure and service providers would continue during the progression of the design for the Proposal, prior to and during construction.</p>
<p>To encourage the provision of land for public purposes</p>	<p>The Proposal includes the development of the site for the purposes of an intermodal terminal and warehousing which will be, as a result of its operation, a secure site not available for public purposes. As the Proposal site was formerly Defence lands and not publically accessible there would be no net loss of public land as a result of the Proposal. Notwithstanding this, the Proposal would facilitate for the existing use of the Moorebank Avenue as a publically accessible private road with an upgrade to the Moorebank Avenue/Anzac Road intersection.</p>
<p>To encourage the provision and coordination of community services and facilities.</p>	<p>The Proposal site has been designed and located to avoid direct impacts to community facilities (refer to Section 20.3 of this EIS). The mitigation measures to be implemented for the Proposal would further reduce the impact of the Proposal on any community facilities (refer to Section 22 of this EIS).</p>
<p>To encourage the protection of the environment, including the protection and</p>	<p>A comprehensive assessment of the existing local environment at the Proposal site has been undertaken to recognise any potential impacts of the Proposal on local,</p>

EP&A Act Objective	Comment
<p>conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats.</p>	<p>state or Commonwealth listed biodiversity species or communities (refer to Section 11 of this EIS) .</p> <p>The Proposal would result in the clearing of threatened ecological communities, threatened species and their habitat; however the majority of this vegetation/habitat is comprised of small, highly fragmented and disturbed patches of vegetation. A proposed conservation area, up to 250 m wide, located adjacent to the Georges River along the western boundary of the Proposal site, has been selected to maintain higher native vegetation values than those areas proposed for clearing, while maintaining fauna connectivity and a buffer for the protection of soil stability, water quality and aquatic habitats. This area is to be established as a biodiversity offset area under the MPW Concept Approval.</p> <p>A detailed biodiversity assessment, and associated proposed mitigation measures have been provided in Section 11 of this EIS.</p>
<p>To encourage ecologically sustainable development.</p>	<p>The Proposal is consistent with the four principles of ecologically sustainable development as shown in Section 20.4 of this EIS.</p>
<p>To encourage the provision and maintenance of affordable housing.</p>	<p>N/A</p>
<p>To promote the sharing of the responsibility for environmental planning between different levels of government in the State.</p>	<p>Consultation has been undertaken with the relevant local councils and government agencies throughout the development of the Proposal and the preparation of this EIS (refer to Section 6 of this EIS). All levels of government have been encouraged to be actively involved in and to contribute to the development of the Proposal and this EIS through previous and continuing consultation activities.</p>
<p>To provide increased opportunity for public involvement and participation in environmental planning and assessment.</p>	<p>Community consultation has been undertaken through all stages of the Proposal development, commencing with the MPW Concept Approval, through to the exhibition of the Proposal EIS (refer to Section 6 of this EIS). Community feedback has been considered at each stage of the Proposal development to inform the design development. Community consultation would continue through the detailed design, construction and operational stages of the Proposal, subject to approval.</p>

Planning approval pathway

Approval of the MPW Project (SSD 5066) was granted on 3 June 2016 under Division 4.1, Part 4 of the EP&A Act, by the Planning Assessment Commission (PAC). The MPW Concept Approval included approval of the following:

- Concept Proposal⁶: involving the development of the site for an intermodal facility, including a rail link connecting the MPW site to the Southern Sydney Freight Line (SSFL), warehouse and distribution facilities, and associated works
- Early Works (Stage 1): involving the demolition of buildings and existing hardstand, services termination and diversion; rehabilitation of the excavation/earthmoving training area; remediation of contaminated land; removal of underground storage tanks; heritage impact remediation works; and the establishment of construction facilities and access, including site security.

Clause 2, Schedule 2 of the MPW Concept Approval prescribes that all development, with the exception of Early Works, shall be the subject of future development applications. Approval of any subsequent development applications (DAs) must be consistent with the terms of the MPW Concept Approval, as described in Schedule 1 and subject to the conditions in Schedule 4 of this approval.

Under Schedule 1, Clause 19 of *State Environmental Planning Policy (State and Regional Development) 2011 (SEPP (S&RD))* development for the purposes of 'rail and related transport facilities', including railway freight terminals, sidings and inter-modal facilities with a capital investment value of more than \$30 million is classified as SSD. Furthermore, Schedule 1, Clause 12 of SEPP (S&RD) states that a development that has a capital investment value of more than \$50 million for the purpose of warehouses or distribution centres (including container storage facilities) at one location and related to the same operation' is also classified as an SSD.

The Proposal includes the construction and operation of an intermodal terminal and associated warehousing which is included in the definition of 'rail and related transport facilities' collectively as it to be undertaken as part of one project. The capital cost of the Proposal is estimated to be approximately \$533,000,000 million. Therefore, the Proposal is classified as SSD, and assessable under Division 4.1, Part 4 of the EP&A Act.

Early Works Approval

As noted above, the MPW Concept Approval includes approval of the Early Works for the MPW Project, which includes:

- The demolition of existing buildings and structures
- Service utility terminations and diversion/relocation
- Removal of existing hardstand/roads/pavements and infrastructure associated with existing buildings
- Rehabilitation of the excavation/earthmoving training area (i.e. 'dust bowl')
- Remediation of contaminated land and hotspots, including areas known to contain asbestos, and the removal of:
 - Underground storage tanks (USTs)
 - Unexploded ordnance (UXO) and explosive ordnance waste (EOW) if found
 - Asbestos contaminated buildings
- Archaeological salvage of Indigenous and European sites

⁶ A modification to the Concept Plan Approval has been submitted to DP&E as described in Section 2 of this EIS.

- Establishment of a conservation area along the Georges River
- Establishment of construction facilities (which may include a construction laydown area, site offices, hygiene units, kitchen facilities, wheel wash and staff parking) and access, including site security
- Vegetation removal, including the relocation of hollow-bearing trees, as required for remediation/demolition purposes.

No further planning approvals are required for this stage and therefore Early Works for the MPW Project will commence in the third quarter of 2016. Works associated with the Early Works for the MPW Project are anticipated to continue during the commencement of construction of the Proposal. The extent of Early Works for the MPW Project is shown in Section 1 of this EIS. These works, as already part of a previous stage, do not form part of this Proposal.

Compliance with the MPW Concept Approval

The MPW Concept Approval granted on 3 June 2016 was subject to Conditions of Approval. The consistency of the Proposal with the MPW Concept Approval conditions is provided in Appendix A. Overall, subsequent to a modification under Section 96 of the EP&A Act (refer to Section 1 of this EIS) it is concluded that the Proposal is consistent with the relevant conditions of the MPW Concept Approval.

Compliance with Section 79C

As discussed above, approval is sought for the Proposal under Part 4, Division 4.1 of the EP&A Act. As approval for the Proposal is via a DA, and as reiterated in the SEARs, the Proposal EIS must comply with the 'matters for consideration' under Section 79C of the EP&A Act. A summary of the Proposal's consistency with Section 79C of the EP&A Act, is provided in Table 5-2.

Table 5-3: Compliance with matters for consideration (Section 79 of the EP&A Act)

Section 79C(1)	Matter for consideration	Comments
(a)	Relevant legislation, plans and policy	A detailed assessment of the Proposal having regard to relevant Acts (Federal and state), EPIs and planning policies has been provided within this EIS (refer to Sections 3 and 5 of this EIS). The Proposal is consistent with, state planning policy in that it facilitates for the operation of an IMT and associated warehousing within Moorebank which will lead to an increase in freight rail movements across the Sydney Greater Metropolitan Area. The Proposal is generally compliant with this legislation and, as relevant, includes mitigation measures to ensure compliance is met during construction and operation.
(b)	Likely environmental impacts	This EIS has undertaken a detailed assessment of the potential environmental impacts associated with the construction and operation of the Proposal (refer to Sections 7- 20 of this EIS). In summary, no substantial environmental impacts have been identified for the Proposal. Further, the environmental impacts identified would be mitigated through the implementation of measures for the construction and operation of the Proposal (refer to Section 22 of this EIS).

Section 79C(1)	Matter for consideration	Comments
(c)	Suitability of the site for the development	<p>The EIS prepared for the MPW Concept Approval gave consideration to the suitability of the site for the development of IMT facility. The MPW Concept Approval is considered recognition, by state government and authorities that, subject to mitigation measures, the MPW site is considered suitable for the development of the Proposal (refer to Section 3 of this EIS). Further, as discussed above, the site is considered suitable in that:</p> <ul style="list-style-type: none"> ▪ It is situated in close proximity to the SSFL. ▪ There is a direct intersection linking the adjacent Moorebank Avenue to the M5 Motorway. ▪ It is predominantly zoned as General Industrial land (IN1) for facilitating IMT and industrial warehousing. ▪ Buffer zones are provided between the facility and nearby residential areas. ▪ The location has also been identified in both state and federal strategies as the best, and only location for an IMT to service this defined catchment in South-Western Sydney. <p>The MPW site is therefore considered suitable for the development of the Proposal.</p>
(d)	Any submissions	<p>A number of submissions were made by stakeholders (both private and public) during the public exhibitions of the MPW Concept EIS, RtS and MPW SRtS (8 October– 8 December 2014 and 28 May – 26 June 2015). These submissions, although for previous approval, have been considered in the preparation of the design and EIS for the Proposal (refer to Section 6 of this EIS).</p> <p>Specific consultation has also been undertaken for the Proposal with both government stakeholders and the community. The comments received during this consultation have been considered and, as relevant, addressed in this EIS.</p> <p>Further, the design for the Proposal has been amended to specifically respond to comments provided by stakeholders during the preparation of this EIS, as outlined in Section 6.</p> <p>Additional consultation would be undertaken throughout the assessment of the Proposal, in particular with any particular submissions received during the public exhibition of this EIS. Response to these potential submissions, subsequent to the public exhibition of the EIS, is anticipated to be provided in the form of a Response to Submissions Report and/or a Preferred Project Report if necessary.</p>
(e)	The public interest	<p>As discussed above, this EIS has been prepared based on consultation undertaken with government authorities, service and infrastructure providers, specialist interest</p>

Section 79C(1)	Matter for consideration	Comments
		<p>groups (including LALCs) and the public. The design of the Proposal has been amended to, where possible, address concerns raised by stakeholders and reduce the environmental impact of the Proposal on the surrounding area (refer to Section 6 of this EIS).</p> <p>Positive impacts are likely to be experienced at a regional level while the direct impact (both positive and negative) of the development would potentially be experienced at the local level (refer to Section 20.5 of this EIS).</p> <p>The Proposal is consistent with state and regional planning policies and includes a number of benefits which would be experienced as a result of the proposed freight modal shift from road to rail. The resulting positive economic effects of the Proposal would be experienced at both a local and regional level (refer to Section 3 of this EIS).</p> <p>This EIS includes a number of mitigation measures which would further reduce the impact of the Proposal on the surrounding built, social and natural environment (refer to Section 22 of this EIS).</p> <p>Overall, the construction and operation of the Proposal is considered in the public interest.</p>

Other approvals that do not apply to SSD Applications

Section 89J of the EP&A Act identifies the approvals under other NSW legislation which does not apply to SSD projects under Part 4, Division 4.1 of the EP&A Act. Those approvals which are not required by virtue of Section 89J of the EP&A Act but may ordinarily be required for a project of this sort are outlined in Table 5-3. Although these approvals are not required for the Proposal, an assessment of the relevant potential impacts has been undertaken as part of this environmental impact statement.

Table 5-4: Relevant approvals which are not required for State significant development

Legislation	Approval	Requirement	Where addressed
<i>Fisheries Management Act 1994</i>	Section 201	Dredging and reclamation works	Section 4, 12 and Appendix R of this EIS
<i>Heritage Act 1977</i>	Section 139	Potential impact on relics not listed on the State Heritage Register or protected by an Interim Heritage Order	Section 17 and Appendix V of this EIS
<i>National Parks and Wildlife Act 1974</i>	Section 90	Aboriginal heritage impact permit	Section 16 and Appendix U of this EIS
<i>Water Management Act 2000</i>	Section 89	Water use approval	Section 11 and Appendix R of this EIS

Legislation	Approval	Requirement	Where addressed
	Section 90	Water management work approval	Section 11 and Appendix R of this EIS
	Section 91	Activity approval (other than an aquifer interference approval)	Section 11 and Appendix Q of this EIS
<i>Native Vegetation Act 2003</i>	Section 12	Clearing of native vegetation	Section 11 and Appendix Q of this EIS

Additionally, Section 89K of the EP&A Act details approvals under other legislation which cannot be refused and must be applied consistently to SSD. The approvals relevant to the Proposal are:

- An environment protection licence under Chapter 3 of the *Protection of the Environment Operations Act 1997*
- A consent under section 138 of the *Roads Act 1993*.

These approvals, and other NSW legislation relevant to the Proposal, are described in the following sections.

5.2.2 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) sets out procedures and requirements for waste, air, water and noise pollution control. Chapter 3 of the POEO Act establishes that an environment protection licence (EPL) must be obtained for a scheduled activity. Scheduled activities are listed in Schedule 1 of the POEO Act.

The Proposal constitutes construction and operation of a 'freight depot or centre, where freight will be loaded onto and from rolling stock', as defined under the POEO Act. Under Clause 33(2) (f) and (g) of Schedule 1 of the POEO Act, these activities are excluded from the definition of a 'railway systems activity', for which an EPL is required under the POEO Act. Additionally, advice from the EPA (DOC 13/6031, 25 February 2013) is that construction and operation of private sidings and turnouts do not require an EPL. For these reasons, an EPL is not required for operation of the Proposal.

The Proposal includes the operation of crushing and grinding plant on site during construction. This plant would be used to recycle material that is acceptable for reuse from the demolition of buildings during the Early Works and to crush and sort any large material inadvertently brought to site during the importation of fill material. This plant would remain in operation throughout construction of the Proposal and it is estimated that over the duration of construction this plant would process in excess of 30,000 tonnes of material per annum. Under Clause 16(2), Schedule 1 of the POEO Act, this would trigger the need for an EPL for the construction phase of the Proposal for 'crushing, grinding and separating' of both on-site and imported materials. An EPL for this activity would be requested prior to commencement of these activities on-site.

A batching plant is to be utilised during construction. The proposed batching plant would only produce pre-mixed concrete to form the base slab for the Stage 2 site and would not produce concrete products. As such, an EPL (under Schedule 3, Clause 13) for concrete works is not required.

It is not envisaged that the warehousing component of the Proposal would require an EPL.

The POEO Act establishes a range of pollution offences and penalties that are applicable to all activities undertaken on a site. Specific pollution offences are created for actions associated with:

- Water pollution.
- Air pollution.
- Noise pollution.
- Land pollution.
- Littering and waste.

These potential areas of pollution from the Proposal have been assessed in Sections 7 to 20 of this EIS. Overall, construction and operation of the Proposal would be undertaken in accordance with the requirements of the POEO Act.

5.2.3 Roads Act 1993

The *Roads Act 1993* (Roads Act) administers activities in, on, under or over a public road. This Act is administered by NSW Roads and Maritime Services (Roads and Maritime), the local council or the NSW Land and Property Management Authority depending on the road classification. Roads and Maritime has jurisdiction over major roads, and the local council over local roads. Under Section 138 of the Act, approval is required for works undertaken within a public road reserve. An approval under Section 138 of the Roads Act must be consistent with any conditions of consent under Division 4.1, Part 4 of the EP&A Act (Section 89K(f), EP&A Act).

Moorebank Avenue, to the south of the intersection with Anzac Road, is owned by the Commonwealth of Australia and, as such, the *Roads Act 1993* does not apply. Notwithstanding, it is acknowledged that Moorebank Avenue is utilised by the public and an assessment of potential impacts has been undertaken and is provided in Section 7 and Appendix M of this EIS.

Section 138 approval will be required from Liverpool City Council and Roads and Maritime for works on the Moorebank Avenue and Anzac Road intersection and north of this intersection, and may also be required from time to time during construction for the occupancy of other roads in the vicinity of the Proposal, such as Bapaume Road.

5.2.4 Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act 1995* (TSC Act) sets out provisions for planning and assessment of impacts on threatened species, populations and ecological communities listed under schedules 1, 1A and 2 of the TSC Act.

The TSC Act lists a number of factors to be taken into account in deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats. Schedules 1 and 2 of the TSC Act lists species, populations or ecological communities of native flora and fauna considered to be threatened in NSW. DAs and environmental assessments which need consent are required to be assessed with regard to the purpose of the TSC Act and consideration given to the significance of any impact on listed species.

The Proposal will impact on threatened species and ecological communities listed under the TSC Act. A Biodiversity Assessment Report (Appendix Q of this EIS) has been prepared to assess and quantify the impacts to these threatened entities in accordance with the Framework for Biodiversity Assessment (FBA) requirements and outlines the corresponding offsetting requirements, which are to be addressed under the MPW Concept Approval.

5.2.5 Noxious Weeds Act 1993

The objects of the *Noxious Weeds Act 1993* (NW Act) relate to reducing the impact of weeds on NSW by preventing and restricting their spread. Under the NW Act the Minister may make a weed control order to manage the spread of certain weeds. The NW Act identifies individual classes (based on their prohibition in geographic areas) for types of noxious weeds.

A noxious weed that is classified as a Class 1, 2 or 5 noxious weed is referred to in the NW Act as a 'notifiable weed'. The occupier of land must notify the local council for the land that there are notifiable weeds present on the land. Weeds identified as 'Weeds of National Significance', listed by the Natural Resource Management Ministerial Council, are identified as Class 1, 2 or 5 noxious weeds under the NW Act.

Surveys of the MPW site identified 14 weeds listed under the NW Act for the Liverpool noxious weed control area. Further details of the extent and location of noxious weeds in the Proposal site are provided in Section 11 and Appendix Q of this EIS.

5.2.6 Contaminated Land Management Act 1997

The general objective of the *Contaminated Land Management Act 1997* (CLM Act) is to establish a process for investigating and (where appropriate) remediating land that the Environment Protection Authority (EPA) considers to be contaminated significantly enough to require regulation.

Section 5 of the CLM Act defines 'contamination' of land as meaning: the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.

Remediation of contamination 'hot spots' and removal of underground petroleum storage systems and tanks will be undertaken on the MPW site as part of the Early Works for the MPW Project. These works will be undertaken in accordance with the approved Remediation Action Plan (RAP) and do not form part of this Proposal.

The Proposal includes further remediation of parts of the site for the operation of the IMT and associated warehousing. Further assessment of the remaining contamination and remediation to be undertaken for the Proposal is provided in Section 13 and Appendix S of this EIS.

5.2.7 Water Management Act 2000

The object of the *Water Management Act 2000* (WM Act) is to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations. The WM Act provides for the preparation of water sharing plans that set extraction limits and rules for water access, available water determinations, account management and trading in order to protect water sources and their dependent ecosystems, whilst recognising the social and economic benefits of the sustainable and efficient use of water (Aquifer interference policy).

As discussed above (Section 5.2.1 of this EIS) Section 89J of the EP&A Act lists the parts of the WM Act that do not apply to SSD. This section however excludes an aquifer interference approval that may be required under Section 91 of the WM Act.

The Proposal includes piling works which have the potential to interact with the water table, on-site aquifers and therefore there is the potential for an aquifer interference being required. Further consideration of the potential of these works to intercept groundwater is provided in Section 13 and Appendix S of this EIS.

5.3 State and regional environmental planning policies

5.3.1 State Environmental Planning Policy (State and Regional Development) 2011

The aims of the SEPP(S&RD) are:

- To identify development that is SSD
- To identify development that is State Significant Infrastructure (SSI) and critical State Significant Infrastructure
- To confer functions on joint regional planning panels to determine development applications.

Development is declared to be SSD if the development on the land concerned is by the operation of an environmental planning instrument, not permissible without development approval under Part 4 of the EP&A Act and the development is identified in Schedule 1 or 2 of the SEPP(S&RD).

Under Clause 19, Schedule 1 of the SEPP(S&RD), development for the purposes of 'railway freight terminals' and /or associated with 'railway infrastructure for the purposes of container packing, storing or examining', with a capital investment value of more than \$30 million, is classified as SSD and assessable under Part 4, Division 4.1 of the EP&A Act. Furthermore, Clause 12, Schedule 1 of SEPP(S&RD) states that a 'development that has a capital investment value of more than \$50 million for the purpose of warehouses or distribution centres (including container storage facilities) at one location and related to the same operation' is also classified as an SSD.

Therefore, the Proposal is considered to be a development specified in Schedule 1 (Clause 12 and 19), as it has a capital investment value of more than \$30 million, is for the purpose of an intermodal facility associated with railway infrastructure, and is for the purpose of commercial premises and container packing, storage or examination facilities. The Proposal therefore satisfies the criteria in paragraph (b) of clause 8(1) of the SEPP(S&RD).

Under Clause 11 of SEPP(S&RD) development control plans (DCPs), developed under LEPs, are not applicable to SSD. Notwithstanding this, consideration of the Proposal having regard to the Liverpool Development Control Plan 2008 has been provided in Section 5.4.2 of this EIS.

5.3.2 State Environmental Planning Policy (Infrastructure) 2007

The *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) aims to facilitate the effective delivery of infrastructure across NSW. Part 3 Division 15 of ISEPP relates to railway infrastructure and development within rail corridors. Clause 81 permits 'rail freight intermodal facilities' by any person with development consent in 'prescribed zones', which include IN1 General Industrial and SP2 Infrastructure zones.

The Proposal site is located within Zone IN1 General Industrial, SP2 Infrastructure and E3 Environmental Management under the Liverpool LEP (refer to Section 5.4.1 of this EIS). All of the works permitted within these zones are permissible under the Liverpool LEP with development consent and therefore the ISEPP provision for 'rail freight intermodal facilities' is not necessary to be applied for the Proposal.

Clause 104 applies to projects listed in Schedule 3 of the ISEPP, being traffic generating development which is to be referred to the Roads and Traffic Authority (now Roads and Maritime). Schedule 3 lists 'freight intermodal facilities and freight terminals' of any size or capacity. Accordingly, Roads and Maritime have been consulted during the

preparation of this EIS (refer to Section 6 of this EIS). Further an impact of the traffic generation for the Proposal has been provided in Section 7 and Appendix M of this EIS.

5.3.3 State Environmental Planning Policy No.33 – Hazardous and offensive development

State Environmental Planning Policy No. 33- Hazardous and Offensive Development (SEPP 33) links the permissibility of an industrial development proposal to its safety and environmental performance. Certain activities may involve handling, storing or processing a range of materials, which, in the absence of controls, may create risk outside of operational borders to people, property or the environment. Such activities would be defined by SEPP 33 as a 'potentially hazardous industry' or 'potentially offensive industry'. SEPP 33 applies to any industrial development proposals which fall within these definitions.

A hazard and risk impact assessment has been prepared for the Proposal, in accordance with SEPP 33 and is included in Section 14 of this EIS. A number of dangerous goods have the potential to be transported, on the SSFL, to or from the Proposal and Port Botany. Notwithstanding this, the Proposal would not receive or store dangerous goods in quantities greater than the screening thresholds identified in Applying SEPP 33. On this basis a Preliminary Hazard Assessment is not required at this stage.

5.3.4 State Environmental Planning Policy No. 55 – Remediation of land

The *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55) provides controls and guidelines for the remediation of contaminated land. In particular, this policy aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. SEPP 55 imposes obligations on landholders to undertake any remediation work in accordance with relevant guidelines developed under the CLM Act (discussed above) and to notify the relevant Council of certain matters in relation to any remediation work.

SEPP 55 provides for Category 1 and Category 2 remediation. Projects classified as Category 1 require development consent, while projects classified as Category 2 do not require development consent. The proposed scope of work is considered a Category 1 remediation work as the development of the Proposal requires consent under Part 4, Division 4.1 of the EP&A Act.

A Phase 2 Environmental Assessment has been prepared for the Proposal, which summarises the investigations undertaken to date as part of the MPW Concept Approval and the works to be undertaken for the Early Works. More importantly, this Phase 2 Environmental Assessment provides an assessment of the remediation works to be undertaken as part of the Proposal. The report is summarised in Section 13 and included as Appendix S to this EIS.

5.3.5 State Environmental Planning Policy No. 64 – Advertising and signage

State Environmental Planning Policy No. 64 - Advertising and Signage (SEPP 64) aims to ensure that signage is compatible with its surroundings, provides effective communication and is of high quality design. Clause 8 states that a consent authority must not grant consent to a DA unless it is consistent with the objectives and assessment criteria provided in this SEPP.

The Proposal includes signage which would be visible from a public area, Moorebank Avenue, and therefore is subject to approval under SEPP 64 (refer to Section 4 and Appendix D of this EIS). Overall, the Proposal is considered consistent with the objectives of SEPP 64 (Clause 3) in that, the signage would be compatible with the surrounding area, provides suitable communication for wayfinding and would be of high design quality. An assessment of the Proposal having regard to the assessment criteria provided in this SEPP (Schedule 1) is provided in Table 5-5. In summary the Proposal complies with the provisions of SEPP 64.

Table 5-5: SEPP 64 (Schedule 1) assessment

Consideration	Compliance
Character of the area	The surrounding area does not have a desired future character, however the signage included in the Proposal has been designed to integrate into the surrounding area with the assistance of landscaping and also a discrete selection of materials and finishes (refer to Section 4 of this EIS).
Special areas	The signage has been designed to ensure that it would not detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas.
Views and vistas	The proposed signage would not impact on any existing views or dominate the skyline in the area. As discussed, the signage has been designed to integrate into the surrounding area as a result of landscaping and suitable materials and finishes.
Streetscape, setting or landscape	The signage has been designed to create visual interest and be of appropriate scale and design for the Moorebank Avenue streetscape.
Site and building	The signage has been designed to be of a scale that is reflective and consistent with the proposed buildings (administration facility and warehousing) and structures (containers) located on Proposal site. The signage will not detract from this building or infrastructure.
Associated devices and logos with advertisements and advertising structures	Some of the signage proposed includes way finding signs which have been designed to improve access to and within the site. This signage has been located in highly visual areas to improve safety and maximise efficiency.
Illumination	Signs would be illuminated to ensure suitable visibility. The signs have been located in areas that are not visually prominent outside of the Moorebank Precinct to minimise light spill and impact on surrounding land uses.
Safety	Overall the signage proposed has been designed to improve access to the site and vehicle movement within the Proposal's operational area thereby improving safety of vehicle and pedestrian movements.

5.3.6 Greater Metropolitan Regional Environmental Plan No.2 – Georges River Catchment

Greater Metropolitan Regional Environmental Plan No 2 – Georges River Catchment (REP 2) (now a deemed SEPP) aims to maintain and improve the water quality and river flows of the Georges River and its catchment, and to establish a consistent and coordinated approach to environmental planning and assessment for land along the Georges River and its tributaries.

This EIS considers the relevant matters of REP 2 to the Proposal. These planning controls, matters for consideration and where they are addressed within this EIS are provided in Table 5-6 .

Table 5-6: REP 2 Matters for Consideration

Matters for Consideration	Where Addressed
Section 11(9) Industry	
The potential cumulative environmental impact of any industrial uses on water quality within the Catchment.	Section 12 and Appendix R of this EIS.
The adequacy of proposed stormwater controls and whether the proposal meets the Council's requirements for stormwater management.	Section 12 and Appendix R of this EIS.
Whether proposed erosion control measures meet the criteria set out in <i>Managing Urban Stormwater: Soil and Construction Handbook</i> (1998) prepared by and available from Landcom and the Department of Housing.	Sections 12 and 13 and Appendix R of this EIS.
Likely impact on groundwater and remnant vegetation.	Sections 11, 12, 13 and Appendices Q, R and S of this EIS.
The possibility of reusing treated waste water on land and the adequacy of proposed waste water disposal options.	Sections 12 and 20.3 and Appendices H and R of this EIS.
Whether adequate provision has been made to incorporate vegetated buffer areas to protect watercourses, foreshores or other environmentally sensitive areas where new development is proposed.	Section 11 and Appendix Q of this EIS.
The adequacy of planned waste water disposal options.	Section 20.3 and Appendix H of this EIS.
Section 11(20) Stormwater Management System or Works	
That untreated stormwater is not disposed of into the Georges River or its tributaries.	Sections 12 and 20.3 and Appendices H and R of this EIS.
The likely impact of stormwater disposal on the quality of any receiving waters.	Section 12 and Appendix R of this EIS.
That the levels of nutrients and sediments entering the waterway are not increased by the proposed development.	Section 12 and Appendix R of this EIS.

Matters for Consideration	Where Addressed
<p>Whether any proposals to manage stormwater are in accordance with the local council's stormwater management plans and the Managing Urban Stormwater series of documents and meet the local council's stormwater management objectives.</p>	<p>Section 12 and Appendix R of this EIS.</p>
<p>Whether the principles outlined in the <i>Managing Urban Stormwater Soils and Construction Handbook</i> (1998) prepared by and available from Landcom and the Department of Housing are followed during each stage of a development (including subdivision).</p>	<p>Section 12 and 13, and Appendix R of this EIS.</p>
<p>Whether the proposal satisfies the local council's sediment control plan or, if no such plan has been prepared, any erosion and sediment policies adopted by the local council.</p>	<p>Sections 12 and 13, and Appendix R of this EIS.</p>
<p>Section 11(21) Development in Vegetated Buffer Areas</p>	
<p>Bushfire hazard reduction measures are not to be confined to the vegetated buffer area.</p>	<p>Section 20.2 and Appendix W of this EIS</p>
<p>Whether the proposed vegetated buffer will act as a buffer between developed land and environmentally sensitive areas, including adjacent waterways.</p>	<p>The vegetated buffer along the eastern edge of the Georges River would be maintained as a buffer between the river and the Proposal. This area has been identified as an offset area within the Concept Plan Approval, which will be maintained in perpetuity. Section 11 and Appendix Q of this EIS.</p>
<p>Whether the following specifications have been satisfied for the proposed vegetated buffer area:</p> <ul style="list-style-type: none"> a) 100 m minimum buffer width from the edge of the gorge or the top of the banks of the Georges River and its tributaries on currently forested Crown lands and natural bushland classified as community land under the <i>Local Government Act 1993</i>, b) 40 m minimum buffer width from the edge of the gorge or the top of the banks of the Georges River and its tributaries on freehold land that has not been previously developed or cleared, c) 40 m minimum buffer widths from wetlands identified by the National Parks and Wildlife Service and local council State of the 	<p>Development of the Proposal would be in accordance with the MPW Concept Approval. The majority of the MPW site has previously been cleared and developed for Defence purposes and does not constitute natural bushland or land that has not been developed or cleared. The minimum buffer (offset area) identified for the MPW Project along the eastern bank of the Georges River is of variable width, but is generally greater than 40 m in width, providing a buffer along the edge of the Georges River. Section 11 and Appendix Q of this EIS.</p>

Matters for Consideration	Where Addressed
<p>Environment Reports required under the <i>Local Government Act 1993</i>, d) 40 m minimum buffer width from other environmentally sensitive areas, including remnant vegetation and steep slopes, identified on maps prepared by and available from the National Parks and Wildlife Service.</p>	
<p>The requirements of the document entitled <i>Planning for Bush Fire Protection</i>, ISBN 0 9751033 2 6, prepared by the NSW Rural Fire Service in co-operation with the Department of Planning, dated December 2006.</p>	<p>Section 20.2 and Appendix W of this EIS.</p>
<p>The requirements of the NSW <i>State Rivers and Estuaries Policy</i> prepared by and available from the Department of Land and Water Conservation and the NSW <i>Wetlands Management Policy</i> prepared by and available from that Department where the development proposals are likely to impact on the quality of water and river flows of the Georges River or its tributaries.</p>	<p>Section 12 and Appendix R of this EIS.</p>
<p>The need to filter runoff from developed areas to improve water quality within the Georges River and its tributaries.</p>	<p>Section 12 and Appendix R of this EIS.</p>
<p>The need to reduce the loss of riparian vegetation and to remove invasive weed species.</p>	<p>Section 11 and Appendix Q of this EIS.</p>
<p>The need to minimise damage to river banks and channels so as to reduce bank erosion.</p>	<p>Sections 11, 12 and 13 and Appendices Q and R of this EIS.</p>
<p>The need to increase or maintain terrestrial and aquatic biological diversity and to provide fauna habitat and corridors.</p>	<p>Section 11 and Appendix Q of this EIS.</p>

5.4 Local Environmental Plan and Development Control Plan

5.4.1 Liverpool Local Environmental Plan 2008

The Liverpool LEP is applicable to the MPW site. The aims of the Liverpool LEP are:

- to encourage a range of housing, employment, recreation and services to meet the needs of existing and future residents of Liverpool,
- to foster economic, environmental and social well-being so that Liverpool continues to develop as a sustainable and prosperous place to live, work and visit,
- to provide community and recreation facilities, maintain suitable amenity and offer a variety of quality lifestyle opportunities to a diverse population,

- to strengthen the regional position of the Liverpool city centre as the service and employment centre for Sydney’s south west region,
- to concentrate intensive land uses and trip-generating activities in locations most accessible to transport and centres,
- to promote the efficient and equitable provision of public services, infrastructure and amenities,
- to conserve, protect and enhance the environmental and cultural heritage of Liverpool,
- to protect and enhance the natural environment in Liverpool, incorporating ecologically sustainable development,
- to minimise risk to the community in areas subject to environmental hazards, particularly flooding and bush fires,
- to promote a high standard of urban design that responds appropriately to the existing or desired future character of areas.

The relevant provisions of the Liverpool LEP are considered below.

An LEP compliance summary table is provided in Table 5-7. Further detail on the relevant provisions are also considered below.

Table 5-7: Compliance table for LEP controls relevant to the Proposal

LEP clause	Development standard	Proposal	Complies
Zoning (Land Use Table)	the Proposal site is located in the following zones: <ul style="list-style-type: none"> ▪ IN1 General Industrial ▪ E3 Environmental Management ▪ SP2 Infrastructure 	The Proposal includes an IMT, Rail connection and warehousing. These uses are permissible with development consent under the relevant LEP zoning.	Yes
Height of buildings (Clause 4.3)	Maximum building height limit of 21 m for the Proposal site.	The Proposal includes the importation of fill which would raise the Proposal site above existing levels. The workshop included in the Proposal, upon this raised level, would exceed the maximum building height limit.	No – 4.6 exemption to be submitted as part of the Modification Proposal (refer to below).
Floor space ratio (Clause 4.4)	Maximum floor space ratio (FSR) of 1.0 for the Proposal site.	The Proposal site (with the exception of areas of road upgrades) would have a FSR of approximately 0.12, which is well below the development standard.	Yes
Subdivision and Lot Size (Clause 4.1)	Minimum subdivision lot size for the Proposal site is 120 hectares.	The Proposal includes the subdivision of the Proposal site into a number of lots associated with the proposed IMT, Rail link connection, warehousing and conservation area	No - 4.6 exemption to be submitted as part of the Modification Proposal

LEP clause	Development standard	Proposal	Complies
		uses (refer to Section 4 and Appendix D of this EIS). The majority of these lots are below the minimum lot size development standard.	(refer to below).
Preservation of Trees or Vegetation (Clause 5.9)	The Liverpool LEP aims to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation. Development consent is required for native vegetation clearing.	The Proposal seeks development consent for the removal of native vegetation. A comprehensive biodiversity assessment and a Landscape Design Statement and Landscape Plans have been undertaken to address these impacts (refer to Appendix E and Q of this EIS).	Yes
Heritage Conservation (Clasue 5.10)	The Liverpool LEP outlines heritage conservation areas and requirements for consent with regards to impacting on heritage items.	The Proposal seeks approval for impacts on heritage items listed under the LEP. A Non-Indigenous Impact Assessment has been undertaken and is included at Appendix V of this EIS.	Yes
Environmentally Significant Land (Clause 7.6)	The Liverpool LEP outlines objectives and considerations with regard to the identification, maintenance and protection of environmentally significant land.	Several areas of remnant, native vegetation within the Proposal site are mapped as 'Environmentally Significant Land' under the Liverpool LEP. A comprehensive biodiversity assessment has been undertaken to address these impacts (refer to Appendix Q of this EIS).	Yes
Acid Sulfate Soils (Clause 7.7)	The Proposal site includes works within the following Class 1 (Georges River) and Clase 5 (western side fo the Proposal site) of Acid sulfate soil. Development consent is required for the works to be undertaken for the Proposal.	The Proposal includes the construction of three drainage channels extending from OSD basins to the Georges River. These works have the potential to encounter acid sulfate soils which has been addressed in Section 13 and Appendix S of this EIS.	Yes

LEP clause	Development standard	Proposal	Complies
Flood Planning (Clause 7.8)	The Liverpool LEP requires development consent to be obtained for earthworks, the erection of a building, the carrying out of a work and/or flood mitigation works in a flood planning area.	The western and northern-most extents of the MPW site are identified as being affected by flooding. A comprehensive assessment of flooding issues is included within Section 12 and Appendix R of this EIS.	Yes
Foreshore Building Line (Clause 7.9)	Clause 7.9 of the Liverpool LEP identifies a foreshore building line on the western part of the Proposal site parallel with the Georges River.	The majority of the Proposal is located outside of the foreshore building line, with the exception of three overland flow drainage channels. These channels are consistent with the considerations of this clause (refer to Section 12 and Appendix R of this EIS).	Yes
Moorebank South Industrial Precinct (Clause 7.27)	The northern-most portion of the MPW site is mapped under the Liverpool LEP as part of the Moorebank South Industrial Precinct.	Objectives to be considered in accordance with Clause 7.27 are addressed within relevant Sections of this EIS (refer to Table 5-11 of this EIS for Section references). The Proposal is considered to be consistent with this development standard.	Yes
Moorebank Intermodal Terminal (Clause 7.36)	The MPW site is mapped within the Liverpool LEP as being located within a number of key sites. The Liverpool LEP outlines arrangements for infrastructure arising out of the development of intermodal terminal at Casula and Moorebank. Clause 22 (Schedule 1: Additional permitted uses) of the Liverpool LEP provides controls for Use of certain land at Casula and Moorebank.	A discussion of the Proposal in consideration of these sites is provided in Table 5-12. In summary, the Proposal is considered to consistent with this development standard.	Yes

The Concept Plan Approval is to be modified to accommodate non-compliances relating to the Liverpool LEP (i.e. regarding Clauses 4.1 (subdivision) and 4.3 (building height)). The Response to Submissions report, currently under preparation for the Modification Proposal would be updated to seek approval for these non-compliances and, in particular, include an 'Exceptions to Development Standards' under clause 4.6 of the Liverpool LEP to justify these non-compliances (refer to Section 1.4.1 of this EIS).

Zoning and permissibility

The Proposal site is located within a number of zones under the Liverpool LEP as shown in Table 5-8 and Table 5-1. The zoning objectives and permissibility of the Proposal in consideration of this zoning is also provided in Table 5-8.

Table 5-8: Zoning and objectives under the Liverpool LEP

Zoning	Objectives	Permissibility
IN1 General Industrial	<ul style="list-style-type: none"> ▪ To provide a wide range of industrial and warehouse land uses. ▪ To encourage employment opportunities. ▪ To minimise any adverse effect of industry on other land uses. ▪ To support and protect industrial land for industrial uses. ▪ To particularly encourage research and development industries by prohibiting land uses that are typically unsightly or unpleasant. ▪ To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area. 	'Freight facilities' (includes the IMT) and 'warehouse or distribution centres' (warehousing) is permitted with consent
E3 Environmental Management	<ul style="list-style-type: none"> ▪ To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values. ▪ To provide for a limited range of development that does not have an adverse effect on those values. ▪ To enable the recreational enjoyment or scientific study of the natural environment. 	'Flood mitigation works', works included within the Proposal, are permissible with consent. This permissibility is further supported by Schedule 1, Clause 22(2) which specifically identifies that drainage works are permissible in the IMT riparian corridor.

Zoning	Objectives	Permissibility
SP2 Infrastructure	<ul style="list-style-type: none"> ▪ To provide for infrastructure and related uses. ▪ To prevent development that is not compatible with or that may detract from the provision of infrastructure. ▪ To reserve land for the provision of infrastructure. 	'Roads', works included within the Proposal, are permissible with consent.

As identified above, the Proposal is considered permissible with development consent in relation to works within the relevant Liverpool LEP zones.

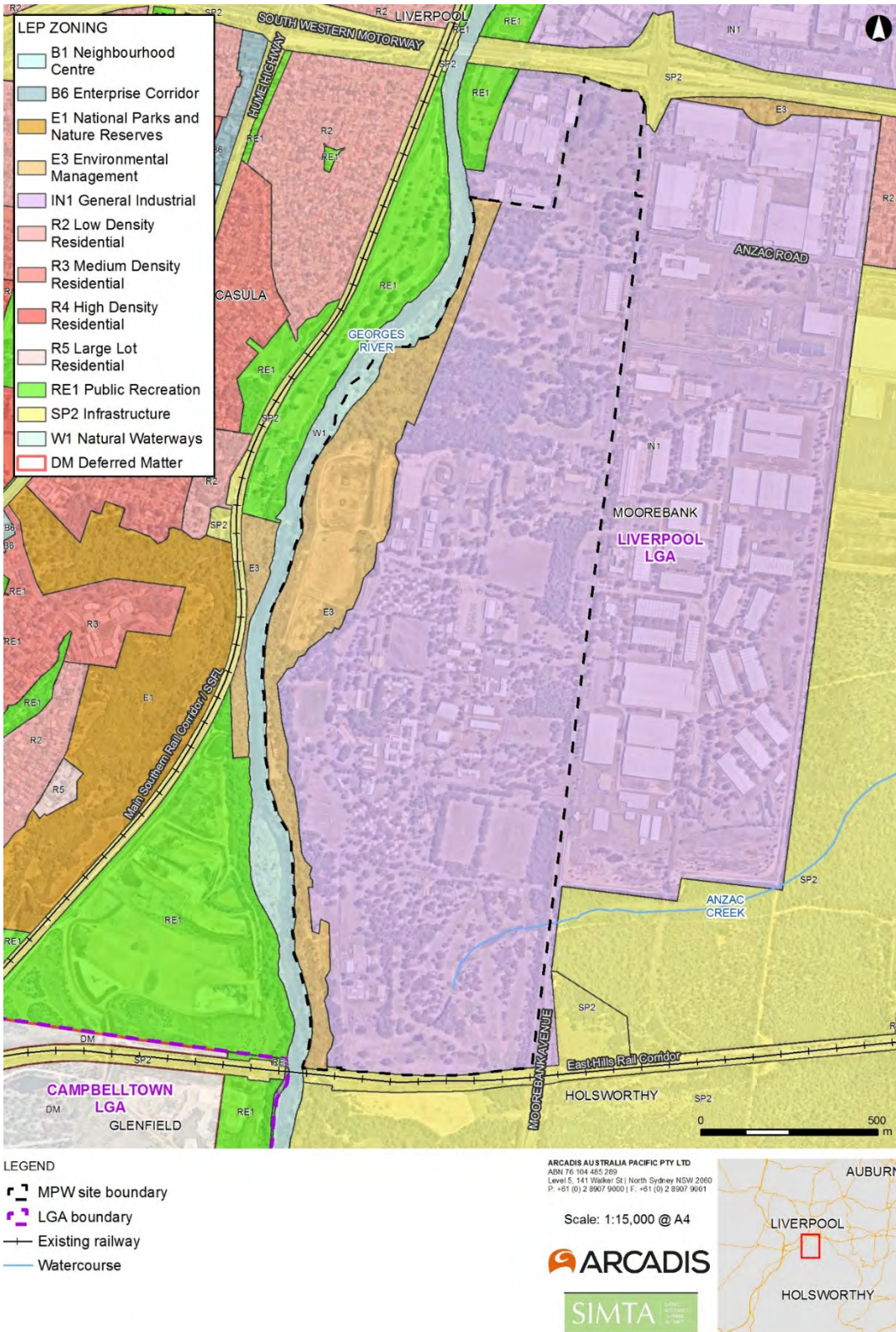


Figure 5-1: Zoning (Liverpool LEP and Campbelltown LEP 2015)

Subdivision and Lot Size

Clause 4.1 of the Liverpool LEP identifies the minimum subdivision lot size for the Proposal site as 120 hectares. The Concept Plan Approval does not consider subdivision of the MPW site and therefore it is envisaged that a modification to this approval, under Section 96 of the EP&A Act, is required for subdivision.

The Proposal includes the subdivision of the Proposal site into a number of lots associated with the proposed IMT, Rail link connection, warehousing and conservation area uses (refer to Section 4 and Appendix D of this EIS). The majority of these lots are below the minimum lot size identified within the Liverpool LEP. Subsequent to the modification (subject to approval), the Concept Plan Approval would supersede the Liverpool LEP development standard and therefore a non-compliance would be considered acceptable.

Height of buildings

Clause 4.3 of the Liverpool LEP, identifies as a maximum building height limit of 21 m for the Proposal site. The definition of building height (in metres) provided in the Liverpool LEP is “the vertical distance from ground level (existing) to the highest point of the building” (Dictionary).

The MPW Concept Approval provides a maximum height limit of 21 m for buildings however does not provide a definition for this measurement.

The Proposal includes the importation of fill which would raise the Proposal site. As discussed in Section 1, this importation of fill requires a modification to the Concept Plan Approval under Section 96 of the EP&A Act. The workshop included in the Proposal would exceed the height limit for the Proposal site identified in the Liverpool LEP. Notwithstanding this, subsequent to the modification (subject to approval) it is envisaged that the Proposal would comply with the definition of building height under the Liverpool LEP.

Floor space ratio

Clause 4.4 of the Liverpool LEP identifies a maximum floor space ratio (FSR) of 1.0 for the Proposal site. Subsequent to the development of the Proposal, the Proposal site (with the exception of areas of road upgrades) would have a FSR of approximately 0.02, which is considerably below the development standard. The Proposal is therefore compliant with the Liverpool LEP.

Preservation of Trees or Vegetation

The Liverpool LEP, Clause 5.9, aims to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation. A comprehensive biodiversity assessment has been undertaken to determine the potential impacts associated with tree removal arising from the Proposal. The outcomes of this assessment are discussed in Section 11 and Appendix Q of this EIS. A Landscape Design Statement and Landscape Plans have also been included in Appendix E of this EIS, which show the location of proposed revegetation for the Proposal.

Heritage Conservation

The MPW site is mapped as an item of environmental heritage under the provisions of the Liverpool LEP (Clause 5.10). The listing specifically includes ‘Australian Army Engineers Group, including RAE Memorial Chapel, RAE Monument, Major General Sir

Clive Steele Memorial Gates, Cust Hut'. Several of these items have been removed from the site during the Moorebank Units Relocation (MUR) program and the Cust Hut and building of the Memorial Chapel would be removed as part of the Early Works.

A heritage assessment has been prepared for the Proposal to assess the impact of the Proposal on the remaining heritage values of the MPW site. This is included in Appendix W and summarised in Section 17 of this EIS.

Environmentally Significant Land

Areas of remnant, native vegetation on the MPW site are mapped as 'Environmentally Significant Land' under the Liverpool LEP (Clause 7.6). In accordance with the LEP, the matters listed in Table 5-9 should be considered when determining whether a development should be permitted on Environmentally Significant Land. Table 5-9 also identifies where these matters are considered within this EIS.

Table 5-9: Considerations under Cl 7.6(2) Liverpool LEP - Environmentally sensitive land

Matter for consideration	Where addressed
(a) the condition and significance of the vegetation on the land and whether it should be substantially retained in that location	Section 11 and Appendix Q of this EIS.
(b) the importance of the vegetation in that particular location to native fauna	Section 11 and Appendix Q of this EIS.
(c) the sensitivity of the land and the effect of clearing vegetation	Sections 11 and 12 and Appendices Q and R of this EIS.
(d) the relative stability of the bed and banks of any waterbody that may be affected by the development, whether on the site, upstream or downstream	Section 12 and Appendix R of this EIS.
(e) the effect of the development on water quality, stream flow and the functions of aquatic ecosystems (such as habitat and connectivity).	Sections 11 and 12 and Appendices Q and R of this EIS.
(f) the effect of the development on public access to, and use of, any waterbody and its foreshores	Section 20.3 of this EIS.

Flood Planning

The Liverpool LEP (Clause 7.8) requires development consent to be obtained for earthworks, the erection of a building, the carrying out of a work and/or flood mitigation works (other than those carried out by a public authority) in a flood planning area. Development consent will not be granted unless it has been satisfactorily demonstrated that the proposal will meet the criteria listed within the Liverpool LEP. The western and northern-most extents of the MPW site are identified as being affected by flooding. A comprehensive assessment has been undertaken of flooding issues within Section 12 and Appendix R of this EIS which addresses each of the relevant matters listed in the Liverpool LEP.

Foreshore Building Line

The Liverpool LEP (Clause 7.9) establishes the foreshore building line and area below the foreshore building line, which extends along the western boundary of the MPW site. The LEP states provides a number of circumstances where development within the ‘area below the foreshore building line’ is permitted, including but not limited to; ‘the levels, depth or other exceptional features of the site make it appropriate to do so’.

The majority of the development included within the Proposal is outside of the foreshore building line with the exception of overland flow drainage corridors for the proposed OSD structures. The existing levels of the site and surrounds are such that drainage corridors are required to be developed to allow for retention and controlled discharge of run-off from the Proposal site to the Georges River (refer to Section 12 and Appendix R of this EIS). Notwithstanding this development within the foreshore building line the Proposal is considered to achieve the requirements for the matters for consideration as identified in Table 5-10.

Table 5-10: Considerations under Cl 7.9(3) Liverpool LEP – Foreshore building line

Matter for consideration	Where addressed
(a) will contribute to achieving the objectives for development in the zone in which it is to be carried out	Section 5.4.1 (above) of this EIS.
(b) will be compatible in its appearance with the surrounding area, as viewed from both the waterway concerned and the adjacent foreshore areas	Section 15 and Appendix T of this EIS.
(c) will not cause environmental harm, such as: (i) pollution or siltation of the waterway, or (ii) an adverse effect on surrounding uses, marine habitat, wetland areas, flora or fauna habitats, or (iii) an adverse effect on drainage patterns	Sections 11 and 12 and Appendices Q and R of this EIS.
(d) will not cause congestion of, or generate conflicts between, people using open space areas or the waterway	Section 20.3 of this EIS.
(e) will not compromise opportunities for the provision of continuous public access along the foreshore and to the waterway	Section 20.3 of this EIS.
(f) will maintain any historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance of the land on which the development is to be carried out and of surrounding land.	Sections 11, 16 and 17 and Appendices Q, V and W of this EIS.

Moorebank South Industrial Precinct

The northern-most portion of the MPW site is mapped under the Liverpool LEP as part of the Moorebank South Industrial Precinct. Under Clause 7.27 the objective is to ensure development is supportive of the future provision of appropriate regional public transport measures to reduce the demand for travel by private car and commercial vehicle. The objectives to be considered when assessing development proposals within this area are listed in Table 5-11, along with where they are addressed within this EIS.

Table 5-11: Considerations under CI 7.27(3) Liverpool LEP - Moorebank South Industrial Precinct

Matter for consideration	Where addressed
(a) to provide a street pattern that enables direct public transport links between the M5 Motorway Moorebank Avenue interchange, the East Hills rail line at the Moorebank Avenue bridge and Anzac Road, Wattle Grove	Section 4 and 7 and Appendix M of this EIS.
(b) to provide a subdivision pattern that enables ready access through the precinct by pedestrians and cyclists	Section 4 and 7 and Appendix D and M of this EIS.
(c) to orientate entrances, windows and other active frontages toward the street or paths to contribute toward creating a safer pedestrian environment	Section 20.3 and Appendix D of this EIS.
(d) to provide facilities that encourage walking and cycling between the development and existing or potential public transport.	Section 4 and 7 and Appendix D and M of this EIS.

Moorebank Intermodal Terminal

The MPW site is mapped within the Liverpool LEP 2008 as being located within a number of key sites as identified in Table 5-12. Further, the LEP provides a number of additional requirements and uses for these identified key sites as described in Table 5-10. Table 5-10 also provides a discussion on the Proposal in consideration of these provisions. In summary, the Proposal is considered to comply with this development standard.

Table 5-12: Key sites under the Liverpool LEP - Moorebank Intermodal Terminal

Site name / LEP reference	General description	LEP development standard	Proposal comment
Key site – IMT Area (Clause 7.36)	MPW site (all).	Development consent must not be granted to development for the purposes of an IMT on land in the IMT Area unless the Secretary has certified in writing to the consent authority that satisfactory arrangements have been made to contribute to the provision of relevant State public infrastructure in relation to that land.	The Proposal includes the development of an IMT and associated warehousing. Section 7 and Appendix M of the EIS provides further information on the traffic generated by the Proposal.

Site name / LEP reference	General description	LEP development standard	Proposal comment
		<p>It is noted that the above does not apply if the:</p> <ul style="list-style-type: none"> ▪ the development will not result in a significant net increase in traffic to or from the IMT Area, or ▪ the development is of a minor nature or is a precursor to development for an IMT. 	<p>Contributions, as relevant, to public infrastructure would be further discussed with the relevant agencies prior to approval of the Proposal.</p>
<p>Key site – IMT Rail Corridor (Schedule 1, Clause 22(1))</p>	<p>Rail link from the western bank of Georges River to the SSFL connection.</p>	<p>Rail infrastructure is permitted with development consent on land in Zone RE1 Public Recreation, Zone E3 Environmental Management and Zone W1 Natural Waterways identified as “IMT Rail Corridor”.</p>	<p>The Proposal includes the development of rail infrastructure, the rail link connection, on land within the Zone IN1 General Industrial only. The MPE Stage 1 Proposal (subject to approval) would facilitate for the development of the Rail link, which is subject to a separate approval.</p>
<p>Key site – IMT Riparian Corridor (Schedule 1, Clause 22(2))</p>	<p>Conservation area, eastern bank of Georges River.</p>	<p>Development for the purposes of drainage is permitted with development consent but only on land in Zone E3 Environmental Management identified as “IMT Riparian Corridor”.</p>	<p>The Proposal includes development for the purposes of drainage, the drainage channels, on land within the Zone E3 Environmental Management identified as the “IMT Riparian Corridor”. These works are therefore considered permissible with development consent.</p>
<p>Key site – IMT Recreation Area (Schedule 1, Clause 22(3))</p>	<p>The ‘dust bowl’, central part of the conservation area.</p>	<p>Development for the purposes of a recreation facility (outdoor) or recreation area is permitted with development consent but only on land in Zone E3 Environmental Management identified as “IMT Recreation Area”.</p>	<p>The Proposal includes the establishment of the conservation area however at this stage this area, within the Zone E3 Environmental Management identified as “IMT Recreation Area” is not identified for a recreational facility or recreation area.</p>

5.4.2 Liverpool Development Control Plan 2008

The Liverpool Development Control Plan 2008 (the Liverpool DCP) provides the more detailed development controls that generally apply to the LGA. In addition to the general provisions within Parts 1.1 and 1.2, Part 2.4 includes a range of site-specific provisions that have been developed for the Moorebank Defence Lands, which includes the northern-most part of the MPW site and Part 7, which is applicable to industrially zoned land under the Liverpool LEP (i.e. the remainder of the MPW site). Under Clause 11 of SEPP(S&RD) DCPs, developed under LEPs, are not applicable to SSD. Notwithstanding this, an assessment of the Proposal in consideration of the DCP has been provided below.

The Proposal is considered generally compliant with the requirements of the applicable DCP parts as the Proposal will:

- Deliver an IMT facility which would act as a keystone for attracting industrial and business development to the Moorebank Defence Lands and industrially zones areas.
- Attract land uses which would complement, and not compete with, the employment role of the Liverpool CBD.
- Provide a concentrated freight and logistics employment hub, which would provide key employment opportunities for the surrounding residential community, and accordingly promote close to home work opportunities.
- Include travel demand measures to promote employee use of public transport and alternative travel modes such as bicycle or walking.
- Locate uses across the site in a manner that responds to the needs of surrounding land uses and accommodates mitigation measures such as landscaping, water sensitive urban design (WSUD) and flood mitigation.
- Provide high quality landscaping that establishes an attractive streetscape character, provides consistency with surrounding biodiversity values and reduces the visual impact of industrial buildings & car parking areas.
- Provide warehousing of a high design standard and aesthetic nature which would contribute to the neighbouring industrial context without detracting from surrounding sensitive land uses.
- Commit to employing Ecologically Sustainable Development (ESD) principles in the design and development of the IMT facility and warehousing (refer to Section 20.4 of this EIS).

6 CONSULTATION

MIC have undertaken on-going consultation with government agencies, key stakeholders and the community throughout the preparation of the MPW Concept EIS. SIMTA propose to continue this consultation throughout the development of each stage of the MPW Concept. The consultation undertaken previously and more recently undertaken has been a key consideration for the design, construction and operation the Proposal.

A *Community and Stakeholder Consultation Outcomes Report* has been prepared by Elton Consulting (refer to Appendix L of this EIS) to highlight previous (MPW Concept Approval) and recent (Proposal) consultation undertaken with key stakeholders and the community. This reporting has been supplemented by other specific consultation activities undertaken during the preparation of this EIS. The *Community and Stakeholder Consultation Outcomes Report* and this Section of the EIS have been prepared to address the SEARs issued for the Proposal. Table 6-1 provides a summary of the SEARs and the sections where they have been addressed in this EIS.

Table 6-1: SEARs (consultation)

Section/Number	Requirement	Where addressed
Consultation	<p>During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners.</p> <p>During preparation of the EIS, the applicant must convene a meeting with regard to proposed traffic assumptions and mitigation measures and invite Liverpool City Council, Campbelltown City Council, Roads and Maritime Services and TfNSW, in accordance with the requirements of the MIC Concept Approval SSD_5066.</p> <p>In particular you must consult with:</p> <ul style="list-style-type: none"> ▪ Local, State or Commonwealth government authorities, including the: <ul style="list-style-type: none"> – Commonwealth Department of the Environment; – Environment Protection Authority; – Office of Environment and Heritage; – Transport for NSW; – Department of Primary Industries (Fisheries & Office of Water); – NSW Rural Fire Service; – NSW Health; – Sydney Ports Corporation; – Liverpool City Council; and – Campbelltown City Council. 	Section 6.4 of this EIS
	<ul style="list-style-type: none"> ▪ Service and infrastructure providers: <ul style="list-style-type: none"> – Roads and Maritime Services; 	Section 6.4 of this EIS

Section/Number	Requirement	Where addressed
	<ul style="list-style-type: none"> - Australian Rail Track Corporation; - Sydney Trains; - Sydney Water Corporation; - Endeavour Energy; - Jemena; - Telstra; and - AGL Upstream Investments Pty Ltd. 	
	<ul style="list-style-type: none"> ▪ Specialist interest groups, including Local Aboriginal Land Councils; and 	Section 6.4 of this EIS
	<ul style="list-style-type: none"> ▪ The public, including community groups and adjoining and affected landowners. 	Section 6.4 and 6.4 of this EIS
	<p>The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.</p>	Section 6.5 of this EIS

This section describes the communication and engagement activities undertaken previously, during the MPW Concept Approval, and more recently during the preparation of the EIS for the Proposal in accordance with the SEARs.

6.1 Background

6.1.1 Community consultation objectives

The *Community and Stakeholder Consultation Outcomes Report* provides a summary of the objectives that have been implemented to engage with stakeholders and raise awareness of the Proposal (refer to Appendix L of this EIS). These have been prepared to provide opportunities for involvement at each stage of the MPW Project. The objectives include:

- Identify key community stakeholders with an interest in the Proposal
- Provide accurate and relevant information about the Proposal to local residents and community stakeholders to create awareness about the Proposal
- Provide a means by which stakeholders could comment on the proposed plans prior to their finalisation
- Provide the SIMTA Project team with the opportunity to incorporate stakeholder feedback into the planning and development process.

6.1.2 Best Practice Principles

The objectives listed above are also underpinned by best practice principles which have been adopted for the Concept Plan Approval and the Stage 1 Proposal for consultation with government agencies, key stakeholders and the community. These best practice principles include:

- The project team is a 'guest' within the community – SIMTA's project team acknowledges they are a guest within the community for the duration of the project – and will respect local residents, businesses and other stakeholders during this time.
- Aim for 'no surprises' – A 'no surprises' approach during the planning process requires close community and stakeholder interaction to be maintained. This will build trust within the community.
- Delivering on promises – SIMTA will deliver on its promises and, importantly, be seen to be delivering them. This is crucial to building and maintaining stakeholder trust in the context of this Proposal.
- Understanding diverse stakeholder interests and values – SIMTA is committed to identifying and understanding the range of stakeholder issues, values and concerns related to the Proposal.
- Quality and timely information to all affected stakeholders – SIMTA will provide relevant, up to-date and accessible information to all affected stakeholders at planning milestones.
- Develop effective, two-way communication with the community – SIMTA aims to create robust, constructive and respectful communication with community members affected by the Proposal. SIMTA will provide opportunities for the community to have their feedback considered and their concerns addressed throughout the planning process.

6.1.3 Consultation summary

As discussed above, MIC and, more recently, SIMTA have undertaken consultation progressively throughout the preparation of the MPW Concept Approval, EPBC Approval and MPW Concept Modification (Modification Proposal). The key consultation stages include the following:

Concept Plan Approval (SSD 5066):

- Lodgement of the Preliminary Project Environmental Overview in December 2011
- Preparation period for the EIS in 2014
- EIS exhibition period from 8 October – 8 December 2014
- Exhibition of Response to Submissions Report 28 May – 26 June 2015
- PAC Hearing on 1 February 2016 at the Bankstown Golf Club.

EPBC Approval (2011/6086):

- Environmental Impact Statement (EIS) exhibition period from 8 October 2014 to 8 December 2014 (draft) and October 2013 to 5 December 2013 (final).

Concept Plan Modification (SSD 5066 – MOD1) (currently under assessment):

- Preparation period of the Modification Report in June 2016

- Modification Report exhibition period from 7 July 2016 – 22 August 2016.

MPW Stage 2 Proposal

- Lodgement of the Preliminary Environmental Assessment in December 2011
- Preparation period for the EIS in late 2015 to Sept 2016.

SIMTA has considered the responses provided during all of the stages of consultation when finalising the design and EIS for the Proposal.

6.2 MPW Concept Approval consultation

A range of consultation activities were undertaken to inform, engage and interact with the local community and stakeholders in the preparation of the MPW Concept EIS. The level of consultation undertaken was reflective of the level of interest and concern shown by the stakeholders relating to the MPW Project and its likely impacts.

6.2.1 Consultation activities

Consultation activities undertaken provided information about the MPW Project to relevant stakeholders and allowed stakeholders the opportunity to provide feedback. A summary of the consultation undertaken is provided in the following sections.

Government agencies

A number of government agencies were consulted with during the preparation and exhibition of the MPW Concept EIS, including:

- The Commonwealth Department of Environment and Energy (DoEE)
- Environment Protection Authority (EPA)
- Office of Environment and Heritage (OEH)
- Transport for NSW (TfNSW)
- Department of Primary Industries (DPI) (Office of Water and Fisheries)
- NSW Rural Fire Service (RFS)
- NSW Health
- Sydney Ports Corporation
- Liverpool City Council (LCC)
- Campbelltown City Council (CCC).

Consultation with agencies and regulators with a high degree of interest in the MPW Project included, but was not limited to, face-to-face meetings, site visits, briefings and letters. Other agencies were consulted primarily through email and telephone communication.

Service and infrastructure providers

A number of service and infrastructure providers were consulted with during the preparation and exhibition of the MPW Concept EIS, including:

- Roads and Maritime Service (Roads and Maritime)
- Australian Rail Track Corporation (ARTC)
- Sydney Trains
- Sydney Water Corporation
- Endeavour Energy

- Jemena
- Telstra
- AGL Upstream Investments Pty Ltd.

Consultation of service and infrastructure providers included, but was not limited to, face-to-face meetings, briefings and letters, emails and telephone communication.

Community and other stakeholders

Consultation activities to inform and engage the community and other stakeholders began during 2010 as an ongoing process. Key consultation activities throughout this period have included:

- Establishment and ongoing updates to the MPW Project website (<http://www.micl.com.au>), providing information relating to the progress of the Project, details relating to the environmental assessment and consultation information
- Establishment of a Project Information Line to enable all stakeholders to provide feedback and ask questions
- Personal briefing sessions with residents who have contacted MIC through the Project website
- Community update newsletters sent to residential households within suburbs adjacent to the MPW site (including households in Casula, Wattle Grove, Holsworthy and Glenfield)
- Community information sessions to allow dissemination of information relating to the MPW Project, as well as to provide the community with the opportunity to ask questions, discuss any issues with members of the technical team and to take away fact sheets on some of the technical studies
- Stakeholder meetings were held with local community members to address particular concerns raised relating to the MPW Project.

Other community stakeholders, including community groups, adjacent landholders to the MPW site and nearby business owners were consulted via community information sessions outlined above (refer to Appendix L of this EIS).

Aboriginal heritage consultation

Aboriginal consultation was initiated at the commencement of the MPW Concept Approval through a detailed Aboriginal Heritage Assessment prepared by Navin Officer Heritage Consultants (NOHC). In 2012, the Moorebank project office adopted the *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW DECCW, 2010) in complying with the NSW SEARs.

An Aboriginal consultation program was prepared by NOHC for the MPW Concept Approval, which included initial contact with registered Aboriginal stakeholders through letters, telephone calls and emails, followed by consultation activities, including a field survey and a subsurface testing program with the following registered Aboriginal parties (RAPs):

- Tharawal Local Aboriginal Land Council (TLALC)
- Cubbitch Barta Native Title Claimants Aboriginal Corporation (CBNTCAC)
- Darug Land Observations (DLO)
- Darug Custodian Aboriginal Corporation (DCAC)
- Darug Aboriginal Cultural Heritage Assessments (DACHA)
- Darug Aboriginal Landcare Incorporated (DALI)

- Banyadjaminga
- Gandangara Local Aboriginal Land Council
- Tocomwall Pty Ltd.

RAPs were provided with a copy of the draft reports for sign-off prior to public exhibition.

6.2.2 Key issues

A number of key consultation stages were undertaken throughout the MPW Concept Approval to enable progressive community and stakeholder engagement at various stages along the Project's timeline.

A summary of the key community issues identified during the public exhibition phase of the MPW Concept EIS, and the Response to Submissions report⁷ is provided below in Table 6-2.

Submissions were individually reviewed and categorised according to their key issue and sub-issue. The top five key issues raised by the community included:

- Project site alternatives and justification
- Traffic, transport and access
- Noise and vibration impacts
- Local and regional air quality
- Human health risks and impacts.

Table 6-2: Summary of key community issues and responses for the MPW Concept Approval

Topic	Comment	Response
Project site alternatives and justification	The IMT should be located at Badgerys Creek	The need for an IMT in south-western Sydney was described in detail in Chapter 3 – Strategic context and need for the Project of the EIS, with Section 3.3 in particular detailing why the Moorebank site was selected. The Moorebank site was selected as a result of its large size and strategic positioning, with good access to existing major freight and rail corridors, and its central location relative to major freight markets in the west and south west of Sydney. The Badgerys Creek site is not ideally located relative to the Sydney freight markets, and does not currently have adequate road or rail supporting infrastructure.
	Moorebank is not a suitable site for the purposes of an IMT	The EIS for the MPW Concept Approval assessed the site for a range of impacts including traffic and transport, noise and vibration, human health, air quality and others, and determined that while impacts would occur, there would be no more than

⁷ A Supplementary Response to Submissions was also prepared however this was not formerly exhibited.

Topic	Comment	Response
		<p>moderate residual impacts once mitigation measures are implemented. Ongoing monitoring is also to be carried out to investigate and implement new or additional measures as required.</p>
	<p>The Proposed site should be developed for alternative uses</p>	<p>While suggestions for alternative uses of the site were acknowledged, these alternatives have not been assessed in detail for a number of reasons, including land contamination (preventing sensitive land development), traffic impacts (from residential development) and economic viability. The strategic context and need for the Project is outlined in Chapter 3 of the MPW Concept EIS.</p>
<p>Traffic , transport and access</p>	<p>Concerned about the impact of the Project on traffic congestion</p>	<p>Existing traffic congestion issues along some of the local roads and regional arterials within the vicinity of the Project are acknowledged. In particular, the M5 Motorway near the Moorebank Avenue interchange acts as a bottleneck within the motorway network. This is an issue outside of the scope of this Project and needs to be addressed on a regional basis.</p> <p>As explained within Chapter 11 – <i>Traffic, transport and access</i> of the MPW Concept EIS, the Project is predicted to result in reductions in vehicle kilometres travelled (VKT) on the Sydney regional road network.</p>
	<p>Concerned about the impacts of the Project on traffic safety</p>	<p>The Project would result in an increase in trucks travelling along the M5 Motorway during both construction and operation of the Project. It was recognised within the assessment that the increased congestion and inadequate weave distance associated with M5 Motorway would require more sophisticated traffic modelling.</p> <p>The indicative IMT layout provides a truck parking and holding area onsite to accommodate up to 25 trucks, to serve as a layover facility for trucks that arrive early and need to wait for their allocated time slot. The onsite truck parking and holding area would avoid the need for trucks to queue on Moorebank Avenue.</p>
	<p>Questions raised about the adequacy of the traffic</p>	<p>The modelling undertaken for the EIS did take into account regional traffic growth. As explained in Section 6.3.4 and presented in</p>

Topic	Comment	Response
	assessment, including modelling and assumptions;	Table 6.8 of Technical Paper 1 – <i>Traffic, Transport and Accessibility Impact Assessment</i> (Volume 3 of the MPW EIS), the modelling used growth rates supplied by RMS for the network in the vicinity of the Project site.
Noise and Vibration	Concerned about the impact of IMT operations, particularly at night	The MPW Concept EIS considers noise from IMT operations on the Project site. The design and construction of the Project will include measures to reduce and control night-time noise levels and specifically control noise from short-lived or high-noise events which may otherwise have the potential to disturb sleep (refer to Section 12.4 of Chapter 12 – <i>Noise and vibration of the MPW Concept EIS</i>).
	Concerned about the noise impacts of wheel squeal and the adequacy of mitigations to address this	The EIS has presented reasonable and feasible noise mitigation measures to control noise emissions within the surrounding communities. Once the detailed design is developed, the appropriateness of the noise mitigation measures will be further considered and assessed during the MPW Stage 2 EIS. The actual noise and mitigation measures adopted for the Project will be designed based on what will be built, the level of noise being omitted during construction and operation and best practice mitigation.
Local and regional air quality	Concerned about the impact of diesel fumes generated from locomotives, heavy vehicles and other equipment	Emissions from Project operations, including locomotive and truck movements, were quantified using the accepted published emission factors from a number of sources, including the NSW EPA, US EPA and National Pollution Inventory (NPI). A range of conservative assumptions were made, including the selection of worst case emission standard engine classes for locomotives, to provide an upper level estimation of emissions from the Project. The results of the air quality modelling, which were based on the emission calculations, indicate that the potential for adverse impact on the surrounding environment from air pollutants generated by the Project would be very low.
Human health risks and impacts	Concerned about the impacts on human health as a result of	Impacts on health associated with noise are discussed in Section 25.5.2 of Chapter 25 –

Topic	Comment	Response
	construction and operation of the IMT including exposure to pollutants and particulate matter, noise and other IMT construction and operational impacts.	<i>Human health risks and impacts</i> of the MPW Concept EIS. The air quality impacts on the health of the local community have been addressed in detail in the HHRA (Technical Paper 15 – <i>Human Impact Assessment</i> , in Volume 9 of the MPW Concept EIS) in accordance with a number of national and international peer reviewed sources.

6.3 MPW Concept Modification consultation

6.3.1 Consultation activities

Consultation activities have been undertaken with relevant stakeholders both prior to and during the public exhibition of the Modification Proposal. This response has been considered during the preparation of the EIS for the Proposal. A summary of the consultation undertaken is provided in the following sections.

Government agencies

Discussions relating to the Modification Proposal, at various stages of development, have been undertaken with DP&E periodically. The key discussions commenced in February 2016 and included meetings, emails and the provision of documentation identifying the proposed approach to the modification, the suitability of the proposal to be assessed under s96(2) of the EP&A Act and the potential environmental issues and mitigation measures to reduce this impact.

LCC was consulted on a number of occasions in late August 2016 for the Modification Proposal. In particular, LCC was provided with a presentation which gave a summary of the environmental assessment of the Modification Proposal.

In addition to the above, other government agencies have provided submissions as part of the public exhibition for the Modification Proposal, including the following:

- EPA
- Roads and Maritime
- OEH
- Heritage Council
- Roads and Maritime
- DPI
- Fairfield City Council
- LCC.

All of these submissions are currently being collated and responded to as part of the preparation of the Response to Submissions report to be provided to DP&E prior to the end of 2016.

Service and infrastructure providers

Service and utilities providers were consulted with during the exhibition of the Modification Report. A number of service and utilities providers provided submissions

as part of the public exhibition for the Modification Proposal, including Endeavour Energy and Sydney Water. These submissions are currently being collated and responded to as part of the preparation of the Response to Submissions report to be provided to DP&E prior to the end of 2016.

Community and other stakeholders

Community consultation was undertaken concurrently with exhibition of the Modification Report in August 2016. SIMTA distributed a newsletter to approximately 10,000 households in the suburbs surrounding the MPW site to inform them about the Modification Proposal, and detail how they could submit feedback or request more information. To date no submissions have been received specifically relating to this newsletter.

Notwithstanding this, over 371 submissions were received from the surrounding community. The majority of these submissions were from the Liverpool LGA, including, but not limited, to suburbs such as Holsworthy (35%), Moorebank (23%) and Wattle Grove (19%). These submissions are currently being collated and responded to as part of the preparation of the Response to Submissions report to be provided to DP&E prior the end of 2016.

Aboriginal heritage consultation

Registered Aboriginal Parties were not consulted for the purposes of the Aboriginal Heritage Memorandum (Appendix H of the Modification Report) as the Modification Proposal is consistent with the approach identified in the MPW Concept Approval and therefore does not result in any further impacts on Indigenous heritage significance. The REMMs and MCoAs would ensure that Indigenous heritage is managed for the other works which have previously been included (not part of this modification) in the MPW Project. Registered Aboriginal Parties, like other stakeholders, were provided with the opportunity to respond during the exhibition period however no responses were received.

6.3.2 Key issues

The issues raised during the public exhibition of the Modification Report are similar to those identified during the MPW Concept Approval exhibitions (refer to Section 6.2.2 of this EIS). A summary of the key community issues includes:

- Traffic and transport (196 submissions, 53% of overall submissions)
- Site selection (111 submissions, 30% of overall submissions)
- General environment (111 submissions, 30% of overall submissions)
- Community (110 submissions, 30% of overall submissions)
- Human health (96 submissions, 26% of overall submissions).

The key concern from the community is the potential impact on traffic and transport in the area and the selection of the site location itself. 50% of submissions received from Holsworthy raised the traffic and transport aspect and 37% from the Moorebank area also raised this as a concern. 21% and 19% of Holsworthy and Moorebank submissions, respectively, identified the site selection aspect as a concern.

These submissions are currently being collated and responded to as part of the preparation of the Response to Submissions report to be provided to DP&E prior the end of 2016.

6.4 Proposal consultation

6.4.1 Consultation activities

Consultation has been undertaken with key stakeholders and agencies as part of the Proposal EIS preparation in accordance with the SEARs (SSD 16-7709). Consultation included discussions and correspondence with government agencies, infrastructure and service providers, the community and Aboriginal Heritage Representatives.

Consultation has been undertaken via a range of mediums, including emails, telephone calls, private and joint meetings and correspondence (letters and emails). The following sections below outline the consultation activities undertaken and the resulting outcomes for the Proposal.

Agencies and local councils

Commonwealth Department of the Environment and Energy

The DoEE was consulted as part of the finalisation of the EPBC Conditions of Approval for the MPW Project. This consultation was undertaken in mid-2016 and, in addition to the MPW Project, specifically discussed the Proposal which was under preparation at the time.

A Technical memorandum was sent to the Commonwealth Department of the Environment on 18 July 2016 to provide information regarding the locations of three drainage channels proposed to be constructed within the conservation area of the Proposal site. This letter provided justification for drainage channel locations based on the information provided in the MPW Concept EIS (indication of drainage channel locations) and by the design development of the Proposal, which has a greater understanding of the site's drainage requirements and identified the poor condition of existing drainage lines.

It was detailed within the memorandum that the channels would result in vegetation clearance from the sediment basin edge to the water's edge, crosscutting the conservation area and creating a potential, temporary barrier to habitat connectivity. It was confirmed within the memorandum that listed species (Koala and Spotted-Tailed Quoll) would be unlikely to be impacted, and that the vegetation surrounding the channels, which is dominated by primarily exotic species, would regenerate in accordance with the natural design of the channels so as to mitigate habitat fragmentation effects.

DoEE agreed that the MPW Project had identified these channels and as a result updated the EPBC Conditions of Approval (Annexure A) to facilitate for these channels to be undertaken, subject to satisfying these conditions, as part of the Proposal.

Department of Planning and Environment

The DP&E has been continuously consulted about various elements of the Proposal since early 2016. DP&E have been consulted in the form of meetings, telephone conversations, correspondence (emails and letters) and also the submission of Proposal related documentation. DP&E has provided a number of comments regarding the content of the EIS, the design of the Proposal, engagement with stakeholders and integration of this Proposal with the Modification Proposal. These comments have been considered and the EIS has been updated accordingly (refer also to Section 6.6 of this EIS).

Environment Protection Agency

The EPA was contacted by telephone in June 2016 to provide an overview of the Proposal and discuss information that they would like to be provided with the Proposal prior to the submission of the EIS. Subsequent to this discussion, a letter was emailed to EPA on 2 September 2016 which included an overview of the Proposal and executive summaries of the Noise and Vibration Impact Assessment (Appendix N of this EIS), Air Quality Impact Assessment (Appendix O of this EIS) and Contamination Summary Report (Appendix S of this EIS), all of which have been prepared to address the SEARs for the Proposal.

EPA provided a response on 8 September 2016 indicating that the EPA has previously provided input and recommendations regarding the MPW Concept Approval (SSD 5066) on behalf of LCC, who were identified as the appropriate regulatory authority for the Proposal. As such, the EPA notified that they did not see the need to review details of the Proposal any further.

Office of Environment and Heritage

The OEH were contacted by email in June 2016 to arrange a meeting to discuss the biodiversity aspects of the Proposal. Representatives from the agency declined a formal meeting, but rather expressed their desire to provide input via DP&E regarding the content of the SEARs for the Proposal once received. A formal letter was issued to OEH on 29 August 2016 and attached to the SEARs for the Proposal. A summary of key issues raised and how they have been addressed through the design of the Proposal is provided below in Table 6-3.

Table 6-3: Items of interest arising from consultation with OEH and response

Topic	Comment	Response
Biodiversity assessment	The PEA states that the EIS would include an updated Biodiversity Assessment Report which would include the requirements in conditions E15 and E16.	A Biodiversity Assessment Report (BAR) has been prepared for the Proposal, in accordance with the Framework for Biodiversity Assessment (FBA) (refer to Appendix Q of this EIS).
Biodiversity offset strategy	The Department's draft SEARs include a requirement for a comprehensive offset strategy, or an updated strategy, in accordance with the NSW Biodiversity Offsets Policy for Major Projects (Offsets Policy) and the Framework for Biodiversity Assessment (FBA). OEH supports the requirement for an updated strategy.	A Biodiversity Offset Strategy (BOS) is currently under preparation and would be submitted to OEH to satisfy the Conditions of Approval for the MPW Concept Approval. The BOS considers the impacts of the Proposal which are identified in the BAR. The BOS will be prepared with the objective to offset all biodiversity impacts within the Moorebank Precinct (comprising the MPW site and the Moorebank Precinct East (MPE) site) as required under condition D17 of the MPW Concept Approval and draft condition C22 of MPE Stage 1 (SSD 14-67662).
Potential impacts to	OEH recommends that the SEARs include a requirement for an	Further design development has been undertaken for the Proposal

Topic	Comment	Response
Georges River riparian corridor	assessment of impacts in accordance with FBA and Offsets Policy for any new impacts to biodiversity that are outside of the assessment undertaken for the Concept Plan EIS and approval.	since the approval of the Concept Plan, resulting in the amendment of the construction footprint to accommodate for three drainage channels. Key considerations in design of the drainage channels include the poor condition of the existing channels, minimisation of biodiversity impacts and the channel capacities required to manage surface flows from the Proposal. The locations, orientation and sizing of these channels have been defined further, and an assessment of potential impacts has been undertaken and included within the EIS.
Management of Indigenous heritage items	OEH notes that the Concept plan consent includes conditions B6 and B7 which provide requirements for the development of a salvage strategy and further archaeological works prior to construction. The Concept Plan also includes conditions E19 and E20 which are conditions to be met in future development applications. OEH notes that the PEA states the EIS would include an updated assessment of Indigenous heritage which would include these requirements.	<p>An Aboriginal Heritage Impact Assessment (refer to Appendix U of this EIS) has been prepared for the Proposal, as required by the SEARs and Conditions E19 and E20 of the MPW Concept Approval. This Aboriginal Heritage Impact Assessment provides an assessment of the cultural value and archaeological significance of Indigenous heritage items within and near the Proposal site (including the Scarred Trees MA6 and MA7) and the potential impact from the Proposal on these items.</p> <p>Conditions B6 and B7 of the MPW Concept Approval refer to salvage works and further archaeological works to be undertaken prior to construction. These conditions are related to the Early Works Phase of the MPW Concept Approval (i.e. Stage 1) and would be undertaken prior to Early Works being commenced, therefore they would be completed prior to the commencement of construction for the Proposal (MPW Stage 2).</p>

OEH was further consulted in the form of a letter emailed on 30 August 2016. The letter provided an overview of the Proposal, a summary of the biodiversity, Indigenous heritage, stormwater and flooding impact assessments as part of the EIS for the

Proposal. OEH responded that they noted the information provided regarding the progress of assessments for the Proposal and no comment was required at this stage.

Transport for NSW

TfNSW, along with Roads and Maritime have been consulted on a number of occasions since the last quarter of 2015. In particular, consultation has been based on establishing and agreeing on a suitable approach to the operational traffic modelling to be undertaken for the Proposal, especially in the context of the separate Precinct modelling which is being undertaken by MIC for the Moorebank Precinct.

A number of meetings, emails and telephone conversations have been undertaken to ensure that the traffic modelling for the Proposal utilises the appropriate AIMSUN (LMARI) modelling scenario, i.e. Roads and Maritime’s model⁸. In particular, in June 2016 (via email), SIMTA confirmed that the modelling for the Proposal was to be prepared based on Roads and Maritime’s ‘Do Nothing Models’ (established in March 2016). In August 2016, SIMTA provided Roads and Maritime with a technical note which established the assumptions for the Proposal’s traffic modelling.

More recently, TfNSW attended a joint agency/service and utilities providers meeting on 12 September 2016. A summary of the comments provided in this meeting is included in Section 6.4.4 of this EIS.

Department of Primary Industries

DPI provided a letter to DP&E in July 2016 as part of the preparation of the SEARs for the Proposal. A summary of the key issues identified in this letter and how they have been incorporated into the Proposal (and this EIS) is provided below in Table 6-4.

Table 6-4: Key issues raised by DPI and how they have been integrated

Topic	Comment	Response
Biodiversity	A weed management plan should be included as a component of the Landscape Plan, and of any operational or environmental plan for ongoing management of the conservation area, archaeological sites, and any other open areas.	<p>A preliminary weed management strategy was provided in Appendix E of Technical Paper 3 – Ecological Impact Assessment in Volume 4 of the MPW Concept EIS, setting out the principles for the management of weeds in the riparian zone.</p> <p>As discussed in the BAR (Appendix Q of this EIS) a Flora and Fauna Management Plan (FFMP), or equivalent, would be prepared and implemented as part of the Construction Environmental Management Plan (CEMP) for the Proposal. The FFMP will include:</p> <ul style="list-style-type: none"> ▪ Detailed measures for minimising the risk of introducing weeds and pathogens ▪ A long-term program of weed removal and riparian vegetation restoration within the proposed conservation area

⁸ Also referred to as the ‘mesoscopic/microsimulation traffic modelling’ in Condition 12 of the MPW Concept Approval.

Topic	Comment	Response
		<ul style="list-style-type: none"> ▪ Monitoring of landscaped areas for the presence of noxious and environmental weeds.
Biodiversity	Impacts to threatened dragonfly species (listed under the Fisheries Management Act.)	<p>A Threatened Dragonfly Species survey plan (preliminary plan) was prepared and provided to DPI for comment to satisfy the MPW Concept Approval. DPI comments were received on 21 July 2016. The final Threatened Dragonfly Species Survey Plan Report was completed and issued to DPI in late September 2016.</p> <p>A summary of the outcomes of this report, to the extent that they relate to this Proposal, has been provided in Section 11 of this EIS. In summary, as no habitat was identified the Proposal would not have any impact on threatened dragonfly species.</p>
Erosion and Sedimentation control / Biodiversity	<p>Mitigation measures to manage potential impacts to the aquatic environment of Georges River, including:</p> <p>Erosion and Sedimentation impacts during construction of the facility, drainage works and revegetation activity in the riparian buffer zone.</p>	<p>A Soil and Water Management Plan (SWMP) and Erosion and Sediment Control Plan (ESCP), or equivalent, would be implemented for the construction of the Proposal (refer to Appendix R of this EIS). The SWMP and ESCPs would be developed in accordance with the principles and requirements of the <i>Blue Book</i>.</p> <p>The following management measures would be implemented during works in and adjacent to Georges River to mitigate potential impacts on water quality during OSD Channel construction:</p> <ul style="list-style-type: none"> ▪ All reasonable efforts would be taken to program construction activities during periods when flood flows are not likely to occur ▪ The construction area, on completion of construction works, would be left in a condition that promotes native revegetation ▪ The management principles outlined in <i>Managing Urban Stormwater</i> (Landcom 2004) for sites with high erosion potential would be implemented.
Water quality	Water Quality impacts from runoff and accidental spills	<p>The management strategies outlined in <i>Managing Urban Stormwater</i> ('The Blue Book') (Landcom, 2004) for management of sites with high erosion potential would be adopted for any works adjacent to the Georges River (refer to Appendix R of this EIS). A number of sedimentation basins, designed in accordance with the Blue Book, are included within the</p>

Topic	Comment	Response
		Proposal to manage surface flows during construction and operation.
Acid Sulphate Soils	Impacts from poor acid sulphate soils management	<p>The Proposal is likely to trigger low risk PASS/ASS during construction of the northern and central OSD channels connecting the main site to the Georges River (refer to Appendix R of this EIS).</p> <p>An Acid Sulphate Soils management plan, developed in accordance with the ASSMAC Assessment Guidelines (or equivalent) is to be included as a sub-plan within the CEMP for the Proposal. The plan is to be developed with active ongoing management through the construction phases for areas as being of low or high risk i.e. works within close vicinity of the Georges River. All offsite disposal would be in accordance with the NSW Waste Classification Guidelines Part 4: Acid Sulfate Soils (2009).</p>

A formal letter was emailed to DPI on 2 September 2016 which included an overview of the Proposal and a summary of how DPI’s SEARs letter (refer to Table 6-4) has been addressed in this EIS. DPI responded that the letter adequately addressed their concerns and that no further comment was required at this stage.

NSW Rural Fire Service

The RFS were contacted by telephone and email on 5 August 2016 to discuss the Proposal. The email included an overview of the Proposal, the SEARs, a copy of the Bushfire Protection Assessment (Appendix W of this EIS) and Building Services Strategy (Appendix H of this EIS) that were prepared for the Proposal. The RFS responded on 19 August 2016 that they had reviewed the document and had no further comments.

NSW Health

NSW Health was contacted by telephone in June 2016 to arrange a suitable date for a meeting to discuss the Proposal. NSW Health advised that a meeting was not suitable at this time however requested they be provided correspondence to inform them of the Proposal.

A formal letter was emailed to NSW Health on 7 September 2016 which included an overview of the Proposal and the executive summary of the Health Risk Assessment (refer to Appendix P of this EIS) which was prepared to address the SEARs for the Proposal. NSW Health responded on 7 September 2016 to acknowledge the letter, however no further comments have been received to date.

NSW Ports

A meeting was undertaken with NSW Ports on 9 September 2016 to discuss the Proposal. In general, NSW Ports indicated they were in support of the Proposal. A summary of key comments raised at this meeting and how they have been considered in this EIS is provided below in Table 6-5.

Table 6-5: Consultation comments from NSW Ports

Topic	Comment	Response
Logistics operations	Ports expressed desire for the whole of the logistics chain to operate 24/7, specifically including 24/7 intermodal terminal and warehousing operation as part of the Proposal.	The Proposal includes warehousing which interacts with the operation of the intermodal terminal which is a 24/7 operation.
Tenant requirements	NSW Ports recommended that wherever possible SIMTA's planning applications should be tailored to provide flexibility to meet tenant requirements to avoid future modification.	The Proposal has been designed to respond to the market requirements and to avoid, where possible, modifications post development determination. Notwithstanding this, tenants have yet to be confirmed and therefore it is likely that alterations to the warehousing may be required either through minor variations (as permitted as a condition of approval) or the modification process. Further discussions are currently being undertaken with DP&E to confirm this approach.

Liverpool City Council

A meeting was undertaken with LCC on 1 September 2016 to provide an overview of the Proposal. In particular this meeting included a presentation on previous MPW Project approvals, the Proposal description and the potential key environmental issues (air and noise) and assessment approaches. At this meeting LCC was also provided with a detailed presentation on the outcomes of the operational traffic reporting (Appendix M of this EIS) for the Proposal. A summary of key comments raised at this meeting and how they have been considered in this EIS is provided below in Table 6-6.

Table 6-6: Consultation comments from LCC

Topic	Comment	Response
Subsequent application timing	When would other applications for the Moorebank Precinct be submitted to DP&E?	At this stage only the MPE Stage 2 Proposal is under preparation by SIMTA. The EIS for the MPE Stage 2 Proposal is to be submitted to DP&E for review towards the end of 2016. The timing for the submissions of other applications has yet to be confirmed.
Warehousing operation	Warehousing is indicated as operating 5-7 days per week. What assessment has been undertaken?	Assessments have considered a worst case scenario with warehouses operating for 7 days a week from day one of operation. The Proposal seeks approval for

Topic	Comment	Response
		operation of warehouses for 7 days a week however these days would be reduced based on individual tenant requirements (refer to Section 4 of this EIS).
Operational timeframe	When is the Proposal to commence operation and also what assessment has been undertaken for day one of operation?	The Proposal is anticipated to commence operations in 2019 (refer to Section 4 of this EIS). Warehouses may be developed progressively, i.e. after the commencement of the intermodal terminal operations. Notwithstanding this, the environmental assessments included in this EIS have considered a worst case scenario for all of the development within the Proposal operating from day one (refer to Sections 7-20 of this EIS).
Links within the Precinct	Provide more information on the links between the MPE and MPW sites and how the Proposal fits into the Moorebank Precinct.	Further details on the links between the Proposal and the MPE Stage 1 Proposal is provided in Section 4 of this EIS. A cumulative assessment of these two operations is also provided in Section 19 of this EIS.
Noise assessment	Provide details on the methodology for the noise assessment, in particular sensitive receivers.	The noise impact assessment has considered surrounding sensitive receivers, including residential, educational, recreational, commercial and industrial land uses (refer to Section 8 and Appendix N of this EIS).
	Confirm that non compliances would not result in a cumulative creep as approvals continue, i.e. a noise exceedance on one proposal being considered the baseline for the next thereby increasing the exceedance at each stage.	As identified in the MPW Concept Approval, noise impact assessment would be undertaken at each stage of development. A Noise Impact Assessment (refer to Appendix N of the EIS) has been prepared for the Proposal.
	Mitigation measures for the Proposal include management of residents in Casula however Wattle Grove have raised concern, is mitigation required?	The Proposal site is located approximately 1km from Wattle Grove. The Proposal would not result in noise impacts above the criteria, at Wattle Grove. Notwithstanding this, a number of mitigation measures are to be implemented during construction and operation of the Proposal to minimise impacts on all surrounding

Topic	Comment	Response
	<p>Has in home treatment (i.e. insulation etc) been considered for affected residents at Casula?</p>	<p>receivers (including, but not limited to, Wattle Grove) (refer to Section 8 and Appendix N of this EIS).</p> <p>A combination of physical and procedural mitigation measures are proposed to manage potential noise impacts of the Proposal. These include, but are not limited to, restriction of certain activities during construction and operation in the CEMP and OEMPs, respectively, and the installation of a noise wall on the western boundary of the MPW site. Treatment of individual houses is currently not considered suitable based on the impacts of the Proposal on these residents (refer to Section 8 and Appendix N of this EIS).</p>
Air quality	<p>Has best practice been considered to reduce operational air emissions?</p>	<p>An Air Quality Best Practice Review (refer to Appendix O of this EIS) has been prepared for the Proposal. The review considers best practice techniques and technology for locomotives, vehicle movements and container handling and how they can be implemented as part of the Proposal to reduce air emissions.</p>
Stormwater management	<p>How is stormwater managed and what water quality measures would be implemented? In particular, how will hydrocarbons in run-off be managed?</p> <p>The recommendation for wheel squeal reduction was to use lubrication, within the MPE Stage 1 Proposal. There is a fine balance between noise benefits and water quality impacts. Have rail link water</p>	<p>An integrated stormwater system has been provided for the Proposal including a mix of pits and pipes draining to OSDs which would filter stormwater water prior to being discharged. In particular, gross pollutant traps at basin inlets would capture sediments and also the OSDs (rain gardens) are considered very effective in removing hydrocarbons from stormwater prior to discharge (refer to Section 12 and Appendix R of this EIS).</p> <p>The Proposal includes a rail link connection and operation of locomotives on the rail link (refer to Section 4 of this EIS). Notwithstanding this, the construction of the rail link is included within the MPE Stage 1 Proposal. Stormwater management</p>

Topic	Comment	Response
	<p>quality impacts been considered at this stage?</p>	<p>measures are not relevant to this Proposal as they would be integrated into the rail link as part of the MPE Stage 1 Proposal.</p>
	<p>How would on-site spills be managed, particularly for refuelling?</p>	<p>The Proposal would include on-site refuelling for locomotives (refer to Section 4 of this EIS). Spills would be managed through a number of mitigation measures which would be implemented through the OEMP for the Proposal (refer to Section 22 of the EIS).</p>
<p>Monitoring</p>	<p>How is air, noise and water to be monitored on-site for the Proposal?</p>	<p>Monitoring is to be undertaken for the Proposal at various stages, including construction and operation, for air, noise, water quality, groundwater and contamination (refer to Section 22 of this EIS).</p> <p>In addition, the existing community consultation contact details would remain in place during construction and operation of the Proposal to provide stakeholders an opportunity to discuss concerns with SIMTA directly (refer to Section 6 and Appendix L of this EIS).</p>
<p>Traffic cumulative impact assessment</p>	<p>A cumulative traffic impact assessment should be provided which provides an assessment of traffic impacts of all stages of the Moorebank Precinct (i.e. MPW and MPE Projects). This assessment should be submitted with the Proposal.</p>	<p>Cumulative traffic impact assessments, based on the available information at the time, considering the operation of the intermodal terminals (both at full build) were provided and approved under the respective Concept Plan Approvals (MPE – MP 10_0193 and MPW – SSD 5066). As the Concept Plans, respectively, proposed full build scenarios for the projects, this is considered the relevant stage for these assessments to be undertaken.</p> <p>Further, these Concept Plan approvals have been separately conditioned to undertake upgrades based on the development of the intermodal components for the projects. These full build cumulative traffic assessments are still considered relevant to the future stages of development of the</p>

Topic	Comment	Response
		<p>Moorebank Precinct, including the Proposal.</p> <p>Notwithstanding this, to provide further information as part of the MPW Concept Approval, MIC (and WSP – PB) is currently undertaking traffic modelling which utilises the June 2016 “Do Minimum” AIMSUN (LMARI) model provided by Roads and Maritime. The intent of the PB modelling is to verify upgrades previously identified in the Concept Plan Approvals which have been identified to reduce traffic impacts on the surrounding road network. This modelling would provide a cumulative impact assessment for both the MPW & MPE Projects, i.e. the entire Moorebank Intermodal Precinct. It is understood that this reporting would be available in November 2016, and at this time would be provided to the relevant agencies for review and discussion.</p> <p>As required under the SEARs, a cumulative impact assessment has been undertaken for the Proposal and the most relevant surrounding development, namely the MPE Stage 1 Proposal (refer to Section 7 and Appendix M of this EIS).</p>
Traffic modelling	Have modelling assumptions been provided to TfNSW or Roads and Maritime for review?	Roads and Maritime have been consulted on a number of occasions since the last quarter of 2015. In particular consultation has been based on establishing and agreeing on a suitable approach to the operational traffic modelling to be undertaken for the Proposal, especially in the context of the separate Precinct modelling which is being undertaken by MIC for the Moorebank Precinct (refer to Section 6.4.3 of this EIS).
Access to the Proposal	What site entrance is proposed for the Proposal?	The Proposal includes an alteration to the Anzac Road/Moorebank Avenue intersection to accommodate a primary access to the MPW site (refer to Section 4 of

Topic	Comment	Response
		<p>this EIS). There is also the opportunity for exiting vehicles to exit the MPW site via Bapaume Road.</p> <p>Existing MPW site entrances are to be used during construction of the Proposal however would be decommissioned once operational.</p>
Truck haulage routes	How would the Proposal avoid trucks running through Liverpool CBD?	<p>Both the CEMP and OEMP would designate haulage routes that would need to be maintained throughout the construction of the operation Proposal, respectively. These haulage routes would not be via the Liverpool CBD (refer to Sections 7 and 22 and Appendix M of this EIS).</p>
Moorebank Avenue widening	Does the Proposal include a widening of Moorebank Ave proposed?	<p>The proposed primary access point (Moorebank Avenue/Anzac Road) intersection works would involve a widening of the footprint of Moorebank Avenue (refer to Sections 4 and 7 and Appendix M of this EIS) only.</p>
Intersection upgrades	Intersection upgrades are currently needed at Moorebank/Newbridge and Moorebank/Heathcote Road. This is an existing issue.	<p>These intersections were considered in the traffic modelling for the Proposal (refer to Section 7 and Appendix M of this EIS). It is noted that the Proposal would not make these intersections perform worse than their anticipated level of service based on background traffic and operational vehicles on the day of opening.</p>
Draft Georges River Masterplan	The Proposal should give consideration to the Draft Georges River Masterplan.	<p>The Draft Georges River Masterplan relates to an area of parklands on the western bank of the Georges River, from the Casula Powerhouse in the south, to Speed Street in the north. It is understood that this Masterplan is in draft however is the first step to guiding the future management of this part of the Parklands.</p> <p>The most southern point of these parklands (the Casula Powerhouse) is located approximately 360m from the Proposal site. An assessment of the potential impacts of the Proposal (air and noise) on the Casula</p>

Topic	Comment	Response
		<p>Powerhouse has been included in this EIS (refer to Sections 8 and 9 and Appendix N and O of this EIS).</p> <p>In summary, the Proposal would not impact on the on-going use of this area as a Parkland and the implementation of the Draft Georges River Masterplan should it be endorsed by LCC in the future.</p>

In addition to this meeting, LCC also attended a joint agency/service and utilities providers meeting on 12 September 2016. A summary of the comments provided in this meeting is included in Section 6.4.4 of this EIS.

Campbelltown City Council

A meeting was undertaken with CCC on 2 September 2016 to provide an overview of the Proposal. In particular this meeting included a presentation on previous MPW Project approvals, the Proposal description and the potential key environmental issues (air and noise) and assessment approaches. At this meeting CCC was also provided with a detailed presentation on the outcomes of the operational traffic reporting (Appendix M of this EIS) for the Proposal. A summary of key comments raised at this meeting and how they have been considered in this EIS is provided below in Table 6-7.

Table 6-7: Consultation comments from CCC

Topic	Comment	Response
Bushfire Management	Bushfire protection/management should be considered for the Proposal, in particular in relation to the Rail link.	<p>The Proposal includes a Rail link connection which connects to the Rail link to be constructed as part of the MPE Stage 1 Proposal (SSD 14-6766- subject to approval). Mitigation measures for the protection of the Rail link against bushfire have been provided within the MPE Stage 1 mitigation measures.</p> <p>A Bushfire Protection Assessment has been prepared for infrastructure included in the Proposal and is provided at Appendix W of this EIS.</p>
Biodiversity offsets	Biodiversity impacts and how they would be offset for the Proposal.	Biodiversity offsets are to be undertaken as part of the BOS to be prepared to satisfy the conditions of the MPW Concept Approval. This BOS would consider and provide suitable offsets for the biodiversity impacts of the Proposal. A BAR (refer to Appendix Q of this EIS) has been prepared for the Proposal to identify the potential impacts and, amongst biodiversity offset,

Topic	Comment	Response
		indicate mitigation measures to reduce this impact.
Noise impacts	Rail squeal and other noise related impacts from the Proposal should be managed to minimise impacts on surrounding receivers.	A Rail Noise Impact Assessment (refer to Appendix N of the EIS) has been prepared for the Proposal to assess and mitigate noise impacts from the Proposal. In particular, a Noise Best Practice Review (refer to Appendix N of the EIS) has been prepared to consider best practice noise measures for rail noise, vehicle movements and container handling and how these can be integrated into the Proposal. The implementation of this best practice technology and techniques would reduce the potential noise impacts of the Proposal.
Community consultation	Detail the methods that have been undertaken to consult with the community for the Proposal.	A summary of the community consultation undertaken previously and recently for the MPW Concept Approval (refer to Section 6.2 of this EIS), the Modification Proposal (refer to Appendix 6.3 of this EIS) and the Proposal (refer to Section 6.4.5 of this EIS) have been provided. In summary, both MIC and more recently SIMTA have engaged with the community since 2010 through a number of mediums, with key issues considered periodically.
Health impacts	Provide details on how health impacts from vehicle and train emissions have been considered.	Both the Air Quality Impact Assessment (refer to Appendix O of this EIS) and Health Risk Assessment (refer to Appendix P of this EIS) assess potential health impacts from the Proposal's emissions and provide mitigation measures to reduce this impact. Further, the Air Quality Best Practice Review (refer to Appendix O of this EIS) provides technology and techniques which would be integrated into the Proposal to manage these emissions and reduce health impacts.
Traffic and transport	Concern is raised that trucks from the Proposal may travel south onto Moorebank Avenue and onto Cambridge Avenue. Management measures should be included in the Proposal to restrict these movements.	The Proposal has been designed to minimise truck movements from the Proposal site, south onto Moorebank Avenue. The only trucks which would be travelling south from the Proposal site would be those that are travelling to the MPE Stage 1 site. These trucks are not considered as part of the Proposal.

Topic	Comment	Response
		<p>A Traffic and Accessibility Impact Assessment and Preliminary Operational Traffic Management Plan (refer to Appendix M of this EIS) has been prepared to establish haulage routes and controls for operational trucks to ensure that they do not use Cambridge Avenue.</p>
	<p>Supportive of the Proposal utilising Cambridge Avenue if it is upgraded by Roads and Maritime in the future.</p>	<p>It is understood from consultation with Roads and Maritime that an upgrade to Cambridge Avenue is identified as a priority project however no confirmation of, or timing of this upgrade, has been confirmed.</p> <p>The use of Cambridge Avenue may be a consideration for the MPW Project operations in the future, however it is not relevant to this stage (i.e. the Proposal).</p>
<p>Warehousing operation</p>	<p>Warehousing could be 24/7 to interact with the intermodal terminal included in the Proposal and this trend is developing more and more in current applications that CCC are receiving.</p>	<p>The Proposal includes warehousing which interacts with the operation of the intermodal terminal which is a 24/7 operation.</p>

In addition to this meeting, CCC also attended a joint agency/service and utilities providers meeting on 12 September 2016. A summary of the comments provided in this meeting is included in Section 6.4.4 of this EIS.

Service and Infrastructure Providers

All relevant utility providers were contacted by Tactical so that they could sufficiently investigate the capacity of the existing service networks relevant to the Proposal site, and their ability to cater to the additional utility demand resulting from the Proposal development. Specific providers and the nature of the communication in undertaking this EIS is outlined below.

Roads and Maritime Services

Roads and Maritime have been consulted on a number of occasions since the last quarter of 2015. In particular consultation has been based on establishing and agreeing on a suitable approach to the operational traffic modelling to be undertaken for the Proposal, especially in the context of the separate Precinct modelling which is being undertaken by MIC for the Moorebank Precinct.

Numerous meetings, emails and telephone conversations have been undertaken to ensure the modelling undertaken for the Proposal utilises the appropriate AIMSUN

(LMARI) modelling scenario, i.e. Roads and Maritimes model⁹. In particular, in June 2016 (via email), SIMTA confirmed that the modelling for the Proposal was to be prepared based on Roads and Maritime's 'Do Nothing Models' (established in March 2016). Further in August 2016, SIMTA provided Roads and Maritime with a technical note which established the assumptions for the Proposal's traffic modelling.

More recently, Roads and Maritime attended a joint agency/service and utilities providers meeting on 12 September 2016. A summary of the comments provided in this meeting is included in Section 6.4.4 of this EIS.

Australian Rail Track Corporation

The Proposal does not include the construction of the Rail link which would be undertaken as part of the MPE Stage 1 Proposal. Notwithstanding this, the Proposal includes additional train movements on this Rail link which would transfer to the SSFL. SIMTA has been undertaking on-going meetings and correspondence with ARTC to discuss the Proposal, as part of greater discussions relating to the construction of the Rail link.

The most recent consultation with ARTC, in which the Proposal was mentioned, was on 14 September 2016. At this meeting a presentation on the Proposal was provided to ARTC. At this time no specific questions or concerns were raised by ARTC relating to the Proposal.

Sydney Trains

Sydney Trains was contacted, via email and telephone, in late September 2016 to provide further detail on the Proposal. It was noted in this consultation that there would be no direct impacts on Sydney Trains rail infrastructure for the Proposal in that it would be connected to the Rail link, which is to be constructed as part of the MPE Stage 1 Proposal (SSD 14-6766).

Sydney Trains raised concern that there may be the potential for derailment of trains from the Proposal impacting the operation of the East Hills Rail Corridor. As discussed above, the Proposal includes a connection to the Rail link only. Further the rail link connection would be designed to minimise derailment with the implementation of best practice including design speeds. The risk of derailment of trains from the Proposal in general and this impacting on the operation of the East Hills Rail Corridor is considered to be extremely low risk. It is anticipated that this would be further considered and addressed in a risk assessment as part of detailed design of the Proposal.

Sydney Water

On the 21 May 2015, a Section 73 Subdivider/Developer Compliance Certificate (under the *Sydney Water Act 1994*) for the Moorebank West Precinct. This certificate confirms that Sydney Water, subject to the conditions being satisfied, supports the development of the MPW Precinct and the Proposal. More recently, consultation has been undertaken with Sydney Water via email in September 2014 to verify the best approach to connection of the MPW site and Proposal to Sydney Water infrastructure. These more detailed discussions are ongoing.

⁹ Also referred to as the 'mesoscopic/microsimulation traffic modelling' in Condition 12 of the MPW Concept Approval.

Jemena

Jemena was contacted as part of the MPW Concept Approval. In addition to this, Jemena was contacted by telephone to discuss the Proposal in September 2016. No response has been received to date.

Endeavour Energy

On 31 March 2016 Endeavour Energy confirmed their 'method of supply requirement' for electricity supply to the MPW Project, which includes the Proposal. The utilities design for the Proposal has been prepared in accordance with this method of supply requirement (refer to Appendix H of this EIS). Endeavour Energy was further consulted in September 2016 to discuss this 'method of supply requirement', in particular its expiry date. These more detailed discussions are ongoing.

Telstra

Telstra was consulted with as part of the MPW Concept Approval in early 2013 and then again in May 2014. During this time Telstra advised that communication services could be provided to service the MPW Project, including the Proposal. Telstra advised that confirmation of the scope of lead in infrastructure can only be confirmed once a formal connection application is made. Telstra was contacted by telephone to discuss the Proposal in September 2016. No response has been received to date.

AGL Upstream Investment

AGL Upstream Investment was contacted by telephone to discuss the Proposal in October 2016. No response has been received to date.

Joint Agency/service provider consultation

A joint agency/service provider meeting was undertaken with Roads and Maritime, TfNSW, LCC, CCC on 12 September 2016 to specifically consult on proposed traffic modelling results, in accordance with the Conditions of Approval (Condition 12 of the MPW Concept Approval (SSD 5066)). LCC and CCC were offered to bring community representatives, however declined. The meeting was also attended by representatives of MIC and SIMTA. A summary of key issues raised at this meeting and how they have been considered is provided below in Table 6-8. A complete copy of these minutes is provided in Appendix M of this EIS. The focus of Table 6-8 is the comments raised for the Proposal rather than the Precinct modelling which is a separate process, i.e. separate to this EIS preparation and approval.

Table 6-8: Consultation comments arising from agency meeting to discuss traffic modelling

Topic	Comment	Response
Whole-of-precinct modelling approach	LCC requested that the Precinct Model be provided to update traffic numbers/impacts for the Precinct so LCC can update the community. In particular LCC requested that this Precinct Model be provided in conjunction with the modelling for the EIS.	Cumulative traffic impact assessments, based on the available information at the time, considering the operation of the intermodal terminals (both at full build) were provided and approved under the respective Concept Plan Approvals (MPE – MP 10_0193 and MPW – SSD 5066). As the Concept Plans, respectively, proposed full build scenarios for the projects, this is

Topic	Comment	Response
		<p>considered the relevant stage for these assessments to be undertaken.</p> <p>Further, these Concept Plan approvals have been separately conditioned to undertake upgrades based on the development of the intermodal components for the projects. These full build cumulative traffic assessments are still considered relevant to the future stages of development of the Moorebank Precinct, including the Proposal.</p> <p>Notwithstanding this, to provide further the previous Concept Plan approvals MIC (and WSP – PB) is currently undertaking traffic modelling which utilises the June 2016 “Do Minimum” AIMSUN (LMARI) model provided by Roads and Maritime. The intent of the PB modelling is to verify upgrades previously identified in the Concept Plan Approvals which have been identified to reduce traffic impacts on the surrounding road network. This modelling would provide a cumulative impact assessment for both projects, i.e. the entire Moorebank Intermodal Precinct. It is understood that this reporting would be available in November 2016, and that, at this time, it would be provided to the relevant agencies for review and discussion.</p> <p>As required under the SEARs, a cumulative impact assessment has been undertaken for the Proposal and the most relevant surrounding development, namely the MPE Stage 1 Proposal (refer to Section 7 and Appendix M of this EIS).</p>
Peak hour traffic assessment	LCC expressed the importance of accurate background traffic numbers from which to conduct modelling.	The Traffic modelling provided in the EIS has utilised the LMARI model and recent traffic counts to determine background traffic. Further, SIMTA are exploring various network mitigation strategies including vehicle-actuation at signals, improved signal phasing arrangements, and “yellow-boxes” at priority intersections (refer to Section 7 and Appendix M of this EIS)...
Voluntary Planning	Roads and Maritime asked how the results from the Precinct Model (i.e. upgrades) would be	It is envisaged that a VPA would be prepared based on outcomes of Precinct Modelling to identify the required upgrades

Topic	Comment	Response
Agreement (VPA)	implemented for the Moorebank Precinct.	<p>in the area for each stage of development. Discussions relating to this VPA are to be undertaken with DP&E and relevant agencies subsequent to the Precinct modelling being finalised, i.e. towards the end of 2016.</p> <p>The Traffic modelling for the Proposal includes a number of upgrades that are, in conjunction with Roads and Maritime and LCC, to be implemented for the Proposal. The upgrades to be implemented for this stage are consistent with the anticipated results from the Precinct model (refer to Section 7 and Appendix M of this EIS).</p>
Cambridge Avenue Upgrade	<p>CCC suggested that modelling could be updated to consider Cambridge Avenue as an access for the Proposal and the MPW Precinct, based on its additional traffic capacity subject to consideration of upgrading Cambridge Avenue. LCC supported this idea. It was stated by Roads and Maritime that Cambridge Avenue could not be used in its current form due to the narrow causeway over the Georges River.</p>	<p>It is understood, from consultation with Roads and Maritime, that an upgrade to Cambridge Avenue is identified as a priority project however no confirmation of, or timing of, this upgrade has been provided.</p> <p>The use of Cambridge Avenue may be a consideration for the MPW Project operations in the future however is not relevant to this stage (i.e. the Proposal).</p>
Freight distribution	<p>LCC suggested that further freight modelling needs to be undertaken by Roads and Maritime Services. Roads and Maritime indicated that they would defer sign-off of the freight modelling until the Precinct Model was prepared. LCC indicated that SIMTA should also consider impacts on travel times as a result of the Proposal.</p>	<p>Freight modelling for the Proposal is based on the information provided in the MPW Concept Approval. This modelling is considered reflective of the catchment, industry best practice and a realistic scenario for the MPW Project and Proposal.</p> <p>Impact to travel times have been considered for the Proposal (refer to Appendix M of this EIS).</p>
M5 Upgrades	TfNSW asked whether an M5 Upgrade is relevant to the Precinct or only the Proposal.	<p>An upgrade to the M5 Motorway is required as part of background traffic growth. The Proposal would contribute to a reduction in performance and in terms of level of service at the intersection of Moorebank Avenue and the M5 Motorway and therefore includes an option for the upgrade of this intersection. It is envisaged that this upgrade would be undertaken in</p>

Topic	Comment	Response
		coordination with Roads and Maritime to address both background traffic growth and the Proposal (refer to Appendix M of this EIS).
3 shifts for operational staff	Roads and Maritime asked whether there were any examples of facilities operating at a three-shift scenario, as proposed in year 2029 for the Proposal and requested examples.	The three-shift scenario is based on a transition to efficient supply chain operations in the future and that there are a number of existing examples which utilise a three-shift operation. It is understood that both Yennora Distribution Centre and Enfield Intermodal Terminal operate with the utilisation of a three-shift operation.
Moorebank Avenue widening	LCC asked whether there is an option to widen Moorebank Avenue between the M5 Motorway and the proposed Anzac Road/site entrance intersection.	The proposed primary access point (Moorebank Avenue/Anzac Road) intersection works would involve a widening of the footprint of Moorebank Avenue (refer to Sections 4 and 7 and Appendix M of this EIS) only.

Of particular note in this meeting, is although Roads and Maritime and LCC raised concern regarding the Precinct model not being available at the same time as the EIS for the Proposal, they agreed on the approach for the traffic modelling for the Proposal, i.e. no worsening of the “Do Nothing” scenario. This approach has been used for the traffic modelling for the Proposal as shown in Section 7 and Appendix M of this EIS.

Community Consultation

Thorough community consultation has been undertaken throughout the MPW Concept Approval, as outlined in Section 6.2.1.2. Community consultation activities for the Proposal are designed to build on this existing consultation.

One of the key community consultation activities undertaken for the Proposal was in August 2016. At this time SIMTA distributed a newsletter to approximately 10,000 households in the suburbs surrounding the MPW site to inform them about the Proposal, and detail how they could submit feedback or request more information. To date no submissions have been received specifically relating to this newsletter.

The following feedback mediums were referred to in the newsletter and made available to the community throughout the preparation of the EIS:

- **A stand-alone website:** ‘www.simta.com.au’ which is regularly updated to provide detailed, quality information to the community about the Proposal and planning process. The website provides information about the different ways to contact the Project Team with feedback or questions.
- **An Email feedback system:** ‘consulting@elton.com.au’ which is a convenient online feedback system for stakeholders, and an efficient way for people to obtain responses from the Project Team within 48 hours. From December 2014-April 2015 nine email enquiries were received on the project.
- **A free-call information line:** (1800 986 465), available 24 hours a day.

Potentially affected and adjoining landowners

As discussed, consultation has been undertaken to inform and engage the surrounding community, including properties that may be affected from the Proposal (refer to Section 6.4.5 above). The nearest residential receivers to the site are approximately 300 metres west of the Proposal, forming the suburbs of Casula (300 m), Moorebank (600 m), Glenfield (820 m) and Wattle Grove (1,000 m). All of these were consulted with in August 2016.

In addition to this, there are a number of other sensitive properties and land uses within proximity to the Proposal. A summary of specific consultation undertaken with adjacent land owners is included in Table 6-9.

Table 6-9: Consultation with adjacent and adjoining landowners

Adjoining site	Consultation
ABB Site	<p>A meeting was held with ABB stakeholders in early August 2016 to discuss the Proposal. ABB stakeholders raised a number of comments relating to the potential impacts of the Proposal on the ABB site. A summary of these comments are as follows:</p> <ul style="list-style-type: none"> ▪ Site access: For both ABB staff and pedestrians ▪ Stormwater and flooding: Regarding the northern OSD channel and the ability of the Proposal to manage flows through the catchment area upon which the ABB site is included within ▪ Traffic: ABB sought to confirm whether ABB access can accommodate super B-double vehicles, and whether the proposed round-a-bout would be trafficable ▪ Construction Noise: ABB queried the impacts during construction near the ABB site and Bapaume Road/Moorebank Avenue ▪ It was confirmed that approximately 50 staff use public/active transport to access the ABB site. <p>A follow up letter was issued to ABB stakeholders in August 2016 to respond to their comments. An additional response was received in late September 2016 from ABB stakeholders which requested further detail on the previously provided information. SIMTA are currently in the process of responding to this additional submission.</p>
DJLU/Holsworthy	<p>The Department of Defence (Defence) has been consulted with on a number of occasions relating to activities within the Moorebank Precinct. In particular, a technical memorandum was issued in late September 2016 which included a description of the Proposal in the context of surrounding Defence operations.</p>
Glenfield Waste Facility	<p>The stakeholders of the Glenfield Waste Facility have been consulted with on a number of occasions relating to activities within the Moorebank Precinct. In particular, discussions have been undertaken with Glenfield Waste Facility since late last year relating to the impacts of the Proposal on biodiversity and standardising an approach to biodiversity offsets, as part of the MPW Concept, for the Precinct in coordination with the Glenfield Waste Facility.</p>

Aboriginal heritage consultation

Aboriginal consultation for the Proposal built on the consultation undertaken for the MPW Concept Approval and was undertaken in accordance with OEH guidelines.

Further consultation was undertaken with RAPs with regard to the impact to scar trees (MA6, MA7 and MA8) and areas of impact that were not originally assessed as part of the Concept Plan Approval (i.e. areas of additional impact within the tertiary terrace within the conservation area).

As MA6 and MA7 lie within the Proposal construction footprint (refer to Section 16 of this EIS), a site visit with all RAPs was conducted on 8 June 2016 in order to gain updated recommendations regarding the management of the trees. An additional site visit was conducted on 1 July 2016 in order to discuss the future management of scar trees MA6 and MA7. Representatives of the following organisations were present for the additional site visit:

- TLALC
- GLALC
- CBNTCAC
- DCAC
- DACHA.

During the additional site visit, stakeholders were presented with the proponent's justification for removal of scar trees as part of the Proposal. CBNTCAC noted that this outcome had been expected and that, subject to management options being implemented, the relocation of the scar trees could be supported (refer to Section 16 of this EIS). RAPs were provided a draft version of the relevant heritage report prior to finalisation.

6.5 Ongoing consultation

6.5.1 Public exhibition and response to submissions

This EIS would be placed on public exhibition in accordance with Section 89F of the EP&A Act. This exhibition period would provide an opportunity for all stakeholders to comment on the Proposal. On completion of the public exhibition period, submissions would be received for the Proposal. These submissions would be considered in a formal document which would include the following:

- Response to Submissions Report, responding to issues raised in the submissions
- A revised Compilation of Mitigation Measures, which would update those provided in the EIS summarising the mitigation measures to be implemented for the Proposal during construction and operation
- And/or, if necessary, a Preferred Project Report, outlining any significant changes to the Proposal and further environmental impact assessment.

This additional reporting would be provided to DP&E. DP&E would provide this information on their website for all stakeholders to view.

6.5.2 SIMTA Consultation Activities

Stakeholders would have opportunities to provide formal feedback on the Proposal during public exhibition periods, as part of the statutory planning process. SIMTA would consider and respond to issues raised in submissions.

Feedback can be provided to SIMTA at any time via:

- The SIMTA Project website (www.simta.com.au) which has been updated and continues to be accessible
- The email feedback system (consulting@elton.com.au)
- The free-call information line (1800 986 465), available 24 hours a day.

SIMTA is committed to continuing to consult with stakeholders, including the community throughout the planning of the Proposal.

6.5.3 Construction

A number of mitigation measures have been provided in Section 7 – 19 of this EIS to reduce the impact of the Proposal on surrounding stakeholders, including the community. One of the key mitigation measures includes the preparation of a community information and awareness strategy included in the CEMP, which would be prepared to inform local residents of proposed construction activities related to construction to the Proposal.

6.5.4 Operation

Written notification would be provided to potentially affected and adjoining land owners prior to commencement of site operations. The manner of notification would be confirmed in the final Operational Environmental Management Plan (OEMP) for the Proposal. The OEMP would also include measures to engage with stakeholders and to manage and respond to feedback received during operation of the Proposal.

6.6 Design amendments to address consultation

This EIS has given consideration to all comments received during consultation and, where possible, amended the design and planning for the Proposal to address these concerns. The design of the Proposal has been based on that provided in the MPW Concept Approval however, where possible, design changes have been considered to further reduce the impact of the Proposal on the surrounding environment.

Technical specialist studies have assessed a range of potential impacts associated with the Proposal. Each of these impact assessments have proposed mitigation measures, which include adjustments to the design, along with protocols and procedures to be undertaken during construction and operational phases of the Proposal to reduce residual impacts on the surrounding community and environment arising as a result of the Proposal. This section refers only to design changes, as requested by the SEARs (Consultation), however reference should be made to individual assessment sections included within this EIS for mitigation measures, as well as the compilation of mitigation measures to be implemented for the Proposal (refer to Section 22 of this EIS).

Generally SIMTA and MIC have been undertaking consultation since 2010 and, as a result, have been provided with valuable feedback throughout this time. The key feedback from this consultation has been considered and, as suitable, integrated into the design for the Proposal. The inclusion of these elements within the design of the Proposal is reflected in the consultation provided, with a considerable number of agencies not providing any comment on the Proposal during consultation (refer to Section 6.4.3 of this EIS).

A summary of the key issues raised during consultation and how the design of the Proposal has been amended, or not, to respond to these issues is provided in Table 6-10. A description of the Proposal, which includes all of these design updates, is provided in Section 4 of this EIS.

Table 6-10: Summary of design changes made as a result of consultation

Topic	Issue	Design response
Traffic and transport	Upgrades required to surrounding road networks as a result of traffic congestion arising as a result of the Proposal	The Proposal includes upgrades to the Moorebank Avenue/Anzac Road/site entrance to accommodate background traffic growth and operational vehicles from the Proposal. The Proposal also includes the opportunity to upgrade the Moorebank Avenue/M5 Motorway intersection, however this would be subject to coordination with Roads and Maritime Services (refer to Section 7 and Appendix M of this EIS).
	Hours of construction and scheduling of truck movements	During development of the construction methodology there was the potential for construction for the Proposal to be undertaken 24/7. A considerable amount of noise impact sensitivity assessment was undertaken, testing a number of construction scenarios. Based on the results of this noise assessment modelling and the potential impacts that could be evident from construction being undertaken 24/7, it was decided to limit construction to standard construction hours with the exception of the importation of fill (6am to 10pm Monday to Friday and 7am to 6pm Saturdays) (refer to Section 8 and Appendix N of this EIS).
Warehousing	Warehousing configuration	Originally approval was to be sought from three warehousing layout options. These options considered the potential scenarios for the development of the MPW site and attempted to create flexibility within the anticipated approval. Consultation with the DP&E resulted in the warehousing layout being updated to represent only one warehousing layout.
Stormwater management/ remediation	Raising of the Proposal site	The MPW Concept Approval proposed a cut-fill balance for the MPW site. Additional design development was undertaken which identified that this was not the most suitable option for stormwater management on the MPW site. As a result, the site is to be raised to improve stormwater drainage across the site. Further, this raising is to be undertaken to reduce the potential of encountering unknown or unexpected contamination. A modification, the Modification Proposal, has been submitted to facilitate for this design change to be accommodated under the MPW Concept Approval and therefore the Proposal.
Water quality	Stormwater management with a view to maintain or improve existing	A stormwater system has been designed for the Proposal site to capture convey and, where suitable, filter flows prior to discharge into the Georges River. The storm water system for the operation of the

Topic	Issue	Design response
	water quality should be achieved	<p>Proposal has been designed to replicate existing site drainage and discharge conditions, and includes:</p> <ul style="list-style-type: none"> ▪ Three on-site detention (OSD) basins ▪ Drainage and flow relief from Moorebank Avenue westward through the Proposal site to the Georges River ▪ Water Sensitive Urban Design (WSUD) principles and a treatment train approach have been adopted to address potential impacts on stormwater quality, including the use of: <ul style="list-style-type: none"> – Gross Pollutant Traps (GPTs) – Rain gardens (Bioretention systems) ▪ Operational water quality monitoring is also proposed as a mitigation measure. <p>In addition, an assessment of the nature of the Amiens Wetland and the potential impacts on this wetland due to the Proposal has been undertaken by an independent wetland expert. The Proposal will not directly impact the wetland area, however controls are to be put in place to ensure flow regimes servicing the wetland area and water quality parameters are maintained.</p>
Biodiversity	Impact of OSD channels	<p>Originally the Proposal was to include four OSDs with four associated drainage channels being located through the conservation area. SIMTA undertook detailed design review to challenge the design assumptions in attempt to minimise impacts on the conservation area, where possible. As a result, the design was altered to include only three OSDs and three drainage channels.</p> <p>This design has been discussed with OEH and DoEE, both of which seem to support the approach to protection of the conservation area and the location of the OSDs or drainage channels.</p>
Subdivision	Subdivision of the Proposal site	<p>Originally the Proposal was to include subdivision of the site into a number of lots to generally reflect the warehouse, conservation area and intermodal uses. The subdivision proposed was not in accordance with the Liverpool LEP, minimum lot size development standard and therefore a variation of this standard would need to be prepared.</p> <p>In a meeting with DP&E they indicated that they would require further information and potentially a modification to the MPW Concept Approval to consider subdivision of the site, i.e. in a form that does not comply with the Liverpool LEP. As a result further information has been included in this EIS as requested.</p>

7 TRAFFIC AND TRANSPORT

Arcadis have undertaken construction and operational traffic impact assessments to address the SEARs relating to traffic and transport for the Proposal. Several reports have been prepared and are included as appendices to this EIS (refer to Appendix M of this EIS), including:

- Construction Traffic Impact Assessment (CTIA)
- Preliminary Construction Traffic Management Plan (PCTMP)
- Operational Traffic and Transport Impact Assessment (OTTIA)
- Preliminary Operational Traffic Management Plan (POTMP)

Table 7-1 identifies the SEARs as they relate to traffic and transport, and where these have been addressed in this section.

Table 7-1: SEARs for the Proposal relating to traffic and transport

Section/ Number	Requirement	Where addressed in this EIS
4. Traffic and Transport	A Traffic Impact Assessment that assesses intersection and road network impacts, including impacts on Cambridge Avenue. The traffic assessment shall;	
a)	use the background growth models developed by Roads and Maritime for the Liverpool/Moorebank area;	Section 7.2 of this EIS
b)	provide details of the current daily and peak hour light and heavy vehicle, public transport, pedestrian and bicycle movements and existing traffic and transport facilities provided on the road network located adjacent to the proposed development;	Section 7.3 of this EIS
c)	undertake a realistic and justified range of daily peak hour generation scenarios (to be determined in consultation with TfNSW, Roads and Maritime and Liverpool City Council) including assumptions about light and heavy vehicle movements and the proportion of deliveries by railway and road;	Section 7.4 of this EIS
d)	undertake detailed modelling analysis to assess network operation in consultation with Roads and Maritime and identify intersection upgrade requirements. The modelling package is to be determined by Roads and Maritime;	Sections 7.3, 7.4 and 7.5 of this EIS
e)	consider the constructability constraints of proposed upgrade(s) at key intersections, such as vehicle swept paths, geometry and sight lines;	Section 7.4 and Appendix G of this EIS
f)	provide details of the number of parking spaces, and justification of proposed parking against relevant guidelines / standards and Australian Standards;	Section 7.4 of this EIS

Section/ Number	Requirement	Where addressed in this EIS
g)	provide details of proposed staff and heavy vehicle accesses (including intersection location, design and site distance) and layout of the internal road network;	Section 7.4 and Appendix D of this EIS
h)	demonstrate appropriate provision, design and location of on-site bicycle parking, and how bicycle provision will be integrated with the existing bicycle network;	Section 7.4 of this EIS
i)	provide details of service vehicle movements and site access arrangements (including vehicle type and likely arrival and departure times of service vehicles);	Section 7.4 of this EIS
j)	provide details of sustainable travel initiatives for workers and visitors, particularly for the provision of end-of-trip facilities, pedestrian and cyclist facilities in secure, convenient, accessible areas close to main entrances, incorporating lighting and passive surveillance	Section 7.4 of this EIS
k)	<ul style="list-style-type: none"> i. assess construction traffic impacts, which may include a draft Construction Traffic Management Plan including: <ul style="list-style-type: none"> i. the identification of haulage routes and the details of existing traffic situation on these routes; ii. an assessment of construction traffic volumes (including spoil haulage/delivery of materials and equipment to the road corridor and ancillary facilities); iii. an assessment of potential impacts to the regional and local road network (including safety and level of service) and potential disruption to existing public transport services, pedestrians and cyclist movements and access to properties and businesses; iv. an assessment of cumulative impacts associated with other construction activities (if any); v. details of peak hour and daily truck movements, hours of operation, access arrangements at all stages of construction and traffic control measures for all demolition / construction activities; vi. an assessment of construction road safety at key intersections and locations subject to pedestrian / vehicle / bicycle conflicts; 	<ul style="list-style-type: none"> Section 7.3 of this EIS Section 7.4 of this EIS Section 7.4 of this EIS Section 7.4 of this EIS Section 7.4 of this EIS Section 7.4 of this EIS

Section/ Number	Requirement	Where addressed in this EIS
	<ul style="list-style-type: none"> vii. details of any required temporary cycling and pedestrian access during construction; viii. details of access arrangements for workers to / from the site, including pedestrian and public transport linkages, emergency vehicles and service vehicle movements; and ix. details of mitigation measures for the identified impacts (if any). 	<p>Section 7.4 of this EIS</p> <p>Section 7.4 of this EIS</p> <p>Section 7.5 of this EIS</p>
l)	<p>assess operational traffic and transport impacts to the local and regional road network, including:</p> <ul style="list-style-type: none"> i. changes to local road connectivity and impacts on local traffic arrangements including Cambridge Avenue, road capacity/safety; ii. an assessment of the cumulative impacts associated with other planned and approved developments in the Moorebank Precinct; iii. traffic capacity of the road network and its ability to cater for predicted future growth; and iv. details of mitigation measures for the identified impacts (if any) including how heavy vehicles would be prevented from using Moorebank Avenue south. 	<p>Section 7.4 of this EIS</p> <p>Section 19.4 of this EIS</p> <p>Section 7.4 of this EIS</p> <p>7.5 Mitigation measures</p>
m)	Consider the use of heavy vehicles able to move two 40 foot containers;	Section 7.4.2 of this EIS
n)	Consider the need for a bus stop on Moorebank Avenue; and	Section 7.4 of this EIS
o)	<p>provide an updated Traffic Management and Accessibility Plan for the operation of the facility including:</p> <ul style="list-style-type: none"> v. measures to prevent heavy vehicles accessing residential streets to maintain the residential amenity of the local community vi. details of public transport services and facilities; vii. details of cyclist facilities; and viii. details of driver code of conduct. 	Appendix M of this EIS

Section/ Number	Requirement	Where addressed in this EIS
7. Infrastructure Upgrades/Contributions		
a)	an assessment of the impacts of the project on local infrastructure, demonstrating that satisfactory arrangements are in place to support and mitigate any impacts of Stage 2 of the Concept Proposal including applicable costs, timing, TEU thresholds and approval pathways for such measures;	Sections 7.4, 7.5 and 7.6 of this EIS
b)	Consideration of any relevant Council's Developer Contributions Plan (or equivalent document requiring developer contributions), including the contributions plan for Prestons Industrial Area; and	Section 20.3 of this EIS
c)	Consideration of the need to extend the Route 901 bus service.	Sections 7.3.7 and 7.5 of this EIS

This Section summarises the studies undertaken previously for the MPW Concept Approval and for the Proposal and provides an assessment of potential impacts resulting from changes to traffic arising as a result of the Proposal. Measures to mitigate impacts have also been identified where they are required.

7.1 MPW Concept Approval

A Traffic, Transport and Accessibility Impact Assessment Report was prepared by Parsons Brinkerhoff (2014) to support the MPW Concept Approval. The report aims to assess the existing and proposed transportation network surrounding the Proposal site, as well as potential traffic and transport-related impacts arising as a result of construction and operation of the MPW Project.

The traffic and transport assessment for the MPW Concept Approval analyses future traffic conditions with the MPW Project and without the MPW Project. The key outcome sought for the MPW Project would be (at a minimum) that the 'with MPW Project' conditions are not significantly worse than the 'without MPW Project' conditions.

The assessment for the Concept Approval comprised of two main components:

- The development of a strategic transport model to assess impacts associated with articulated truck movements on the Sydney greater metropolitan (GMA) network. The model forecasted traffic numbers for the year 2031, by utilizing elements from a number of other NSW Government models.
- Undertaking intersection performance modelling (using Signalised and Unsignalised Intersection Design and Research Aid [SIDRA] modelling software) to assess the performance of 21 selected intersections within the local and wider road network for the year 2030 with and without the MPW Project.

The assessment also included a cumulative assessment of traffic and transport impacts of the MPW Project with the adjacent MPE Project and other planned developments in the surrounding region.

The methodology for the traffic impact assessment involved the following key steps:

- Determining existing traffic network demands and performance through the use of data collection from traffic survey counts
- Determining expected traffic generation from the full development proposed within the Project site, for both construction and operation
- Distributing predicted traffic generated to the network through a number of key intersections along Moorebank Avenue
- Establishing the peak traffic years to be tested based on construction and operational traffic demands and AM peak hour and PM peak hour periods
- Modelling construction and operational traffic impacts at a strategic level (using the NSW Roads and Maritime Road Assignment Model (EMME/2)) to forecast future year traffic growth within the study area
- Modelling the performance of proposed future intersection upgrades along Moorebank Avenue using SIDRA 6 (intersection analysis software) to forecast the impact of the MPW Project on the operation of the network for five key scenarios, as outlined in Table 7-2.

Table 7-2: Scenarios assessed under the MPW Concept Approval¹⁰

Phase (year)	Detail of works
Early Works (2015)	This considers construction only impacts generated by remedial earthworks and demolition of buildings
Phase A (2016)	This considers peak construction impacts occurring for Phase A generated by spoil removal and the upgrade of Moorebank Avenue (and associated intersections)
Phase B (2023)	This considers a combination of construction and operational impacts. Under this scenario operations on site would be 24 hours a day, 7 days a week with the exception of the operation of the truck gate, which would only be operational 16 hours a day, 5.5 days a week
Phase C (2028)	This considers a combination of construction and operational impacts. Under this scenario operations on site would be 24 hours a day, 7 days a week with the exception of the operation of the truck gate, which would only be operational 16 hours a day, 5.5 days a week
Full Build (2030)	This considers operational impacts only. Under this scenario operations on site would be 24 hours a day, 7 days a week and truck movements would occur 24 hours a day, 7 days a week

An assessment of the existing road safety of Moorebank Avenue and sections of the M5 Motorway was also undertaken in accordance with the Roads and Maritime *Accident Reduction Guide Version 1.1* (Roads and Maritime, 2005).

The assessment made recommendations for future intersections and other required upgrades to mitigate any other impacts. Specific findings of the assessment are summarised below:

¹⁰ Phase scenarios selected for the MPW Concept Approval assessment were sourced from the MPW Concept Approval EIS Document (PB, 2014)

- According to the assessment, the MPW Project would generate approximately 13,884 car and truck movements a day (i.e. 6,942 trips to the MPW site and 6,942 trips from the MPW site) when fully operational (full build) in 2030
- The assessment of the Moorebank study area without the MPW Project identified that, based on the predicted yearly background traffic growth rates on Moorebank Avenue and Anzac Road provided by the Roads and Maritime (Roads and Maritime Services *Background Traffic Annual Growth Rates 2016 to 2031 for a 2hr and PM peak period Moorebank Area*) the following existing intersection layouts along Moorebank Avenue would operate unsatisfactorily (i.e. a level of service of F):
 - Moorebank Avenue and Bapaume Road intersection would operate unsatisfactorily during both the AM and PM peak hours from 2015 onwards
 - Moorebank Avenue and Anzac Road intersection would operate unsatisfactorily in the PM peak in 2030
 - Moorebank Avenue and the Defence Joint Logistics Unit Access intersection would operate poorly in the PM peak from 2016 and in the AM peak from 2028
 - Moorebank Avenue and the DNDSC Access intersection (i.e the access into the existing MPE site) would operate poorly in the PM peak from 2023
 - Moorebank Avenue and Chatham Avenue intersection would operate poorly in the AM and PM peaks from 2023
- An assessment on wider network volumes show the Moorebank Avenue and M5 Motorway interchange would perform satisfactorily during the AM and PM peak hours in 2030 both with and without the predicted traffic generated by the MPW Project. The Hume Highway and M5 Motorway interchange is predicted to operate at an unsatisfactory level of service (LoS F) for the PM peak hours with or without the generated traffic by the MPW Project.
- Overall, only a minor contribution to congestion is predicted throughout the road network due to the traffic generated by the MPW Project. Furthermore, there are no significant intersection performance changes between the ‘with’ and ‘without’ the MPW Project scenarios. This is because the network in 2030 is generally predicted to be already congested based on general background traffic growth predictions.

7.1.1 Conditions of Approval

The Conditions of Approval relevant to the Proposal are shown in Table 7-3. These conditions of approval have been considered and addressed while developing the methodology for the Traffic and Transport studies undertaken for the Proposal.

Table 7-3: MPW Concept Conditions of Approval

Conditions of Approval		Where addressed in this EIS
Schedule 2 – Terms of Approval		
12.	Prior to submitting any Development Application for either the IMEX or interstate terminal, the Applicant shall convene a meeting with regard to proposed traffic assumptions and mitigation measures. The Applicant must: <ul style="list-style-type: none"> a) Invite SIMTA, TfNSW, RMS, Liverpool City Council and Campbelltown City Council. Each Council may also invite a maximum of two community representatives to attend. 	Section 6 of this EIS

Conditions of Approval		Where addressed in this EIS
	<p>b) At the meeting, present the scope and assumptions of the mesoscopic/microsimulation traffic modelling, the draft Traffic Impact Assessment and any proposed mitigation measures including timing on the delivery of any proposed measures;</p> <p>c) Publish the meeting minutes and a schedule of action items arising from the meeting, including responsibilities and timeframes on its website;</p> <p>d) Prepare a written report responding to the action items and consult with RMS on the action items and final mitigation measures; and</p> <p>e) Provide details of the undertaking and outcomes of this condition in the EIS.</p>	
Schedule 4- Conditions to be met in future development applications		
E10.	Development Applications for either the IMEX or interstate terminal shall include documentation demonstrating how Condition 14 of this approval has been satisfied.	Section 4 of this EIS
E11.	All future Development Applications shall include a Traffic Impact Assessment based on background growth models developed by Roads and Maritime for the Liverpool/Moorebank area (if applicable).	Section 7.2 of this EIS
E12.	All future Development Applications shall demonstrate how the main access to the site has been designed to prevent heavy vehicles associated with the facility from using Moorebank Avenue south, and should be accompanied by a detailed engineering drawing(s).	Appendix M and Appendix G of this EIS
E13.	<p>All future Development Application shall include:</p> <p>a) an assessment of the impacts of the project on local infrastructure, having regard to any relevant Council's Developer Contributions Plan (or equivalent document requiring developer contributions);</p> <p>b) a commitment to pay developer contributions to the relevant consent authority or undertake works-in-kind towards the provision or improvement of public amenities and services. Note: This requirement may be satisfied subject to the terms of any applicable Voluntary Planning Agreement; and</p> <p>c) a commitment to undertake vehicle monitoring on Cambridge Avenue. Should any monitoring reveal the need for improvement works within the Campbelltown LGA as a result of the proposal, the Applicant may be required to contribute towards local road maintenance or upgrades.</p>	<p>Section 7.6 of this EIS</p> <p>Section 7.4 of this EIS</p>
E14.	All future Development Applications shall consider the need for a bus stop on Moorebank Avenue (including direct pedestrian access from the warehousing to the bus stop), and associated turnaround facility suitable for a 14.5 metre long non-rear steer bus.	Sections 7.4 and 7.5 of this EIS

7.2 Methodology

7.2.1 Assessment method

Construction Traffic Impact Assessment Methodology

The methodology for the Construction Traffic Impact Assessment followed the following key steps:

- Determining the existing traffic network demands and performance through use of traffic counts and data collection (refer to Section 7.3 of this EIS)
- Establishing future network performance during the projected construction period without the construction traffic impacts of the Proposal (refer to Section 7.3 of this EIS)
- Outlining the expected construction staging, layout, program and activities for the Proposal, to quantify the expected traffic movements during construction, and trip distribution (Potential Impacts – refer to Section 7.4 of this EIS)
- Using SIDRA Modelling to outline the expected impact upon selected roads and intersections (Potential Impacts – refer to Section 7.4 of this EIS)
- Providing recommendations to mitigate construction impacts, including temporary access to the Proposal site (Mitigation Measures – refer to Section 7.5 of this EIS).

Two construction impact assessment scenarios were selected as representative of worst-case construction traffic conditions, outlined in Table 7-4.

Table 7-4: Construction traffic assessment scenarios

Scenario	Proposal Construction Works period	MPE Stage 1 Operational Traffic ¹¹	Road Network and Access Points
1	Works period A ¹²	MPE Stage 1 does not operate.	Road network operates as per existing condition. One access point is proposed via Chatham Avenue.
2	Peak construction period (overlap in Works periods C, D, E and F)	MPE Stage 1 operational traffic.	Two key access points are proposed via <ul style="list-style-type: none"> ▪ New MPW site access at Moorebank Avenue / Anzac Road intersection ▪ Existing access at Chatham Avenue.

¹¹ Section 19 of this EIS provides a cumulative assessment of the Proposal and relevant surrounding development (MPE Stage 1).

¹² Refer to Section 4 of this EIS for further information on Works periods.

Preliminary Construction Traffic Management Plan (PCTMP)

The PCTMP was prepared based on the mitigation measures identified in Section 7.5 of this EIS. The purpose of the PCTMP was to further these mitigation measures and ensure that they can be appropriately implemented during construction. The objectives of this plan are to:

- Develop a strategy which provides a safe environment for workers, visitors and the general public from traffic hazards that may arise as a result of the construction activity
- Minimise disruption, congestion and delays to all road users
- Maintain the network performance at an acceptable level throughout the construction period
- Eliminate or mitigate risks of damage or degradation to the road environment through appropriate construction traffic management practices

Operational Traffic and Transport Impact Assessment Methodology

The methodology for the Operational Traffic and Transport Assessment followed the following key steps:

- Establish the wider investigation area and existing travel patterns, including public transport, pedestrian and cycle provisions (refer to Section 7.3 of this EIS)
- Assess the existing road network performance and Level of Service at key intersections
- Establish projected traffic conditions without the Proposal, taking into consideration background traffic growth
- Assess projected traffic impacts associated with the Proposal, including impacts associated with proposed accesses to the Proposal site, trip generation, level of service and traffic impacts to the road network, including Cambridge Avenue
- Provide a summary of key findings and mitigation measures to minimise the identified impacts.

In determining the required intersection improvements to mitigate the impact of Proposal traffic on the road network, a “no-worsening of the without Proposal intersection performance” approach was adopted as this identifies improvements directly attributable to the Proposal.

Preliminary Operational Traffic Management Plan (POTMP) Methodology

The POTMP was also prepared based on the mitigation measures identified in Section 7.5 of this EIS, and is prepared to develop measures to ensure they can be appropriately implemented during operation of the Proposal. The objectives of this plan are as follows:

- Develop a strategy which provides a safe environment for staff, visitors and the general public from traffic hazards that may arise as a result of the operational activity
- Minimise disruption, congestion and delays to road users
- Maintain the network performance at an acceptable level throughout the operational period
- Eliminate or mitigate risks of damage or degradation to the road environment through appropriate traffic management practices
- Identify procedures, monitoring measures and corrective actions.

7.2.2 Future traffic growth modelling and background data

For the operational assessment, future traffic growth and modelling data was sourced from Roads and Maritime's wider Liverpool Moorebank Arterial Road Investigations (LMARI) model built in AIMSUN modelling software version 8.0.9 (R35843). The LMARI AIMSUN traffic model was developed, calibrated and validated by Jacobs¹³ and subsequently updated by GTA consultants¹⁴ (GTA). Roads and Maritime provided the 2026 future based model ('Do Nothing scenario) on 4 March 2016.

For the purpose of traffic modelling for the Proposal, Arcadis used the AIMSUN traffic model provided by Roads and Maritime dated 4 March 2016, supplemented with Signalised and Unsignalised Intersection Design and Research Aid modelling (SIDRA) network modelling version 7. Roads and Maritime were consulted with to confirm this approach prior to proceeding with the modelling (refer to Section 6 of this EIS).

Also used for this assessment was data from traffic reports previously prepared for Moorebank Precinct West (MPW) Project and Moorebank Precinct East (MPE) Project, including:

- MPW Concept Approval - MPW Concept and Early Works (Stage 1 Approval) (SSD 5066) granted on 3 June 2016 for the development of the MPW Intermodal terminal facility at Moorebank and the undertaking of the Early Works. This report references previous Traffic and Transport Impact Assessment traffic reports (2015, WSP | Parsons Brinkerhoff previously known as Parsons Brinkerhoff) prepared for both the Concept Plan Approval and Early Works (Stage 1) Projects, as suitable.
- MPE Project – The Intermodal terminal facility on the MPE site as approved by the MPE Concept Plan Approval (MP 10_0913) and including the MPE Stage 1 Proposal (14-6766). This report references previous Transport and Accessibility Impact Assessment reports (2013, 2015 Arcadis previously known as Hyder Consulting) prepared for both Concept Plan Approval and Stage 1 Proposals, as suitable.
- Moorebank Intermodal Terminal Precinct – Traffic Generation and Underlying Assumptions, Memorandum, Parsons Brinckerhoff, 1 September 2016.

In addition to the above, MIC (and WSP – PB) are currently undertaking traffic modelling which utilises the June 2016 "Do Minimum" AIMSUN (LMARI) model provided by Roads and Maritime. The intent of this Precinct modelling is to verify upgrades identified to reduce traffic impacts on the surrounding road network (i.e. at 15 key intersections) arising as a result of the ultimate full-build scenario (i.e. 1.55 million TEUs IMT terminal capacity and 850,000 m² Warehouse GFA) for the entire Moorebank Intermodal Precinct (Precinct Model). It is understood that this reporting would be available in November 2016, and that at this time it would be provided to the relevant agencies for review and discussion. We note that this is a concurrent, albeit separate activity, which is predominately relevant to the MPW Concept Approval (i.e. precinct wide scope) rather than the Proposal (which focuses on the development proposed). This modelling would therefore not be discussed further in this section of the EIS.

¹³ Liverpool Moorebank Arterial Road Investigations, MIRTA Base Model Calibration and Validation Report, Final Revision B.0, Jacobs, 12 October 2015.

¹⁴ Moorebank Intermodal Terminal AIMSUN Existing Conditions Model – Modelling Review Summary, Memorandum, GTA Consultants, 26 November 2015.

7.2.3 Level of service (LoS) criteria

Intersection Levels of Service (LoS) were assessed for this study using the standard NSW Level of Service criteria for intersection performance as shown in Table 7-5.

Table 7-5: Level of Service Criteria for Intersection Capacity Analysis

Level of Service (LoS)	Average Delay per Vehicle (sec/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	<14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	>70	Unsatisfactory with excessive queuing	Unsatisfactory with excessive queuing

Source: Roads and Maritime Guide to Traffic Generating Developments

7.3 Existing environment

7.3.1 Traffic study area

The traffic study area comprises the wider traffic study area (delineated below in blue) and the core traffic study area (delineated below in red). These areas are derived from investigations based on previous modelling undertaken for the MPW Concept Approval and the Roads and Maritime LMARI traffic model (refer to Figure 7-1). The wider traffic study area includes the surrounding road network in the Liverpool local government area (LGA) which has been delineated by the Roads and Maritime LMARI traffic model. The core traffic study area selected for the Proposal includes eight key intersections, which have the most potential to be impacted by the Proposal and have been confirmed through consultation with Roads and Maritime.

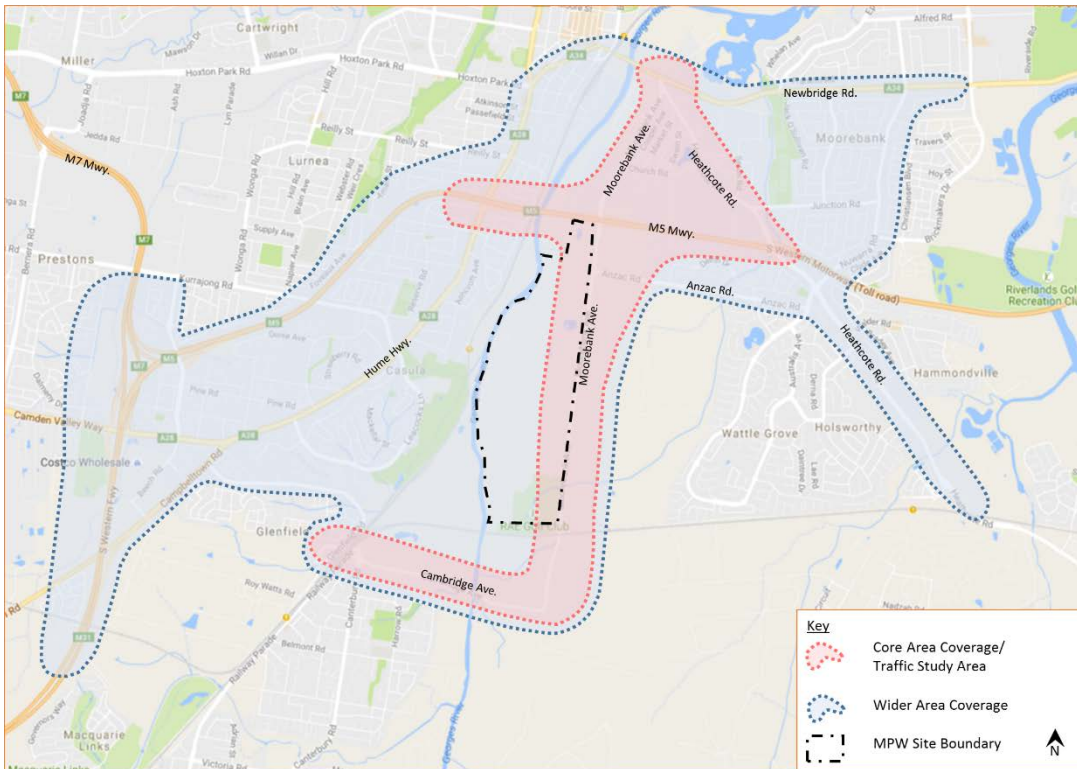


Figure 7-1: Traffic study area

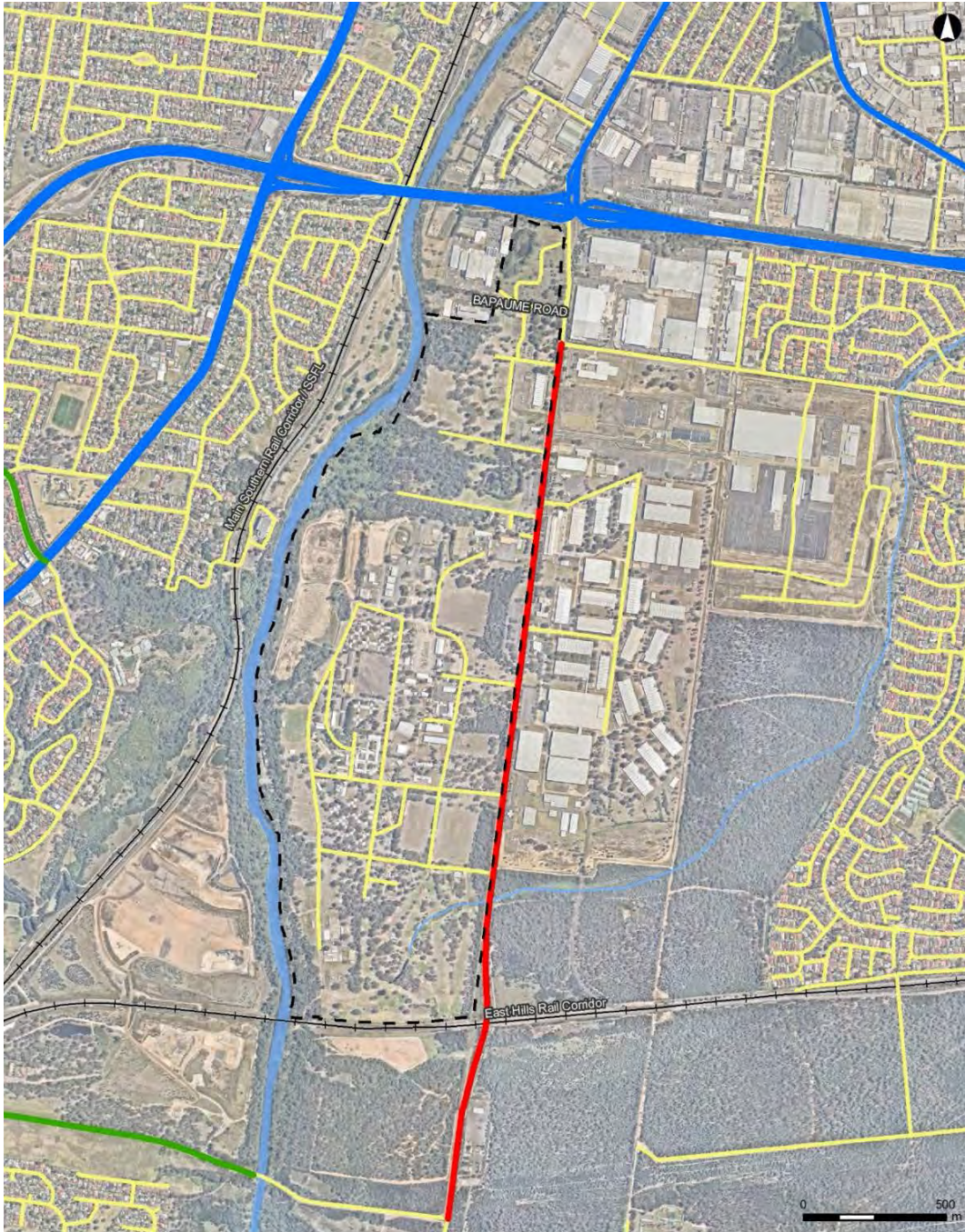
7.3.2 Road network

The existing road network surrounding the Proposal comprises State roads, regional roads and local roads owned and maintained by Roads and Maritime and LCC, and a private road owned and maintained by the Department of Defence. The hierarchy and characteristics of the key roads forming the road network surrounding the Proposal are shown in Table 7-6 and Figure 7-2.

Table 7-6: Main roads forming road network

Road Names	Road Hierarchy	Characteristics
M5 South West Motorway	Motorway	The M5 South West Motorway (M5) is a 22km tolled road with generally three lanes in each direction between Camden Valley Way, Prestons and King Georges Road, Beverly Hills. It is operated by Interlink Roads. It forms part of the M5 transport corridor, the main passenger, commercial and freight route between Sydney Airport, Port Botany and south west Sydney. It is also a key part of the Sydney Orbital Network, a series of interconnected roads that link key areas of the Greater Sydney Metropolitan Region.

Road Names	Road Hierarchy	Characteristics
Moorebank Avenue	Local Road / Private Road	Moorebank Avenue is currently a two lane undivided road (one lane on each direction) between Cambridge Avenue and M5 South West Motorway (adjacent to the site) and four lane undivided road (two lane on each direction) north of the M5 South West Motorway. This road provides a north-south link between Liverpool and Glenfield. It also forms a grade separated interchange with the M5 South West Motorway. North of the M5, Moorebank Avenue is a State Road. Moorebank Avenue between M5 and Anzac Road is owned and maintained by Liverpool City Council. Moorebank Avenue between M5 and Anzac Road is owned and maintained by Liverpool City Council. Moorebank Avenue between Anzac Road and Cambridge Avenue is a private road on Commonwealth land.
Anzac Road	Local Road	Anzac Road is an east-west local road that connects Moorebank Avenue and Heathcote Road. It provides access to Moorebank Business Park and the residential area of Wattle Grove. This is generally a two-lane undivided road.
Bapaume Road	Local Road	Bapaume Road is an east-west local road that connects Moorebank Avenue to the industrial complex (ABB site). This is generally a two-lane undivided road. The road is owned and maintained by Liverpool City Council.
Cambridge Avenue	Local Road	Cambridge Avenue is a local road which connects Moorebank Avenue from the south to Macquarie Fields through to Campbelltown. It is generally a two lane road (one lane each direction). Cambridge Avenue is owned and maintained by Campbelltown City Council. Cambridge Avenue crosses the Georges River via a low level narrow bridge (subject to flooding).



LEGEND

- MPW site boundary
- Watercourse
- Existing railway
- Private road on Commonwealth land
- Local roads
- NSW Classified Roads - Regional road
- NSW Classified Roads - State road

Existing road heirarchy

Figure 7-2: Existing Road Hierarchy

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Scale: 1:20,000 @ A4



7.3.3 Existing traffic volumes

The performance of eight intersections and five key locations were assessed to establish the existing traffic capacity and operational performance of intersections and the road network¹⁵. Key roads and intersections assessed, shown in Figure 7-3, include:

Midblock locations

- M-1 Moorebank Avenue, north of Anzac Road
- M-2 Moorebank Avenue, south of Anzac Road
- M-3 Anzac Road, east of Moorebank Avenue
- M-4 Moorebank Avenue, north of Cambridge Avenue
- M-5 Cambridge Avenue, west of Moorebank Avenue

Intersections

- I-1 Moorebank Avenue / Anzac Road
- I-2 M5 Motorway / Moorebank Avenue
- I-3 M5 Motorway / Hume Highway
- I-4 Moorebank Avenue / Newbridge Road
- I-5 Moorebank Avenue / Heathcote Road
- I-6 M5 Motorway / Heathcote Road
- I-7 Cambridge Avenue / Glenfield Road
- I-8 Cambridge Avenue / Canterbury Road.

¹⁵ Traffic investigations undertaken for the MPW Concept Approval included consideration of 21 intersections representing the wider road network with respect to the Moorebank Precinct, which included the eight intersections selected for this study.

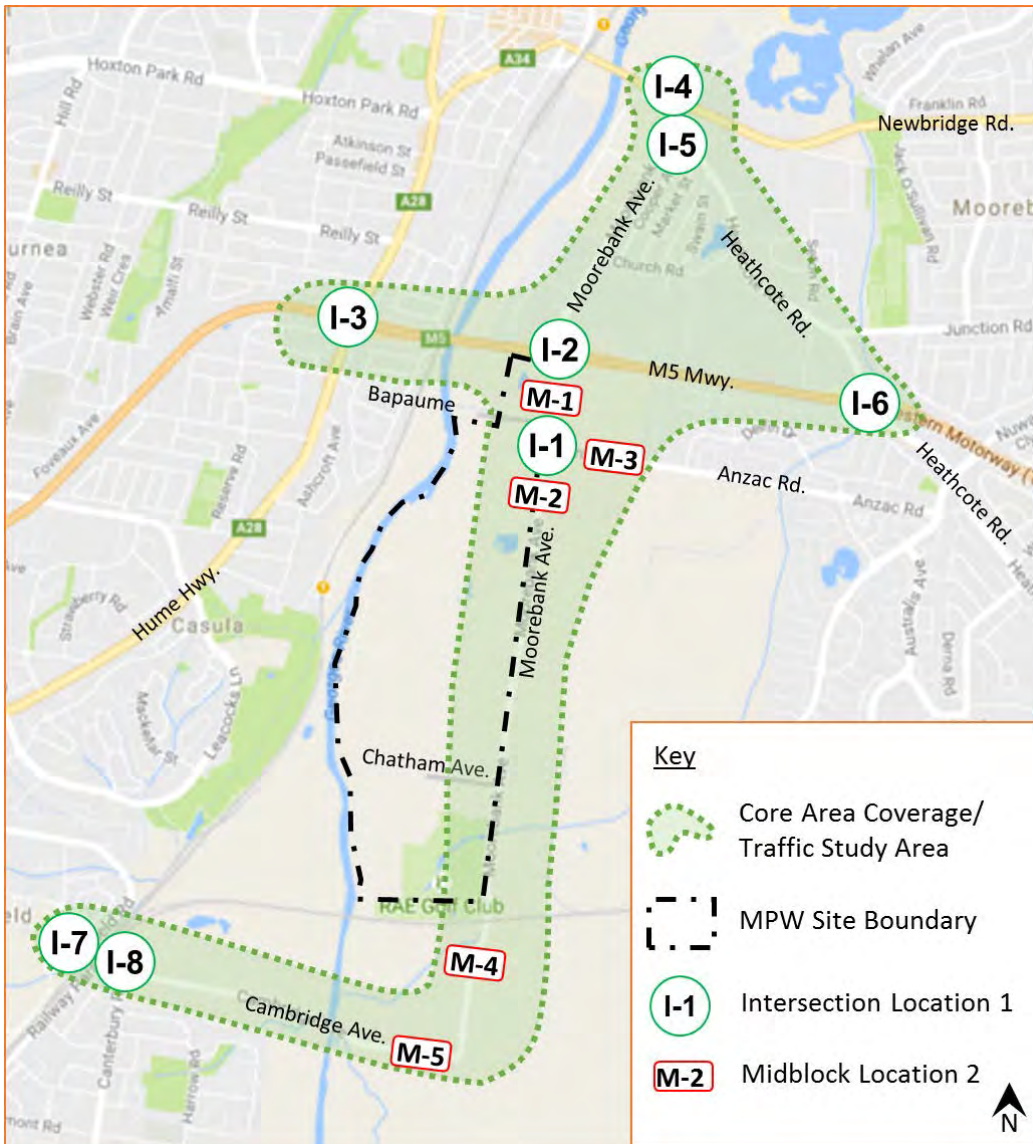


Figure 7-3: Locations of key roads and intersections around the Proposal site

Traffic count surveys taken for the MPW Project, MPE Project and Roads and Maritime LMARI traffic model (2015¹⁶) were used to establish existing traffic volumes for the year 2015. Table 7-7 below shows existing traffic volumes on key roads to be impacted by the Proposal.

¹⁶ 2015 was used as the existing year rather than 2016 based on available traffic surveys and counts.

Table 7-7: Peak hour traffic volumes on key roads impacted by the Proposal in 2015

ID	Roads/Locations	AM Peak		PM Peak		Total Daily Traffic	Heavy Vehicle %
		NB/EB	SB/WB	NB/EB	SB/WB		
M-1	Moorebank Avenue, north of Anzac Road	910	780	680	940	21,300	1,100 (5%)
M-2	Moorebank Avenue, south of Anzac Road	950	430	450	840	17,200	890 (5%)
M-3	Anzac Road, east of Moorebank Avenue	720	490	510	520	10,410	480 (5%)
M-4	Moorebank Avenue, north of Cambridge Avenue	920	360	350	920	16,760	930 (6%)
M-5	Cambridge Avenue, west of Moorebank Avenue	890	320	340	920	15,700	550 (4%)

7.3.4 Existing network performance

The existing performance of intersections within the core traffic study area (shown in Figure 7-3) from 2015 based data were assessed using the SIDRA modelling tool. The existing LoS results are reported for the AM peak hour between 8-9 am and PM peak hour between 5-6 pm for all eight intersections, as shown in Table 7-8.

Table 7-8: Modelled level of service for the existing conditions at key intersections

ID	Intersection	Control	2015 Existing			
			AM Peak (8-9 am)		PM Peak (5-6 pm)	
			Delay (sec)	LoS	Delay (sec)	LoS
I-1	Moorebank Avenue / Anzac Road	Existing Layout	18	B	17	B
I-2	M5 Motorway / Moorebank Avenue	Existing Layout	32	C	31	C
I-3	M5 Motorway / Hume Highway	Existing Layout	48	D	36	C
I-4	Moorebank Avenue / Newbridge Road	Existing Layout	61	E	60	E
I-5	Moorebank Avenue / Heathcote Road	Existing Layout	66	E	63	E
I-6	M5 Motorway / Heathcote Road	Existing Layout	24	B	53	D

ID	Intersection	Control	2015 Existing			
			AM Peak (8-9 am)		PM Peak (5-6 pm)	
			Delay (sec)	LoS	Delay (sec)	LoS
I-7	Cambridge Avenue / Glenfield Road	Existing Layout	14	B	15	B
I-8	Cambridge Avenue / Canterbury Road	Existing Layout	15	B	12	A

The results show existing intersections performing at varying levels of service, with I-1, I-2, I-7 and I-8 all performing to a LoS considered satisfactory (LoS C or above) during both peak periods in 2015. Results indicate that the existing Moorebank Avenue / Newbridge Road and Moorebank Avenue / Heathcote Road intersections (I-4 and I-5) are operating at capacity (LoS E) in the AM and PM peaks, highlighting the need for upgrades at these intersections to cater for existing peak demand.

7.3.5 Traffic growth

Traffic growth rates at key roads around the Proposal were calculated based on available data reported as average annual daily traffic (AADT) and average daily traffic (ADT) for key roads in the wider traffic study area¹⁷. Historical traffic growth observed within the network over a 13-year period is shown in Table 7-9.

Table 7-9: Historical traffic growth at key locations between 2002 and 2015

Roads/Locations	Annual Average Growth		
	Between	Between	Between
	2002-2009	2002-2010	2010-2015
M5 Motorway, at bridge over Georges River	N/A	▲4.3%	N/A
Moorebank Avenue, north of Cambridge Avenue	▼0.3%	N/A	▲0.3%
Moorebank Avenue, south of Anzac Road	N/A	N/A	▼0.3%
Anzac Road, east of Moorebank Avenue	N/A	N/A	▲1.8%
Average for all roads (last 13 years)	▲1.3%		

On average, the last 13 years of data suggest that traffic growth within the network was on average 1.3% between 2002 and 2015. This observation is consistent with the regional annual growth rate observed on the adjacent State road network which is between one and two percent per year. Other notable trends relating to roads within close vicinity of the Proposal include:

- Consistent traffic growth was observed on the M5 Motorway between 2002 and 2010 at about 4.3% per annum.

¹⁷ The daily traffic data for 2015 were estimated from actual 2014 ADT counts and traffic count data sourced from the Roads and Maritime’s LMARI traffic model.

- Historical traffic volumes on Moorebank Avenue (between the M5 and Cambridge Avenue) has been relatively stable. This could be attributed to numerous factors including increases in traffic due to new residential developments in Glenfield and Macquarie Fields, reductions in traffic due to the relocation of the DSND and the M5 West Widening (less “rat-running” of traffic on Moorebank Avenue due to increased motorway capacity).
- The last five years of data suggest traffic increases on Anzac Road of about 1.8% per annum which may have been attributed to the development of the nearby industrial estates at Yulong Close.

7.3.6 Future network performance

To assess the performance of the network in the future without the Proposal, forecast growth rates were applied to existing traffic volumes observed from 2015 and the performance of key intersections were modelled. The traffic impact from background traffic growth on the network has been undertaken for the eight key intersections for opening year in 2019 and ten years after opening in 2029 in both the AM and PM peak. Table 7-10 shows predicted intersection level of service (LoS) results without the Proposal for the 2019 AM and PM peaks, while Table 7-11 shows predicted intersection level of service (LoS) results without the Proposal for 2029 AM and PM peaks.

In the event the predicted background traffic are realised at the study intersections in 2019 and 2029, the model predicts worsening of the level of service of those intersections currently identified as problematic i.e. near or at capacity.

Table 7-10: Intersection Level of Service without the Proposal - 2019

ID	Intersection	Layout	2019 without the Proposal			
			AM Peak (8-9 am)		PM Peak (5-6 pm)	
			Delay (sec)	LoS	Delay (sec)	LoS
I-1	Moorebank Avenue / Anzac Road	Existing Layout	24	B	16	B
I-2	M5 Motorway / Moorebank Avenue	Existing Layout	49	D	27	B
I-3	M5 Motorway / Hume Highway	Existing Layout	134	F	32	C
I-4	Moorebank Avenue / Newbridge Road	Existing Layout	61	E	60	E
I-5	Moorebank Avenue / Heathcote Road	Existing Layout	66	E	63	E
I-6	M5 Motorway / Heathcote Road	Existing Layout	78	F	69	E
I-7	Cambridge Avenue / Glenfield Road	Existing Layout	8	A	12	A
I-8	Cambridge Avenue / Canterbury Road	Existing Layout	10	A	7	A

Table 7-11: Intersection Level of Service without the Proposal - 2029

ID	Intersection	Layout	2029 without the Proposal			
			AM Peak (8-9 am)		PM Peak (5-6 pm)	
			Delay (sec)	LoS	Delay (sec)	LoS
I-1	Moorebank Avenue / Anzac Road	Existing Layout	52	D	95	F ¹⁸
I-2	M5 Motorway / Moorebank Avenue	Existing Layout	74	F	125	F
I-3	M5 Motorway / Hume Highway	Existing Layout	155	F	129	F
I-4	Moorebank Avenue / Newbridge Road	Existing Layout	78	F	94	F
I-5	Moorebank Avenue / Heathcote Road	Existing Layout	78	F	153	F
I-6	M5 Motorway / Heathcote Road	Existing Layout	78	F	336	F
I-7	Cambridge Avenue / Glenfield Road	Existing Layout	10	A	7	A
I-8	Cambridge Avenue / Canterbury Road	Existing Layout	14	B	10	A

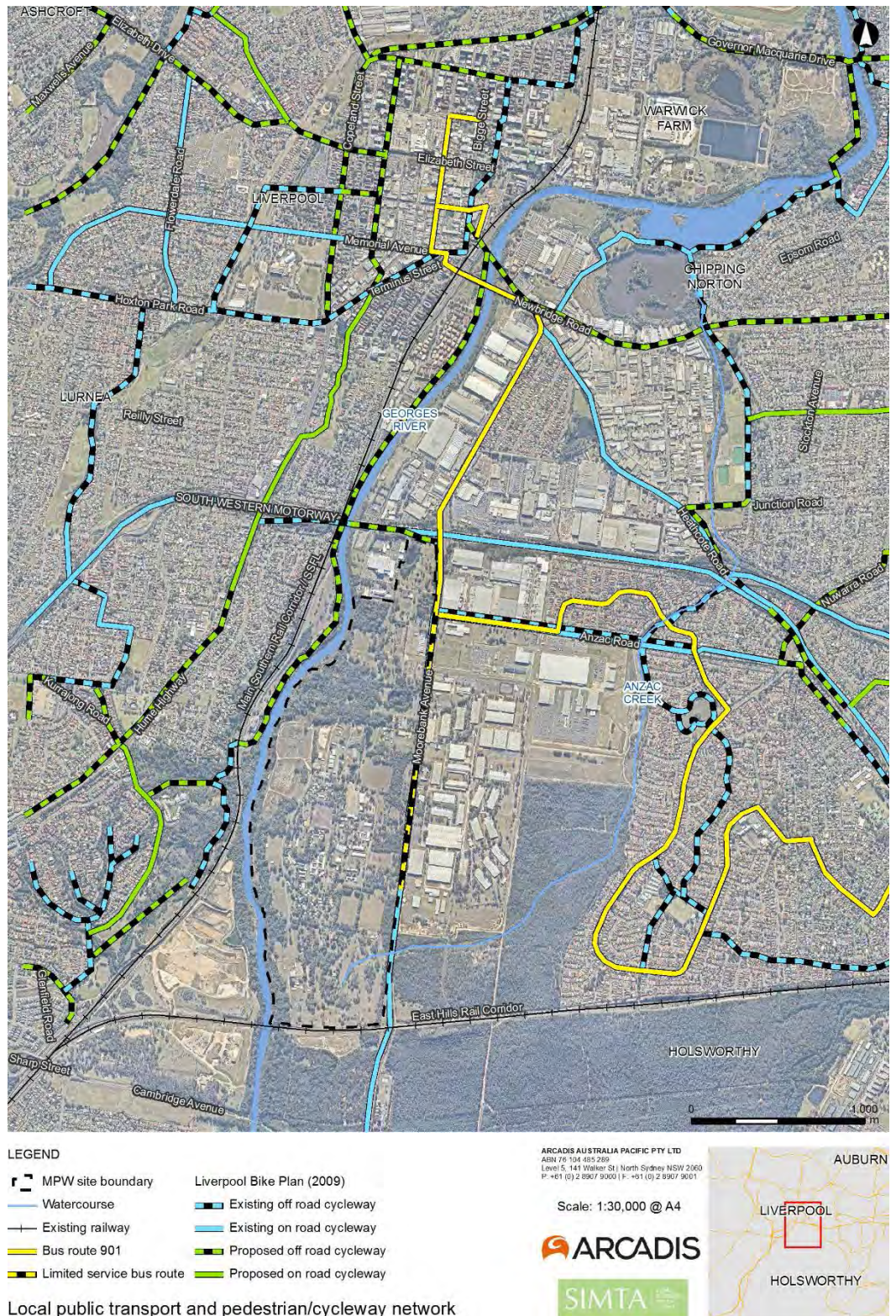
As shown in both Table 7-10 and Table 7-11, all intersections assessed, except for the Cambridge Avenue / Glenfield Road intersection, would deteriorate in LoS over time in the absence of intersection upgrades, with the majority of intersections operating at a performance of E or F. These results indicate the need for road and intersection upgrades to manage future traffic impacts. In particular, the following intersections require upgrades without the addition of the traffic generated by the Proposal:

- Moorebank Avenue / Anzac Road by 2029
- M5 Motorway / Moorebank Avenue by 2029
- M5 Motorway / Hume Highway in both 2019 and 2029
- Moorebank Avenue / Newbridge Road and Moorebank Avenue / Heathcote Road / M5 Motorway / Heathcote Road in both 2019 and 2029.

¹⁸ The modelling indicates here that the performance of the intersection in its current form will be impacted by the M5 Motorway / Moorebank Ave due to spill back of vehicular queues from the M5 Motorway.

7.3.7 Public transport

Figure 7-4 shows the public (bus) and active transport services and routes within the general vicinity of the Proposal.



As shown in Figure 7-4, the MPW site is serviced by one bus service (route 901) which operates along Moorebank Avenue adjacent to the Proposal site, and Anzac road. There are a number of bus stops located along Moorebank Avenue, including one located at the Proposal site’s frontage, however these are serviced on a limited basis with a single bus service during the morning and evening peak periods only. The 901 bus service operates as a feeder service to the Liverpool and Holdsworthy train stations. Bus stops located at the Moorebank Avenue / Anzac Road intersection are serviced full-time, yet these locations are located in an unacceptable walking distance from the centre and southern sections of the Proposal site. Due to poor public transport service in the wider traffic study area, a very low percentage of workers currently use public transport.

Three train stations are also located within the vicinity of the Proposal (four to seven kilometres away). A summary of the service details for each mode of public transport within the vicinity of the Proposal site is provided in Table 7-12.

Table 7-12: Public transport services

Mode	Stop/station	Route Description	Significant destinations on route	Service Frequency
Bus	Moorebank Ave / Anzac Rd junc.	Route 901 (standard route) Liverpool to Holsworthy	Liverpool train station, Liverpool Westfield shopping centre, Wattle Grove shops, Holsworthy train station	30 mins (peak) 60 mins (off-peak)
	Moorebank Ave (site frontage)	Route 901 (via MPW site) Liverpool to Holsworthy		One service during AM and PM peaks
Train	Liverpool train station	T2 Inner West & South Line	Strathfield, Sydney CBD	8 mins (peak) 30 mins (off-peak)
		T3 Bankstown Line	Bankstown, Sydney CBD	15 mins (peak) 30 mins (off-peak)
		T5 Cumberland Line	Parramatta, Blacktown, Glenfield, Campbelltown	30 mins (peak) 30 mins (off-peak)
	Holsworthy train station	T2 Airport & South Line	Airport, Sydney CBD, Glenfield, Campbelltown	8 mins (peak) 20 mins (off-peak)

7.3.8 Active transport

Despite there being no existing cycleway along Moorebank Avenue, on-street cycling is accommodated with lane-marked shoulders of 1.5 – 2.5 metre width. In addition, Moorebank Avenue connects to a series of cycle routes in the surrounding area, as shown in Figure 7-4, in the form of either on-street cycle lanes, shared pedestrian-cycle paths or along local roads.

A number of publications also exist that outline plans to improve the regions cycle-connectivity, including:

- The NSW BikePlan (June 2010) has identified bike routes (to be constructed) around Liverpool on Moorebank Avenue, Heathcote Road and Newbridge Road

- Sydney's Cycling Future (Transport for NSW, 2013) commits to completing missing links in the existing bicycle network to the Liverpool CBD. This would include improving bicycle access to the Liverpool City Centre from the south by completing the missing sections of the off-road walking and cycling corridor along Glenfield Creek, between Casula and Liverpool.
- This improved access would integrate with the cycling routes proposed in the *Liverpool Bike Plan* (Liverpool Council, 2009). Moorebank Avenue is also considered a strategic bicycle corridor in this plan.

Pedestrian facilities include a sealed footpath provided on the western side of Moorebank Avenue with pedestrian crossing facilities located at signalised T-intersections along Moorebank Avenue, which are spaced approximately 250 metres to 600 metres apart. Sightlines along Moorebank Avenue are generally clear, providing motorists suitable opportunity to see pedestrians.

7.3.9 Crash data

Crash data supplied by Roads and Maritime over a five-year period between July 2010 and June 2015 inclusive for the wider road network, shows a total of 444 crashes. Of these 210 (47%) crashes resulted in injuries, 232 (52%) crashes resulted in non-casualty and two crashes (1%) were recoded as fatalities. The crash data appears to be concentrated on State Roads and the M5 Motorway including its associated interchanges with Moorebank Avenue, Hume Highway and Heathcote Road, as shown in Figure 7-5.



Figure 7-5: Distribution of crashes on key roads between 2010 and 2015

From the analysis of the crash data between 2010 and 2015, the following key observations have been identified:

- The majority of crashes were rear-end (45.7%) and are concentrated on the M5 Motorway between Hume Highway and Heathcote Road.
- 27 crashes (6.1%) involved articulated vehicles, with the majority occurring on the M5 Motorway.
- 69 crashes (15.3%) involved heavy vehicles, including articulated trucks, while 98 crashes (22.1%) involved light vehicles. Over 93% of accidents involved private cars¹⁹.
- A low number of crashes occurred on Moorebank Avenue (south of the M5 Motorway), Anzac Road and Cambridge Avenue compared to State Roads crash sites.

7.4 Potential impacts

7.4.1 Construction

Trip Generation

Construction traffic volumes were predicted based on the construction staging program, activities to be undertaken within each Works period and the materials to be transported, as presented in Section 4.3 of this EIS. As discussed in Section 4.3 of this EIS, Works periods have been grouped into construction activities undertaken together for assessment purposes only, and are indicative of construction timing. The estimated material truck loads and daily staff numbers for each of the seven work periods is provided in Table 7-13.

Table 7-13: Estimated Truck Loads and Number of Staff by Construction Works period

Works period	Construction Works period	Estimated Number of Truck trips ²⁰	Estimated Number of Workers on a Typical Day
A	Pre-Construction Stockpiling	33,300	30
B	Site Preparation Activities	650	50
C	Bulk Earthworks, Drainage and Utilities	100,000	50
D	Moorebank Avenue and Internal Road Construction	3,300 (1,800 (Moorebank Ave) + 1,500 for internal roads)	50
E	IMT Facility and Rail Link Connection	11,000	350

¹⁹ Note that the total percentage adds to over 100% because a crash could involve more than one type of vehicle.

²⁰ Estimated total number of truck loads represent the duration of the entire individual Works period.

Works period	Construction Works period	Estimated Number of Truck trips ²⁰	Estimated Number of Workers on a Typical Day
F	Warehouse Construction and Fit out	6,240 (construction of two warehouses concurrently, 3120 truckloads per warehouse)	120 (construction of two warehouses concurrently, i.e. 50/warehouse plus 10/warehouse overseeing construction)
G	Misc. Structural Construction and Finishing works	500	100

The information present in Table 7-13 was used to predict the daily vehicle movements (round trips) to and from the site each working day during the working periods. This traffic generation is considered to represent a conservative estimation of the traffic that would be generated in scenarios where construction Works periods may overlap, as one Works period would be 'ramping down, as the next period is 'ramping up'. The daily construction vehicle movement estimates are presented in Table 7-14.

Table 7-14: Daily construction vehicle movement estimates

Construction Period	Daily Vehicle Movements (round-trip)	
	Truck movements ²¹	Car movements
Works period A – Pre-construction stockpiling	370	30
Works period B – Site preparation activities	26	50
Works period C – Bulk earthworks, drainage and utilities	740	50
Works period D – Moorebank Avenue and internal road construction	19	50
Works period E – IMT facility and Rail link connection construction	31	350
Works period F – Warehouse construction and fit out	20	120
Works period G – Miscellaneous structural construction and finishing works	6	100

As detailed in Table 7-14, daily truck numbers vary considerably (between 6 and 740) depending on the Works period. Period C, which is associated with the bulk earthworks, drainage and utilities activities is expected to generate the highest number of truck movements (740). Car movements are also expected to vary depending on the Works period, with Period E predicted to generate the greatest amount (350) while period A is expected to generate the lowest number (30).

²¹ One vehicle movement incorporates two trips

Construction traffic distribution

Based on construction hours nominated in Section 4.3 of this EIS, it has been assumed that during the peak construction period (occurring during Works period overlap in periods C, D, E and F), the majority of workers on weekdays would arrive on site during the morning peak periods between 6 am and 8 am, and depart the site during the afternoon peak of between 3 pm and 6 pm²². Construction truck movements have been assumed to be evenly distributed across the ten-hour construction day (between 7 am and 5 pm on weekdays).

Table 7-15 below shows the predicted distribution of staff car and construction truck movements throughout the average working day for each work period, including the peak construction overlap period.

Table 7-15: Weekday AM and PM peak hour traffic movements

Works period	AM Peak			PM Peak		
	Truck movements	Car movements	Total	Truck movements	Car movements	Total
Works period A	74	17	91	74	14	88
Works period B	6	28	34	6	24	30
Works period C	148	28	176	148	24	172
Works period D	4	28	32	4	24	28
Works period E	6	196	202	6	168	174
Works period F	4	67	71	4	58	62
Works period G	2	56	58	2	48	50
Peak construction period (overlap in Works periods C, D, E and F)	162	319	481	162	274	436

It is expected that approximately 90% of construction staff cars would travel to the Proposal site from via Moorebank Avenue, and about 10% would be expected to travel to the Proposal site via Anzac Road.

All trucks are expected to travel to the site via Moorebank Avenue from the north. No construction trucks are expected to travel to the site via Anzac Road. There would be minor truck movements via Cambridge Avenue for disposal of unsuitable materials from the Proposal site.

²² This is assumed to be a conservative estimate for staff car movements given the location of the worksites and that some lunchtime movements are also anticipated.

Network performance

Based on the distribution data, construction traffic for the Proposal is expected to impact upon the following key intersections that will provide access for construction cars and trucks:

- I-1 - Moorebank Avenue / Anzac Road intersection
- I-2 - M5 motorway / Moorebank Avenue interchange

SIDRA modelling was undertaken of the above intersections for two impact scenarios outlined in Section 7.2 of this EIS. The assessment focussed on comparing each construction traffic scenario with the existing conditions (without construction traffic) to identify changes in network performance throughout the construction phase of the Proposal. Existing conditions (without construction traffic) are shown below in Table 7-16.

Table 7-16: Existing traffic conditions at key intersections for the Proposal

ID	Intersections	Intersection Control	AM Peak		PM Peak	
			Avg. Delay (seconds)	LoS	Avg. Delay (seconds)	LoS
I-1	Moorebank Avenue / Anzac Road	Existing Signal	18	B	17	B
I-2	M5 Motorway / Moorebank Avenue	Existing Signal	32	C	31	C

Scenario 1 – 2017 conditions with Proposal construction

Scenario 1 represents the stage generating traffic during the Works period A (pre-construction stockpiling). This scenario assumes that Works period A would commence in the third quarter of 2017 and MPE Stage 1 does not operate. Performance of key intersections during this scenario is presented in Table 7-17.

Table 7-17: Modelled level of service and average delay for impacted intersections for Scenario 1

ID	Intersections	Intersection Control	AM Peak		PM Peak	
			Avg. Delay (seconds)	LoS	Avg. Delay (seconds)	LoS
I-1	Moorebank Avenue / Anzac Road	Existing Signal	26	B	21	B
I-2	M5 Motorway / Moorebank Avenue	Existing Signal	33	C	32	C

As shown in Table 7-17, during Works period A (preconstruction stockpiling), the SIDRA model predicts minor impact to delay and level of service at Moorebank Avenue / Anzac Road intersection and M5 Motorway / Moorebank Avenue surface interchange in the

presence of Proposal traffic. Both intersections would operate at a similar level of service (B and C) to the existing conditions at both intersections.

Scenario 2 – 2018 conditions with Proposal construction

Scenario 2 represents traffic conditions at the peak construction period which is anticipated during the overlap in Works periods C, D, E and F²³. It is assumed this period would occur concurrently with MPE Stage 1 operation in mid-2018, and that the new site access at Moorebank Avenue / Anzac Road intersection would be constructed. Table 7-18 shows that during the peak construction period, the SIDRA model predicts minor impact to delay and level of service at the M5 Motorway / Moorebank Avenue surface interchange, and that this intersection would operate at a similar level of service as the existing conditions.

Table 7-18: Modelled level of service and average delay for impacted intersections for Scenario 2

ID	Intersections	Intersection Control	AM Peak		PM Peak	
			Avg. Delay (seconds)	LoS	Avg. Delay (seconds)	LoS
I-2	M5 Motorway / Moorebank Avenue	Existing Signal	38	C	32	C

Analyses of Table 7-17 and Table 7-18 demonstrates that construction of the Proposal would have a minor impact to traffic at the Moorebank Avenue / Anzac Road intersection and the M5 Motorway / Moorebank Avenue in both peak AM and PM periods.

Site access points/intersections

Access and egress to the site construction compounds would be located according to the phase of construction.

It is proposed that all construction related traffic would access the Proposal site via proposed indicative access points shown on Figure 7-6, and tabulated below:

Access point name	Access point location	Indicative timing of access use ²⁴
Earthworks Compound access	Existing signalised intersection on Moorebank Avenue at Chatham Avenue, and access near the south of Chatham Avenue.	Chatham Avenue access would initially be used in Works Period A, and the Moorebank Avenue Intersection would be used at the beginning of Works period E, upon which time the Chatham Avenue Access would be decommissioned.
IMT facility Compound and	New site access at an existing signalised	Works Period E

²³ This represents worst-case and combines all light and heavy vehicle movements within these stages

²⁴ See Section 4 of this EIS for indicative timing of Works periods. The general timing for the use of intersections is yet to be determined and therefore a number of scenarios have been assessed to provide a conservative impact assessment.

Access point name	Access point location	Indicative timing of access use ²⁴
Rail Compound access	intersection on Moorebank Avenue at Anzac Road.	
Rail compound	New site access at an existing signalised intersection on Moorebank Avenue at Anzac Road.	Works period E

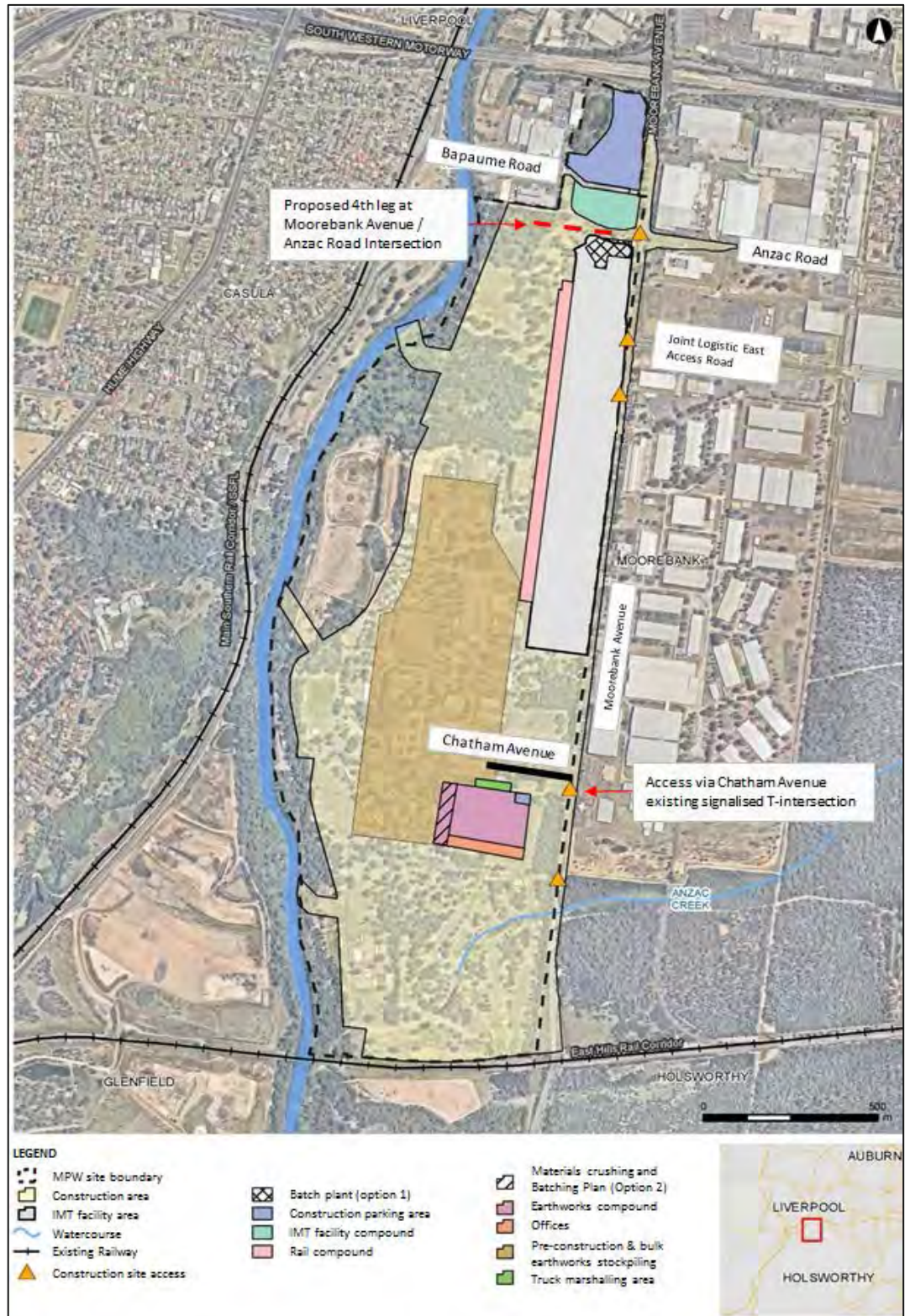


Figure 7-6: Access arrangements during Proposal construction

An assessment of intersection conditions at access points for Scenario 1 and Scenario 2 was undertaken using SIDRA modelling. Assessment of these scenarios is provided below.

Scenario 1 – 2017 conditions with Proposal construction

Scenario 1 includes Works period A (pre-construction stockpiling). During this period an earthworks compound, located to the west of Moorebank Avenue, near the site access off Chatham Avenue (Earthworks Compound Access) would be used. SIDRA modelling was undertaken to assess the intersection performance of the proposed access point as demonstrated below in Table 7-19.

Table 7-19: Modelled level of service with construction traffic for Scenario 1

ID	Intersections	Intersection Control	AM Peak		PM Peak	
			Avg. Delay (seconds)	LoS	Avg. Delay (seconds)	LoS
I-3	Moorebank Avenue / Chatham Avenue	Existing Signal	5	A	5	A

Table 7-19 above suggests that the proposed access at the existing Chatham Avenue traffic signal would operate at level of service A in both morning and afternoon peak, and that construction traffic from the proposed access point at Chatham Avenue would not adversely impact through traffic on Moorebank Avenue.

Scenario 2 – 2018 conditions with Proposal construction

During the Peak construction period (Scenario 2), two access points to construction compounds are proposed. These access points include:

- Earthworks compound access (Moorebank Avenue / Anzac Road intersection)
- IMT facility and Rail compound access (Moorebank Avenue / Chatham Avenue)

The intersection performance of these two access points during scenario 2 is modelled in Table 7-20.

Table 7-20: Modelled level of service with construction traffic for Scenario 2

ID	Intersections	Intersection Control	AM Peak		PM Peak	
			Avg. Delay (seconds)	LoS	Avg. Delay (seconds)	LoS
I-1	Moorebank Avenue / Anzac Road	Updated signal with 4 th leg providing access to MPW site	41	C	35	C
I-3	Moorebank Avenue / Chatham Avenue	Existing Signal	24	B	10	A

Table 7-20 above suggests the upgraded Moorebank Avenue / Anzac Road intersection with the new access road to the MPW site would operate satisfactorily at level of service C in both morning and afternoon peak hour during the peak construction period, and that the proposed access at the existing Chatham Avenue traffic signal would operate at level of service A in both morning and afternoon peak.

In summary, Moorebank Avenue is anticipated to experience an increase in vehicle movements due to construction traffic accessing the work areas, resulting in some delays at intersections and site access points, however these are expected to be minor

and short term in nature. The traffic impact of the construction of the Proposal is anticipated to be minor and appropriate management plans (refer to Section 7.5 of this EIS) would be applied during construction to mitigate this impact.

Access/egress and need for road closures

Works near the Proposal site boundary may result in the partial closure of Moorebank Avenue from time to time. These works would be detailed in the traffic management plan and PCEMP (to be prepared and inform the CEMP) and would include signage and diversion plans to ensure the safe operation of the Moorebank Avenue through traffic.

Impacts to bus public transport

There is currently one bus service in the proximity of the Proposal site (refer to Section 7.3.1 of this EIS), with the service operating north along Moorebank Avenue from Anzac Avenue. There is also one service in each peak hour that runs south, past the Proposal site. Given that the majority of construction activities would be contained on the Proposal site rather than Moorebank Avenue, it is considered unlikely that there would be any significant impacts to public transport services. Any works which impact the carriageway of Moorebank Avenue would be undertaken outside of peak hours to limit impacts to the network operation.

Access for emergency vehicles

All access points for the Proposal site would be made available for emergency vehicle access if the need arises. This would be considered as part of the site safety and incident management plans. As the works are not encroaching onto the road network, this would be an internal site consideration, and is unlikely to have an impact on the surrounding arterial road network.

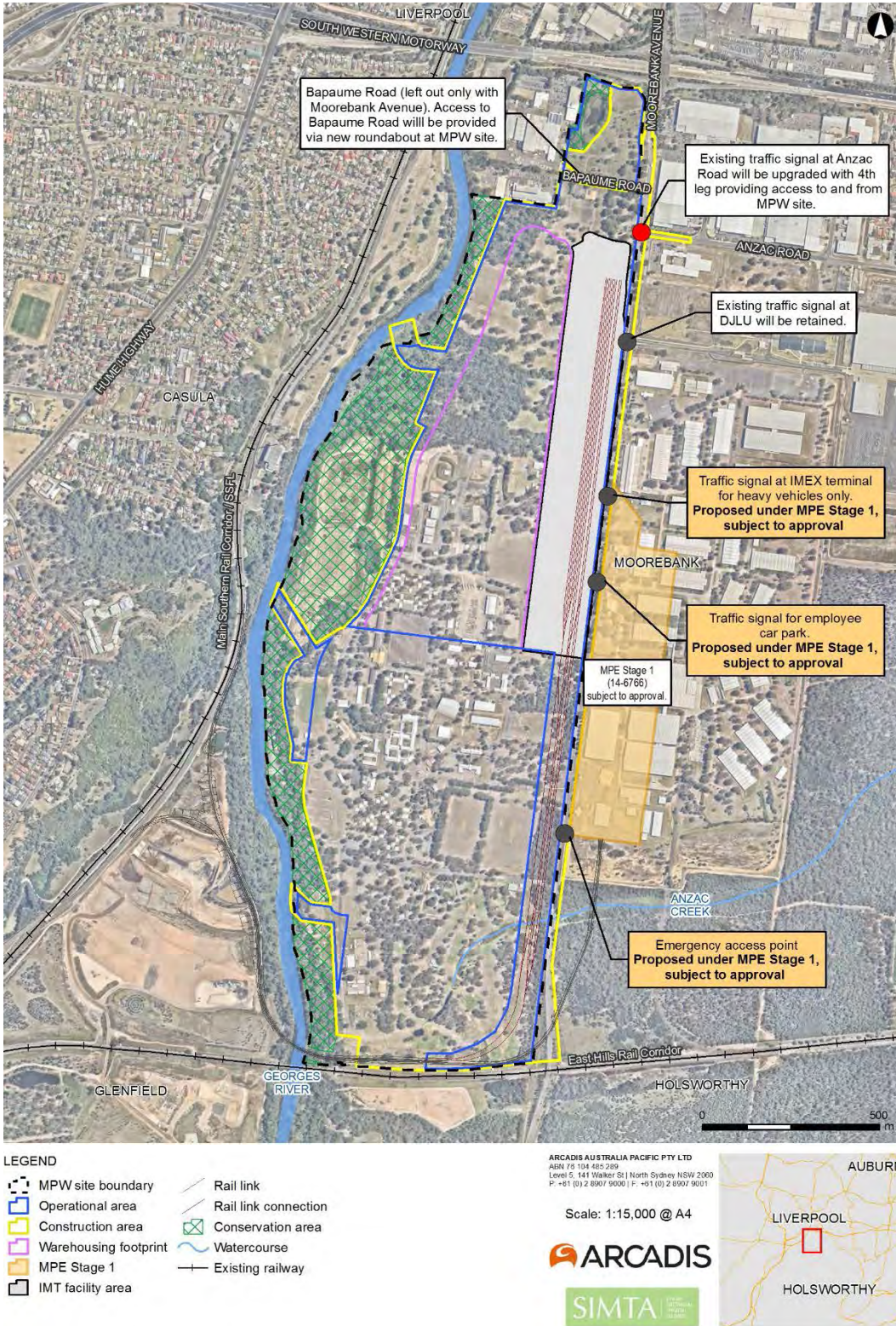
7.4.2 Operation

Site access and operation

The proposed arrangements for site access and on-site traffic flows are described in Section 4.4 of this EIS. In summary, the following two access/egress points are to be used for the Proposal site during operation as shown in Figure 7-7:

- **Moorebank Avenue / Anzac Road Intersection:** Alterations to the existing signalised intersection of Moorebank Avenue/Anzac Road would be required to facilitate access to the Proposal site. The upgrade would include lane capacity improvements on the northern and southern approaches, and the construction of an access road into the Proposal site (new western approach). The current configuration on Anzac Road (eastern approach) would be retained. Refer to Appendix G of this EIS for intersection design drawings.
- **Moorebank Avenue / Bapaume Road:** This intersection would be reconfigured for left out (only) onto Moorebank Avenue. The reconfigured Bapaume Road would allow improved traffic dispersal with the following movements:
 - Inbound traffic to the ABB site would be directed to the upgraded Moorebank Avenue/Anzac Road intersection
 - Northbound traffic out of the ABB site would use Bapaume Road (left-out) to enter Moorebank Avenue

- Northbound traffic from the Proposal site, in particular truck holding areas, would in some instances exit from Moorebank Avenue/Bapaume Road
- Southbound traffic out of the ABB site would use the upgraded Moorebank Avenue/Anzac Road intersection.



Trip Generation

Trip generation assumptions used for this assessment were sourced from the following documents, and are detailed in Table 7-21:

- MPE Stage 2 Proposal/MPW Stage 2 Proposal – Container Handling Movements Memorandum, Neil Matthews Consulting Pty Ltd, 4 August 2016.
- Moorebank Intermodal Terminal Precinct – Traffic Generation and Underlying Assumptions, Memorandum, Parsons Brinckerhoff, 21 June 2016. Appendix C document traffic generation and underlying Assumptions

Table 7-21: Assumptions informing the operation trip generation from the Proposal

Components	Assumptions
Intermodal Terminal	<p>The intermodal terminal facility would operate 52 weeks of year, 7 days a week and 24 hours a day.</p> <p>Containers will arrive every day of the year. In a typical week, 85% of containers will be processed on weekdays (Monday – Friday), with the remaining 15% being processed on Saturday and Sunday.</p> <p>The containers arriving by rail will be transferred on to trucks for transport on-site and off-site. In some instances containers will be unloaded from trains into the container storage area (i.e. stacked) and then transferred onto trucks.</p> <p>Containers are loaded onto either B-doubles or semi-trailers. On average a semi-trailer is equivalent to 1.6 TEUs and a B-double equivalent to 2.4 TEUs</p> <p>About 80% of container deliveries will be made by semi-trailers and 20% by B-doubles.</p>
Warehouse	<p>Warehousing facilities would operate 52 weeks of year, 7 days a week and 24 hours a day.</p> <p>Containers will arrive every day of the year. In a typical week 95% of containers will be processed on weekdays (Monday – Friday), with the remaining 5% being processed on Saturday and Sunday.</p> <p>Container are loaded onto either on to a B-double, semi-trailer or rigid trucks. On average a rigid truck is equivalent to 0.8 TEUs</p> <p>About 65% of delivers will be made by semi-trailers, 30% will be made by rigid trucks and 20% will be made by B-doubles.</p>
Staff shift work	Two shifts per day transitioning to three shifts per day

The operation of the Proposal includes 500,000 TEU throughput per annum and 215,000 square metres of warehousing. The following key figures would be generated by the Proposal:

- The Proposal would generate approximately 1,458 truck trips (2-way) and 2,670 car trips (2-way) to and from the precinct each day.
- The terminal facility is planned to operate 24 hours per day, 7 days per week.
- It is anticipated that approximately 95% of the trucks entering and leaving the terminal are expected to do so between 6 AM and 10 PM. It is envisaged the peak deliveries to/from the terminal will occur in the morning and evening periods.

Temporal distribution for vehicles arriving to the Proposal under various scenarios are outlined in Figure 7-8, Figure 7-9, Figure 7-10, and Figure 7-11.

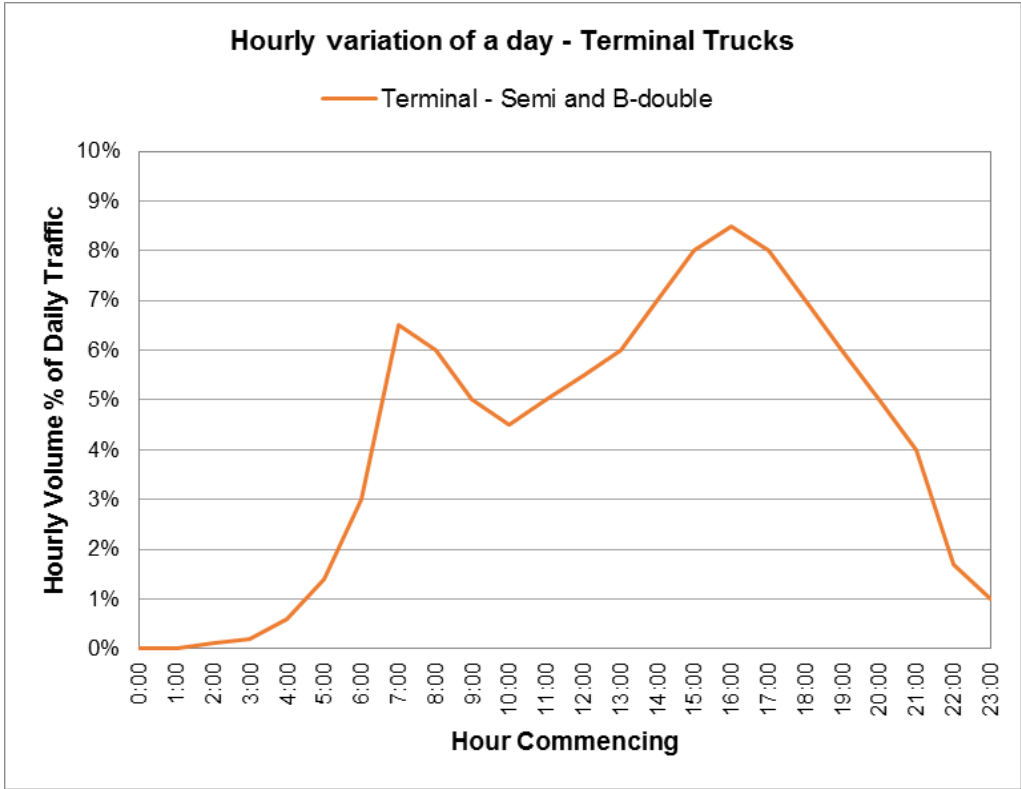


Figure 7-8: Temporal distribution of trucks servicing the Proposal terminal during operation

Figure 7-8 shows the temporal profile for the terminal truck generation assumed for the Proposal. It is predicted that the peak deliveries to and from the terminal would take place in the morning and evening peak periods. Deliveries to and from the warehouse facilities will be undertaken by B-doubles, semi-trailers and rigid trucks. The majority of deliveries will be undertaken by semi-trailers and rigid truck are anticipated during the middle of the day. However, the majority of deliveries undertaken by B-doubles are anticipated outside the AM and PM peak hours, as shown in Figure 7-9.

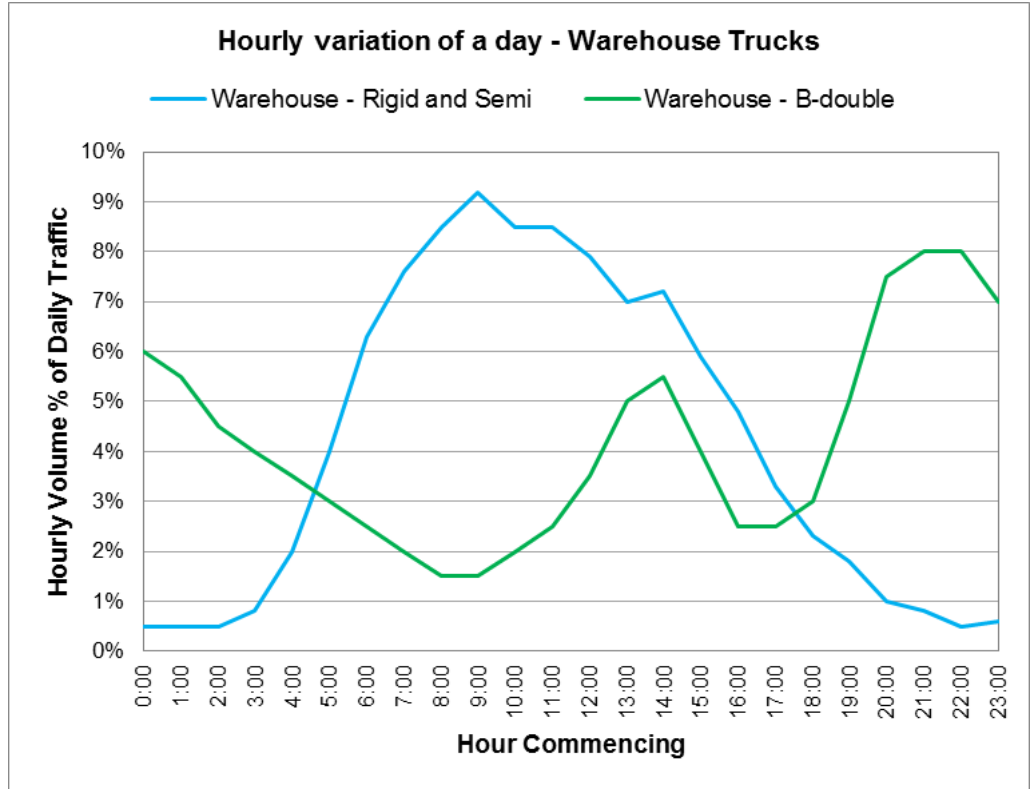


Figure 7-9: Temporal distribution of trucks servicing Warehouse operations for the Proposal

For this assessment it is assumed that the Proposal will become operational in 2019 with the facility working two shifts per day. It is then assumed that by ten years after the operations have commenced (i.e. 2029), the Proposal will be operating with three shifts per day. The distribution of employee cars throughout these two periods are shown in Figure 7-10 and Figure 7-11 respectively.

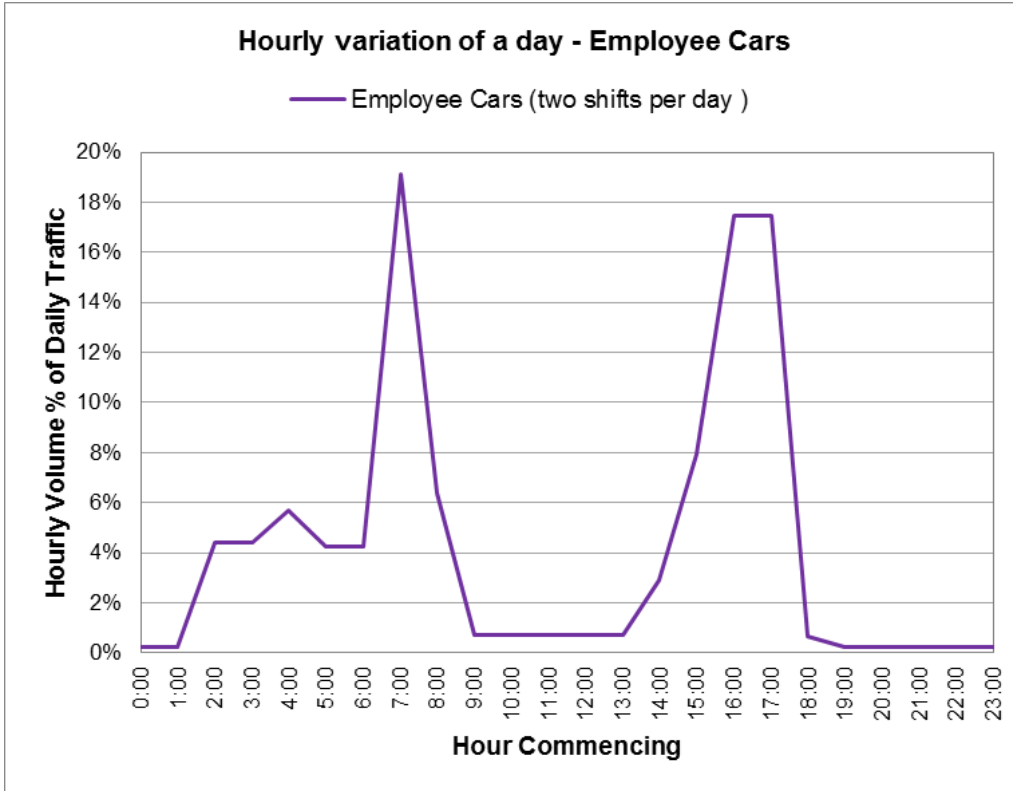


Figure 7-10: Temporal distribution of employee cars associated with the Proposal operation in 2019

Figure 7-10 shows a morning peak of between 7 AM and 8 AM and an evening peak of 4 PM to 5 PM. These AM and PM peak car movements represent about 19% and 17% of total daily car movements, respectively.

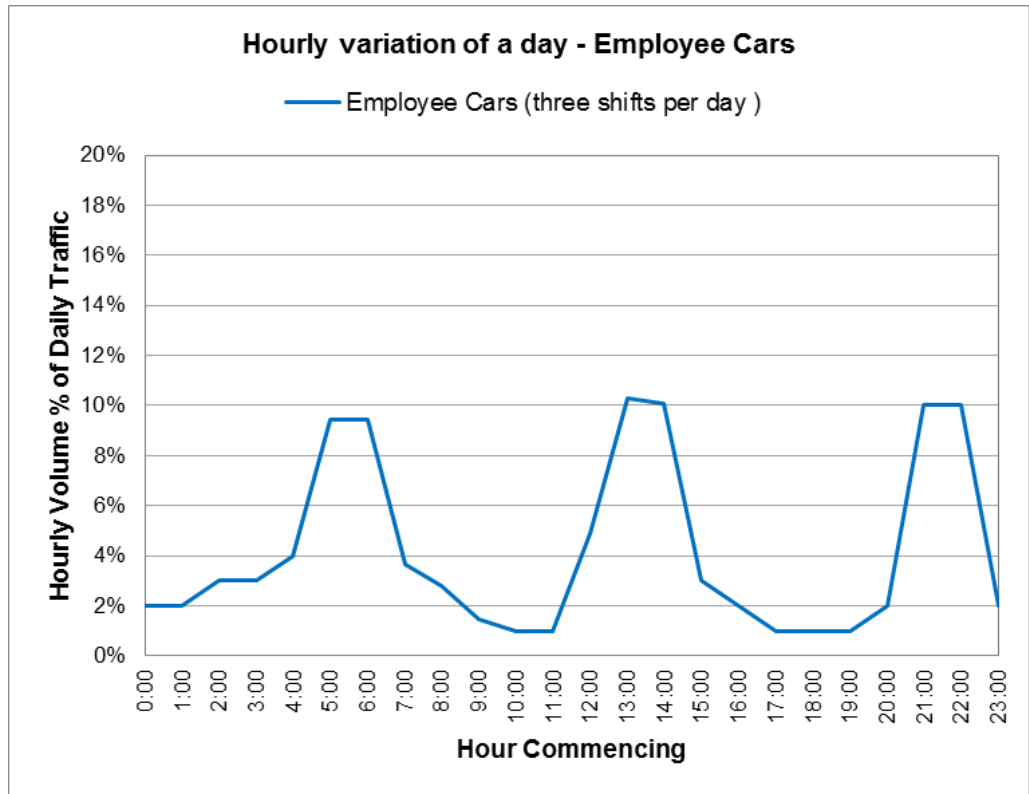


Figure 7-11: Temporal distribution of employee cars associated with the Proposal operation in 2029

Figure 7-11 shows a morning peak between 5 AM and 6 AM and an evening peak between 9 PM and 10 PM, with an inter-peak period occurring between 1 PM and 2 PM. During the AM and PM peak hour, these car movements represent about 9% and 10% of total daily car movements, respectively.

Traffic Distribution

The distribution of additional traffic generated by the Proposal is a key factor in determining the impact of the Proposal on the study road network. Figure 7-12 outlines the origin and directional movement of trucks and cars utilising the Proposal site during operation.

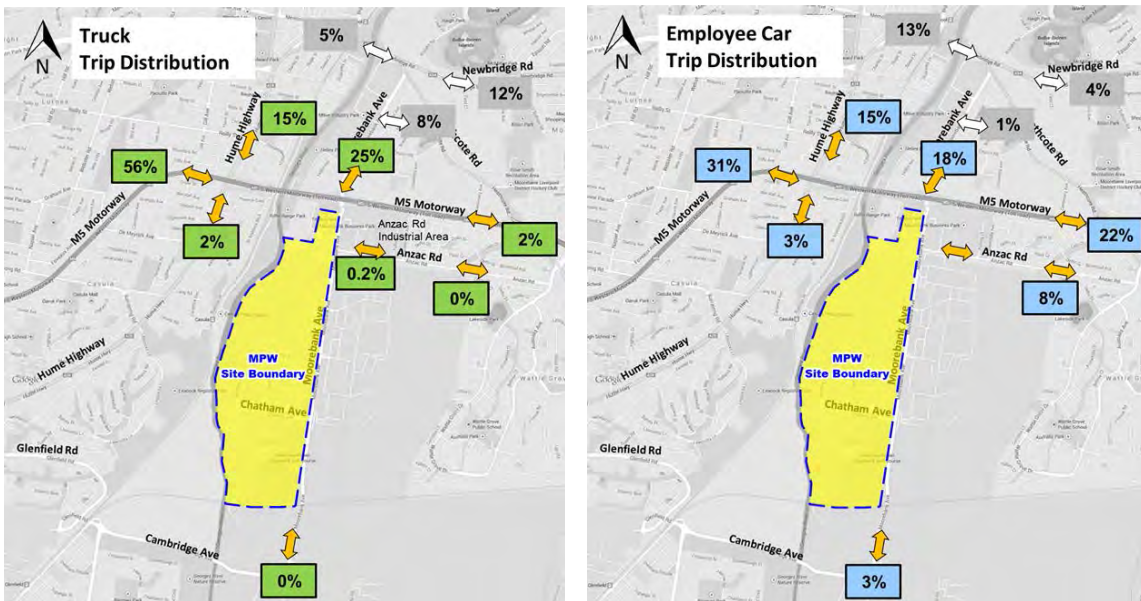


Figure 7-12: Traffic distribution of trucks (left) and employee cars (right) to the Proposal site during the AM Peak period

As shown in Figure 7-12, the majority of trucks generated by the Proposal would reach the Proposal site via the M5 Motorway from the west (56%). Approximately 25% of trucks generated by the Proposal would reach the site from Moorebank Avenue to the north, and about 17% of trucks would arrive via the Hume Highway. In general, all trucks would travel via Moorebank Avenue north of the Precinct. No container trucks would travel via Anzac Road (east of Yulong Close) and Cambridge Avenue to reach the Proposal.

Also shown in Figure 7-12 is the distribution of employee cars travelling to the Proposal site in the AM peak. The figure shows that the majority of employee cars travelling to the Proposal site in the morning peak period would travel via the M5 Motorway to Moorebank Avenue at the northern end of the Proposal. Approximately 18% of employees would enter the M5 Motorway from the Hume Highway to the west, while a minor percentage (8%) of employee traffic would use Anzac Road.

Network performance

Predicted daily traffic volumes

The potential increase in traffic generated by the Proposal was assessed by comparing the forecast numbers for both the 2019 and 2029 operational scenarios on key roads both with and without additional traffic numbers generated by the Proposal. The traffic assessment has assumed that the Proposal will be open to traffic in 2019, and 2029 was selected as it is 10 years after commencement of operations. Forecasted traffic numbers for the Proposal and without are provided in Table 7-22 and Table 7-23.

Table 7-22: Predicted daily traffic numbers with and without the Proposal for the 2019 scenario

ID	Road Locations	2019 without the Proposal		2019 with the Proposal		Traffic Increase Contributed by the Proposal in 2019 Opening Year (% of Background Traffic)
		All vehicle	Heavy Vehicles (%)	All vehicle	Heavy Vehicles (%)	
M-1	Moorebank Avenue, north of Anzac Road	23,200	1,200 (5%)	27,040	2,700 (10%)	3,840 (16.6%)
M-2	Moorebank Avenue, south of Anzac Road	19,000	980 (5%)	19,080	980 (5%)	80 (0.4%)
M-3	Anzac Road, east of Moorebank Avenue	11,100	510 (5%)	11,310	510 (5%)	210 (1.9%)
M-4	Moorebank Avenue, north of Cambridge Avenue	19,000	1,050 (6%)	19,080	1,050 (6%)	80 (0.4%)
M-5	Cambridge Avenue, west of Moorebank Avenue	17,900	630 (4%)	17,980	630 (4%)	80 (0.4%)

Table 7-23: Predicted traffic numbers with and without the Proposal for the 2029 scenario

ID	Road Locations	2029 without the Proposal		2029 with the Proposal		Traffic Increase Contributed by the Proposal in 2029 Opening Year (% of Background Traffic)
		All vehicle	Heavy Vehicles (%)	All vehicle	Heavy Vehicles (%)	
M-1	Moorebank Avenue, north of Anzac Road	28,000	1,450 (5%)	31,840	2,910 (9%)	3,840 (13.7%)
M-2	Moorebank Avenue, south of Anzac Road	23,500	1,220 (5%)	23,580	1,220 (5%)	80 (0.3%)
M-3	Anzac Road, east of Moorebank Avenue	12,800	590 (5%)	13,010	590 (5%)	210 (1.6%)
M-4	Moorebank Avenue, north of Cambridge Avenue	23,600	1,310 (6%)	23,680	1,310 (6%)	80 (0.3%)
M-5	Cambridge Avenue, west of Moorebank Avenue	22,300	780 (3%)	22,380	780 (3%)	80 (0.4%)

As shown in Table 7-22, in the opening year 2019, the highest traffic increase attributable to the Proposal is forecast on Moorebank Avenue (north of Anzac Road) with an increase of 17%. The Proposal traffic would also increase traffic on Anzac Road (east of Moorebank Avenue) by approximately 1.9%. The results show a minor traffic

increase (less than 0.5%) along Moorebank Avenue (south of Anzac Road) and Cambridge Avenue attributable to the Proposal.

Regarding the 2029 assessment (refer to Table 7-23), the traffic increase attributable to the Proposal is expected to be reduced to 14% on Moorebank Avenue (north of Anzac Road) and 1.6% on Anzac Road (east of Moorebank Avenue), due to the Proposal traffic staying static in the presence of an increasing background traffic level. The tables indicate a minor traffic increase (less than 0.5 %) along Moorebank Avenue (south of Anzac Road) and Cambridge Avenue attributable to the Proposal by 2029.

Traffic increases proportional to background

An assessment of potential increases to traffic generated by the Proposal, as a proportion of background traffic, at eight key intersections for 2019 and 2029 was undertaken, and presented in Table 7-24.

Table 7-24: Traffic increases generated to the Proposal in 2019 and 2029

ID	Intersections	Traffic Increase Contributed by the Proposal in 2019 Opening Year (% of Background Traffic)		Traffic Increase Contributed by the Proposal in 2029 (10 years after opening - % of Background Traffic)	
		AM Peak	PM Peak	AM Peak	PM Peak
I-1	Moorebank Avenue / Anzac Road / MPW Access Road	19.8%	26.5%	7.0%	5.8%
I-2	M5 Motorway / Moorebank Avenue	10.9%	13.7%	4.2%	3.4%
I-3	M5 Motorway / Hume Highway	1.2%	1.5%	0.4%	0.4%
I-4	Moorebank Avenue / Newbridge Road	1.5%	1.8%	0.5%	0.4%
I-5	Moorebank Avenue / Heathcote Road	2.2%	2.7%	0.8%	0.6%
I-6	M5 Motorway / Heathcote Road	0.2%	0.2%	0.1%	0.1%
I-7	Cambridge Avenue / Glenfield Road	0.1%	0.1%	0.1%	0.1%
I-8	Cambridge Avenue / Canterbury Road	0.4%	0.5%	0.1%	0.1%

As shown in Table 7-24, the highest traffic increase attributable to the Proposal for the two scenarios modelled is predicted at the Moorebank Avenue / Anzac Road intersection, which would provide vehicular access to the Proposal site. In 2019, it is predicted the Proposal would increase traffic at the Moorebank Avenue / Anzac Road intersection by 20% to 26% during the peak hour. The increase is expected to reduce to increase between 6% and 7% by 2029 due to the increase of background traffic.

The Proposal is also predicted to generate an increase in traffic at the M5 Motorway / Moorebank Avenue intersection by between 11% and 14% in 2019, which would be reduced to between 3.5% and 4.0% by 2029. Increases in traffic due to the Proposal at the M5 Motorway / Hume Highway are less than 2%.

Table 7-24 also shows that the likely traffic increase attributable to the Proposal at the Moorebank Avenue / Newbridge Road and Moorebank Avenue / Heathcote Road intersections would be minor (less than 3%), and any likely traffic increases at the M5 Motorway / Heathcote Road would be marginal (less than 0.5%). Similarly, to the south on Cambridge Avenue, likely traffic increase at two assessed roundabouts would be marginal (less than 1%).

Intersection Performance

Eight key intersections (I-1 to I-8) have been assessed for performance using the SIDRA modelling tool (V.7) in both the 2019 and 2029 predictive scenarios. Table 7-25 and Table 7-26 show the predicted intersection level of service (LoS) with and without the Proposal generated traffic impacts for both 2019 and 2029 scenarios in AM and PM peak periods.

In determining the required intersection improvements to mitigate the impact of Proposal traffic, a “no-worsening of without Proposal traffic” approach has been adopted as this identifies improvements directly attributable to the Proposal i.e. not due to growth in background traffic. Improvements are included as mitigation measures outlined in Section 7.5 of this EIS.

Table 7-25: Intersection performance (LoS) of key intersections with and without the Proposal in 2019

ID	Intersection	Layout	2019 without MPW Stage 2 Proposal				Layout	2019 with MPW Stage 2 Proposal			
			AM Peak (8-9am)		PM Peak (5-6pm)			AM Peak (8-9am)		PM Peak (5-6pm)	
			Delay (sec)	LoS	Delay (sec)	LoS		Delay (sec)	LoS	Delay (sec)	LoS
I-1	Moorebank Avenue / Anzac Road / MPW access road	Existing Layout	24	B	16	B	With upgrade & improve signals	41	C	42	C
I-2	M5 Motorway / Moorebank Avenue	Existing Layout	49	D	27	B	With upgrade & improve signals	20	B	20	B
I-3	M5 Motorway / Hume Highway	Existing Layout	134	F	32	C	Improve signals	56	E	28	B
I-4	Moorebank Avenue / Newbridge Road	Existing Layout	61	E	60	E	With upgrade & improve signals	47	D	37	C
I-5	Moorebank Avenue / Heathcote Road	Existing Layout	66	E	63	E	With upgrade & improve signals	75	F	34	C
I-6	M5 Motorway / Heathcote Road	Existing Layout	78	F	69	E	Improve signals	31	C	36	C
I-7	Cambridge Avenue / Glenfield Road	Existing Layout	8	A	12	A	Existing layout	8	A	12	A
I-8	Cambridge Avenue / Canterbury Road	Existing Layout	10	A	7	A		8	A	7	A

Table 7-26: Intersection performance (LoS) of key intersections with and without the Proposal in 2029

ID	Intersection	Layout	2029 without MPW Stage 2 Proposal				Layout	2029 with MPW Stage 2 Proposal			
			AM Peak (8-9am)		PM Peak (5-6pm)			AM Peak (8-9am)		PM Peak (5-6pm)	
			Delay (s)	LoS	Delay (s)	LoS		Delay (s)	LoS	Delay (s)	LoS
I-1	Moorebank Avenue / Anzac Road / MPW access road	Existing Layout	52	D	95	F	With Upgrade & Improve Signals	53	D	45	D
I-2	M5 Motorway / Moorebank Avenue	Existing Layout	74	F	125	F	With Upgrade & Improve Signals	30	C	38	C
I-3	M5 Motorway / Hume Highway	Existing Layout	155	F	129	F	Improve Signals	73	F	38	C
I-4	Moorebank Avenue / Newbridge Road	Existing Layout	78	F	94	F	With Upgrade & Improve Signals	50	D	42	C
I-5	Moorebank Avenue / Heathcote Road	Existing Layout	78	F	153	F	With Upgrade & Improve Signals	70	E	78	F
I-6	M5 Motorway / Heathcote Road	Existing Layout	78	F	336	F	Improve Signals	38	C	77	F
I-7	Cambridge Avenue / Glenfield Road	Existing Layout	10	A	7	A	Existing Layout	8	A	8	A
I-8	Cambridge Avenue / Canterbury Road	Existing Layout	14	B	10	A		20	B	7	A

To accommodate the Proposal, alterations to the existing signalised intersection at Moorebank Avenue/Anzac Road would be required to facilitate access to the Proposal site. The proposed configuration of this intersection would include lane capacity improvements on the northern and southern approaches, and the construction of an access road into the Proposal site (new western approach). The current configuration on Anzac Road (eastern approach) would be retained (refer to Appendix G of this EIS for intersection design drawings).

The analysis shows that in 2019 the upgraded intersection with the Proposal is expected to perform at LoS C which is comparable to the without Proposal scenario with LoS B in 2019. Given that the comparison in intersection performance is between a three-leg intersection (without Proposal) and a four-leg intersection (with Proposal), this has been deemed acceptable. In 2029 with the Proposal, the intersection is expected to perform at LoS E which is better than LoS F without the Proposal.

The M5 Motorway/Moorebank Avenue, M5 Motorway/Hume Highway, Moorebank Avenue/Newbridge Road and M5 Motorway/Heathcote Road intersections are all predicted to perform better with the Proposal than without both for the 2019 and 2029 scenarios assessed. The Moorebank Avenue/Heathcote Road intersection is predicted to perform at a slightly worse (LoS F in 2019 and 2029) performance level with the Proposal than without the Proposal (LoS E in 2019 and LoS F in 2029) for both scenarios.

Impacts predicted on Cambridge Avenue and the two roundabouts at Cambridge Avenue/Glenfield Road and Cambridge Avenue/Canterbury Road are minor, given the traffic (light vehicles only) generated by the Proposal using this road would be minimal (refer to Figure 7-12) and both intersections would be operating with LoS between A and B (respectively) both with and without the Proposal for both scenarios.

In summary, the results identify the following:

- The upgraded Moorebank Avenue /Anzac Road signalised intersection will adequately cater for the Proposal in 2019 and 2029
- The Proposal would likely exceed the current capacity at the M5 Motorway/Moorebank Avenue intersection and upgrades to this intersection are required.
- Capacity improvements are required at the following intersections due to an existing operational network problem, without consideration of the Proposal:
 - Moorebank Avenue/Newbridge Road intersection
 - Moorebank Avenue/Heathcote Road intersection
- Capacity improvements are required at the following intersections to cater for the growth in background demand (i.e. not due to the Proposal):
 - M5 Motorway/Hume Highway
 - M5 Motorway/Heathcote Road signalised intersections
- Minor impacts attributed to the Proposal are anticipated to roundabouts associated with Glenfield Road and Canterbury Road with Cambridge Avenue, and no upgrades are required.

The recommended intersection improvements (refer to Section 7.5 of this EIS) to mitigate the traffic impacts of the Proposal are adequate and perform within an acceptable LoS with no-worsening of the performance without the Proposal.

Impacts to bus public transport

As described in Section 7.3.1.6, the long walking distance to the 'full-time' bus stops at Moorebank Road and Anzac Road intersection from the warehouse area within the Proposal site is considered unsatisfactory (refer Figure 7-13). To improve bus transport

access to the precinct, additional bus stops are proposed on the internal road in order to ensure a 400 metre walking distance (“as the crow flies”) to all proposed warehouses and offices.

Whilst there would be additional heavy vehicles on Moorebank Avenue, the service frequencies of the buses are considered low and as such the Proposal is not anticipated to have any substantial impacts on bus public transport services.



Existing bus stops

Figure 7-13: Existing bus stop locations

Impacts to cycling

Overall, the existing cycling infrastructure in the area is considered adequate. On-road cycle facilities are currently available along Moorebank Avenue, for which the Proposal does not involve any alterations to. Cycling along the sealed and marked shoulders of Moorebank Avenue therefore remains suitable. The Proposal would not result in any adverse impact to cycle accessibility. It is proposed that off-road pedestrian/cycle paths and on-road cycle provisions will be provided within the Proposal site to improve pedestrian and cyclist accessibility for workers, as outlined in Figure 7-14.

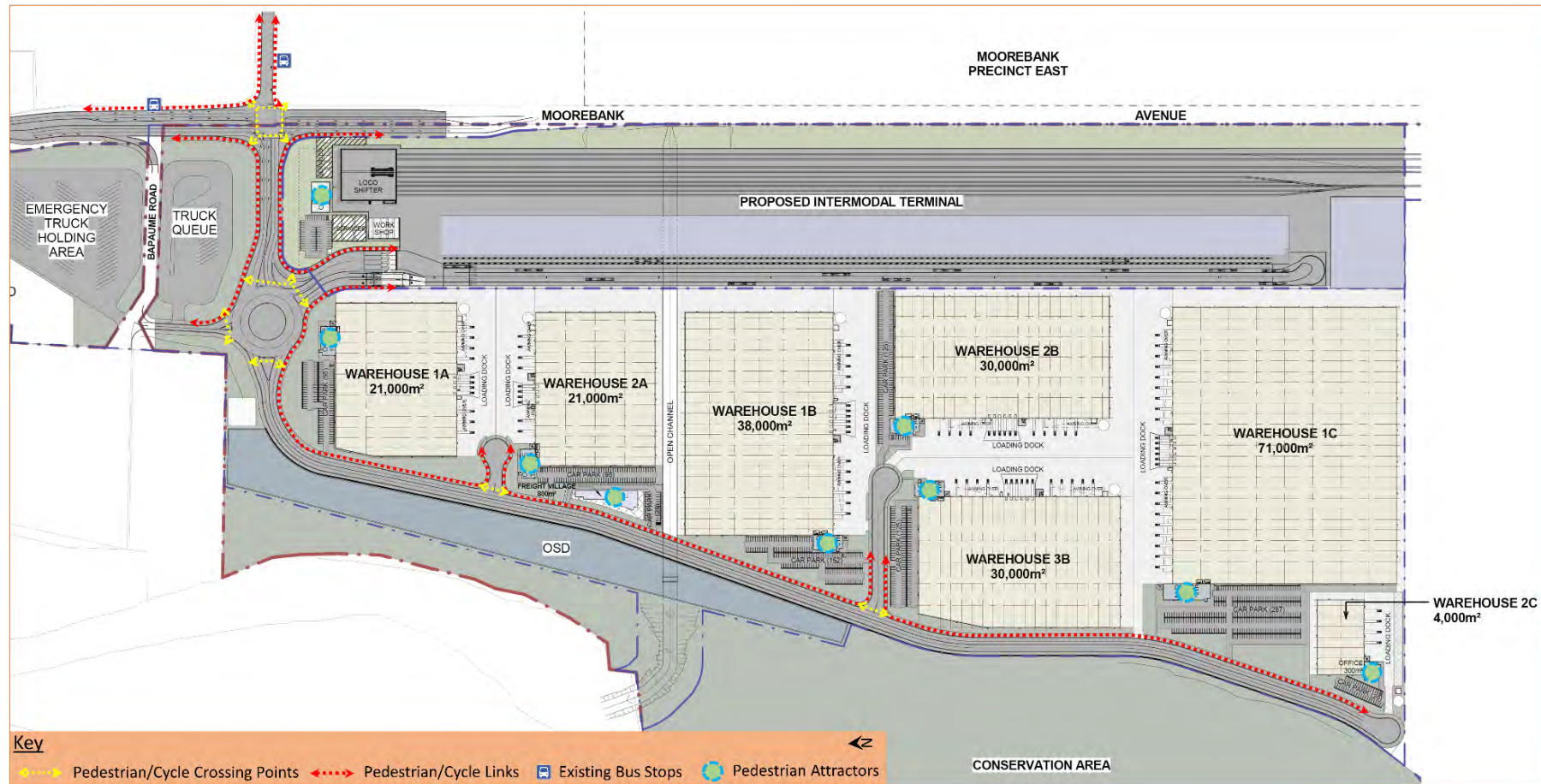


Figure 7-14: Proposed Pedestrian and Cyclist Connectivity

Impacts to pedestrians

Generally, the existing pedestrian infrastructure in the area is considered adequate. A sealed footpath is provided on the western side of Moorebank Avenue with pedestrian crossing facilities located at signalised T-intersections along Moorebank Avenue. Direct connection to the surrounding pedestrian paths on Moorebank Avenue and Anzac Road from the Proposal site is proposed to be through the signalised intersection at Moorebank Avenue/ Anzac Road. Pedestrians can would only access the Proposal site via the main entrance, as a result of safety and security requirements (i.e. avoiding the operational rail siding).

The Proposal includes pedestrian and cycle pathways within the development, which connect to the existing surrounding infrastructure. Access to the Proposal from Casula Station is most likely to be undertaken via public transport as it is approximately six kilometres walk from the station. At this stage the Proposal does not include a direct pedestrian access to the station across the Georges River as this is considered unfeasible based on the land ownership and environmental concerns. Notwithstanding this, the design of the Proposal does not preclude the development of a direct pedestrian access to the Casula Station should this be considered suitable in the future.

Impacts to crashes

Moorebank Avenue

Between the years 2010 and 2015, a total of 51 crashes were reported on the 3.5 km section of Moorebank Avenue between the M5 Motorway interchange and Cambridge Avenue. This data translates to approximately 10.2 crashes per year, which has been interpreted as being representative of existing conditions.

The Proposal will increase daily traffic volumes on Moorebank Avenue (north of Anzac Road) by approximately 17% in 2019, which is predicted to reduce to a 14% increase by 2029. The analysis indicates that daily traffic volumes are expected to increase on Moorebank Avenue (north of Anzac Road) from 21,300 vehicles (2015) to 27,040 vehicles (forecast 2019 with the Proposal) and 31,840 vehicles in 2029 (refer to Table 7-22 and Table 7-23).

The net impact of the additional traffic generated by the Proposal, as well as the proposed access points and improvements associated with the Proposal would result in an increase from 10.2 crashes per year to 11.6 crashes per year.

Cambridge Avenue

The period between 2010 and 2015 saw a total of 25 reported crashes on the section of Cambridge Avenue between Moorebank Avenue and Canterbury Road roundabout (about 1.8 km). This translates to approximately 5 crashes per year and has been interpreted as the existing condition for assessment. It has been established that the Proposal would be responsible for a minor increase to daily traffic volumes on Cambridge Avenue (less than 0.5%), and about 80 employee cars would be expected to use Cambridge Avenue per day as a result of the Proposal. The analysis indicates that daily traffic volumes increase on Cambridge Avenue (east of Canterbury Road) from 15,700 vehicles (2015) to 17,980 vehicles (forecast 2019 with the Proposal) and 22,380 vehicles in 2029. With the Proposal, the crash rate on the Cambridge Avenue is forecast to increase from 5 to approximately 5.2 crashes per year.

Parking Provisions

For warehouse and office land uses, the Roads and Maritime recommends the following car parking provision:

- 1 car space per 300 m² Gross Floor Area (GFA) for warehouses
- 1 car space per 40 m² GFA for offices.

Based on the proposed warehouse and office gross floor areas for the Proposal, a total of 983 car parking spaces are proposed. A detailed breakdown of parking spaces according to warehouse is provided in Section 4.2 of this EIS.

The Liverpool DCP was considered, however this did not break down controls into individual land uses and used a generalised approach, which is not considered suitable for this type of development.

The *City of Sydney Section 3 – General Provisions* was adopted for this assessment to determine the required number of bicycle parks provided for the Proposal. The guideline stipulates the following on-site bike parking rates for Industry or Warehouse/Distribution Centres:

- 1 bicycle rack per 10 staff/employees
- 1 personal locker for each bike parking space
- 1 shower and change cubicle for up to 10 bike parking spaces
- 2 shower and change cubicles for 11 to 20 or more bike parking spaces are provided
- 2 additional showers and cubicles for each additional 20 bike parking spaces or part thereof.

The Proposed warehouse and office GFAs for the Proposal, along with the number of employees within each warehouse/office would be considered during detailed design to determine the number bike spaces, lockers and shower/change cubicles to be included for the Proposal.

7.5 Mitigation measures

7.5.1 Construction

A Construction Traffic Management Plan (CTMP) would be prepared based on the Preliminary Construction Traffic Management Plan (Appendix M of this EIS), detailing management controls to be implemented to avoid or minimise impacts to traffic, pedestrian and cyclist access, and the amenity of the surrounding environment. The following key initiatives would be included in the CTMP:

- Review of speed restrictions along Moorebank Avenue and additional signposting of speed limitations
- Restriction of haulage routes through signage and education to ensure, where possible, that construction vehicles do not travel through nearby residential areas to access the Proposal site, in particular Moorebank (Anzac Road) or the Wattle Grove residential areas
- Inform local residents (in conjunction with the Community Information and Awareness Strategy) of the proposed construction activities and road access restrictions that the construction traffic must adhere to and establish communication protocols for community feedback on issues relating to construction vehicle driver behaviour and construction related matters
- Installation of specific warning signs at entrances to the construction area to warn existing road users of entering and exiting construction traffic
- Establishing pedestrian walking routes and crossing points

- Distribution of day warning notices to advise local road users of scheduled construction activities
- Installation of appropriate traffic control and warning signs for areas identified where potential safety risk issues exist
- The promotion of car-pooling for construction staff and other shared transport initiatives during the pre-construction phase
- Management of the transportation of materials to maximise vehicle loads and therefore minimise vehicle movements
- Minimising the volumes of construction vehicles travelling during peak periods
- Maintaining access to neighbouring properties, in particular the ABB site
- Monitoring of traffic on Moorebank Avenue during peak construction periods to ensure that queuing at intersections does not unreasonably impact on other road users.

In addition, a Road Safety Audit would be undertaken on Cambridge Avenue to identify potential traffic safety risks from the Proposal (in consideration of background traffic) and determine appropriate mitigation.

7.5.2 Operation

As shown throughout Section 7.4 of this EIS, the Proposal would result in only marginal traffic impacts to the surrounding road network. The analysis has shown that many of the key intersections within the core traffic study area would require upgrades to manage existing and projected background traffic volumes in the absence of the Proposal. It is therefore concluded that improvements to the road network are required to cater for the forecast increases to traffic numbers resulting from the proposal and general growth in background traffic passing through the wider traffic study area. A summary of the intersections which are to be upgraded (in part or in full) as part of the Proposal, subject to negotiations with Roads and Maritime, is detailed in Table 7-27.

Table 7-27: Recommended Road Network Improvements and Timing

ID	Intersection	Recommended Network Improvements to Mitigate Proposal Traffic	Indicative Timing
I-1	Moorebank Avenue / Anzac Road	<ol style="list-style-type: none"> 1. Upgrade Moorebank Avenue/Anzac Road signalised intersection to include lane capacity improvements on the northern and southern approaches, and the construction of a new access road into the Proposal site (new western approach). The current configuration on Anzac Road (eastern approach) will be retained. 2. Implement vehicle actuated signals 3. Upgraded intersection to comply with relevant Roads and Maritime design standards 	2019

The Operational Traffic Management Plan would be prepared based on the Preliminary Operational Traffic Management Plan (Appendix M of this EIS) and include the following key initiatives:

- Heavy vehicle route management
- Safety and amenity of road users and public
- Congestion management on Moorebank Avenue
- Road user delay management

- Information signage, distance information and advance warning systems
- Driver code of conduct
- Incident management
- Traffic monitoring.

The following mitigation measures are considered suitable to address provision of public transport and active transport facilities relating to the Proposal:

- Consultation with TfNSW would be conducted regarding the provision for active transport to/from the Proposal site and along the internal perimeter road, as part of detailed design for the Proposal
- Bicycle and end of trip facilities would be provided in accordance with the *City of Sydney Section 3 – General Provisions*
- Consultation would be undertaken with relevant bus provider(s) regarding the potential to extend the 901 bus service (or equivalent) and additional bus stops with the aim of maximising public transport accessibility to and within the Proposal site.

7.6 Network Solutions

A summary of the intersections which would operate at a level of service which is unsatisfactory without the Proposal are provided below. We would recommend that Roads and Maritime consider these solutions to improve the existing and future operation of the local road network. These are presented as potential road network solutions however are not nominated for delivery for the Proposal.

Table 7-28: Recommendations for Network Improvements due to Background Traffic

ID	Intersection	Recommended Network Improvements due to Background Traffic	Indicative Timing
I-2	M5 Motorway / Moorebank Avenue	<ol style="list-style-type: none"> 1. Provide additional capacity on M5 westbound on-ramp. 2. Provide additional capacity on M5 eastbound off-ramp 3. Increase the storage lengths of the existing (two-lane) right turn bay on Moorebank Avenue northern approach 4. Widen Moorebank Avenue to four lanes between the M5 Motorway/Moorebank Avenue intersection and Moorebank Avenue/Anzac Road intersection 5. Change the signal to vehicle actuated to improve west and north approaches 7. Upgraded intersection to comply with relevant Roads and Maritime design standards 	Staged upgrading starting from 2019
I-3	M5 Motorway / Hume Highway	Change the signal to vehicle actuation in the PM peak to improve traffic signal operations	2019
I-4	Moorebank Avenue / Newbridge Road	<ol style="list-style-type: none"> 1. Add an additional right turn lane from Moorebank Avenue south approach and change the signal to vehicle actuation in the PM peak to improve traffic signal operations. 2. Upgraded intersection to comply with relevant Roads and Maritime design standards 	2019

ID	Intersection	Recommended Network Improvements due to Background Traffic	Indicative Timing
I-5	Moorebank Avenue / Heathcote Road	1. Extend right turn lane from Moorebank Avenue south approach and change the signal to vehicle actuation in the PM peak to improve traffic signal operations. 2. Upgraded intersection to comply with relevant Roads and Maritime design standards	2019
I-6	M5 Motorway / Heathcote Road	Change the signal to vehicle actuated in PM peak to improve traffic signal operations.	2019
I-7	Cambridge Avenue / Glenfield Road	No improvements required	
I-8	Cambridge Avenue / Canterbury Road	No improvements required	

Developer contributions

The analysis has identified a number of intersections which are in part impacted by the Proposal and require upgrade. It is considered acceptable that developer contributions, from SIMTA, would be provided to assist with the development of these intersections however this would need to be confirmed through discussions with Roads and Maritime.

Notwithstanding this, the Precinct Model is currently envisaged to provide a whole of precinct based approach which will provide Roads and Maritime with further information on upgrades to be undertaken for each stage of the Moorebank Precinct. It is understood, from discussions with Roads and Maritime that the Precinct Model, although part of a separate process to the EIS for the Proposal, would be used to guide developer contributions for the Precinct. Therefore it is likely that an agreement on developer contributions for the Proposal would be undertaken as a part of the activities associated with the Precinct Model once it is available.