

# Moorebank Intermodal Terminal Project Environmental Impact Statement

## Volume 9

October 2014







# Technical Paper 14 Social Impact Assessment





## Contents of the EIS

### EIS Summary

#### VOLUME 1a

- Chapter 1 – Introduction
- Chapter 2 – Site context and environmental values
- Chapter 3 – Strategic context and need for the Project
- Chapter 4 – Planning and statutory requirements
- Chapter 5 – Stakeholder and community consultation
- Chapter 6 – Project development and alternatives
- Chapter 7 – Project built form and operations
- Chapter 8 – Project development phasing and construction
- Chapter 9 – Project sustainability
- Chapter 10 – Impact assessment approach
- Chapter 11 – Traffic, transport and access
- Chapter 12 – Noise and vibration
- Chapter 13 – Biodiversity
- Chapter 14 – Hazards and risks
- Chapter 15 – Contamination and soils

#### VOLUME 1b

- Chapter 16 – Hydrology, groundwater and water quality
- Chapter 17 – Local air quality
- Chapter 18 – Regional air quality
- Chapter 19 – Greenhouse gas assessment
- Chapter 20 – Aboriginal heritage
- Chapter 21 – European heritage
- Chapter 22 – Visual and urban design
- Chapter 23 – Property and infrastructure
- Chapter 24 – Social and economic impacts
- Chapter 25 – Human health risks and impacts
- Chapter 26 – Waste and resource management
- Chapter 27 – Cumulative impacts
- Chapter 28 – Environmental management framework
- Chapter 29 – Environmental risk analysis
- Chapter 30 – Project justification and conclusions
- Chapter 31 – References

#### VOLUME 2

- Appendix A – EIS Project team
- Appendix B – EIS guidelines and requirements
- Appendix C – Compliance with the Georges River REP principles
- Appendix D – Consultation information, materials and outcomes
- Appendix E – MCA criteria relating to Project objectives
- Appendix F – Layouts of shortlisted Project alternatives
- Appendix G – Peer review endorsement letters
- Appendix H – Provisional EMPs
- Appendix I – Environmental record of Proponent
- Appendix J – Compliance with Schedule 1, Part 1 and 2 of the (NSW) *Environmental Planning and Assessment Regulation 2000*
- Appendix K – Tenure history of the Project site

### TECHNICAL PAPERS

#### EIS Volume 3

- 1 – Traffic and Transport Impact Assessment
- 2 – Noise and Vibration Impact Assessment

#### EIS Volume 4

- 3 – Ecological Impact Assessment (with associated Biodiversity Offset Strategy)
- 4 – Preliminary Risk Assessment

#### EIS Volume 5a

- 5 – Environmental Site Assessment (Phase 2)

#### EIS Volume 5b

- 5 – Environmental Site Assessment (Phase 2)  
Appendices C to F

#### EIS Volume 6

- 6 – Surface Water Assessment
- 7 – Local Air Quality Impact Assessment
- 8 – Regional Air Quality Impact Assessment
- 9 – Greenhouse Gas Assessment

#### EIS Volume 7

- 10 – Aboriginal Heritage Impact Assessment

#### EIS Volume 8

- 11 – European Heritage Impact Assessment
- 12 – Visual Impact Assessment

#### EIS Volume 9

- 13 – Light Spill Impact Assessment
- 14 – Social Impact Assessment
- 15 – Human Health Risk Assessment
- 16 – Health Impact Assessment

# Contents

## **VOLUME 1A – MAIN VOLUME**

Declaration

Glossary and abbreviations

Executive summary

Chapter 1	Introduction
Chapter 2	Site context and environmental values
Chapter 3	Strategic context and need for the Project
Chapter 4	Planning and statutory requirements
Chapter 5	Stakeholder and community consultation
Chapter 6	Project development and alternatives
Chapter 7	Project built form and operations
Chapter 8	Project development phasing and construction
Chapter 9	Project sustainability
Chapter 10	Impact assessment approach
Chapter 11	Traffic, transport and access
Chapter 12	Noise and vibration
Chapter 13	Biodiversity
Chapter 14	Hazards and risks
Chapter 15	Contamination and soils

## **VOLUME 1B – MAIN VOLUME**

Chapter 16	Hydrology, groundwater and water quality
Chapter 17	Local air quality
Chapter 18	Regional air quality
Chapter 19	Greenhouse gas assessment
Chapter 20	Aboriginal heritage
Chapter 21	European heritage
Chapter 22	Visual and urban design
Chapter 23	Property and infrastructure
Chapter 24	Social and economic impacts
Chapter 25	Human health risks and impacts
Chapter 26	Waste and resource management

Chapter 27	Cumulative impacts
Chapter 28	Environmental management framework
Chapter 29	Environmental risk analysis
Chapter 30	Project justification and conclusions
Chapter 31	References

## **VOLUME 2 – APPENDICES**

Appendix A	EIS Project team
Appendix B	EIS guidelines and requirements
Appendix C	Compliance with the Georges River Regional Environment Plan (REP) principles
Appendix D	Consultation information, materials and outcomes
Appendix E	MCA criteria relating to Project objectives
Appendix F	Layouts of shortlisted Project alternatives
Appendix G	Peer review endorsements
Appendix H	Provisional EMPs
Appendix I	Environmental record of Proponent
Appendix J	Compliance with Schedule 1, Part 1 and 2 of the <i>Environmental Planning and Assessment Regulation 2000 (NSW)</i>
Appendix K	Tenure history of the Project site

## **VOLUME 3**

Technical Paper 1	Traffic and Transport Impact Assessment
Technical Paper 2	Noise and Vibration Impact Assessment

## **VOLUME 4**

Technical Paper 3	Ecological Impact Assessment (with associated Biodiversity Offset Strategy)
Technical Paper 4	Preliminary Risk Assessment

## **VOLUME 5A**

Technical Paper 5	Environment Site Assessment (Phase 2)
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## **VOLUME 5B**

Technical Paper 5 Environment Site Assessment (Phase 2)  
– Appendices C-F

## **VOLUME 6**

Technical Paper 6 Surface Water Assessment  
Technical Paper 7 Local Air Quality Impact Assessment  
Technical Paper 8 Regional Air Quality Impact Assessment  
Technical Paper 9 Greenhouse Gas Assessment

## **VOLUME 7**

Technical Paper 10 Aboriginal Heritage Impact Assessment

## **VOLUME 8**

Technical Paper 11 European Heritage Impact Assessment  
Technical Paper 12 Visual Impact Assessment

## **VOLUME 9**

Technical Paper 13 Light Spill Impact Assessment  
Technical Paper 14 Social Impact Assessment  
Technical Paper 15 Human Health Risk Assessment  
Technical Paper 16 Health Impact Assessment





Moorebank Intermodal Company

# Moorebank Intermodal Terminal Project - Social Impact Assessment Technical Paper

15 July 2014

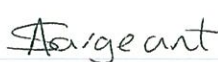


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# Contents

	Page number
Glossary	v
Executive summary	vii
<b>1. Introduction</b>	<b>1</b>
1.1 The Moorebank Intermodal Terminal Project	1
1.2 Rail access options and layouts	2
1.3 Road access to the site	2
1.4 Indicative Project development phasing	2
1.5 Planning and assessment process	5
1.6 Environmental impact assessment requirements	5
1.7 Community consultation considerations	6
<b>2. Assessment approach</b>	<b>7</b>
2.1 Methodology of assessment	7
2.2 Social indicators	8
2.2.1 Cumulative impacts	8
2.3 Determining impact significance	9
2.3.1 Likelihood	9
2.3.2 Potential consequence	9
2.4 Risk assessment matrix	10
<b>3. Strategic context</b>	<b>11</b>
3.1 Growing demand for freight infrastructure	11
3.2 Regional considerations	11
3.3 Local strategic considerations	12
<b>4. Profile of existing social conditions</b>	<b>15</b>
4.1 Description of area	15
4.1.1 Economic indicators	23
4.2 Social and community infrastructure snapshot	27
4.2.1 Health services	27
4.2.2 Recreational areas	27
4.2.3 Access to transport	27
4.2.4 Education	28

# Contents (Continued)

	<b>Page number</b>
4.3 Community functioning	29
4.3.1 Existing stakeholder perceptions of area	29
4.3.2 Community values, cohesion and relationships	29
4.3.3 Amenity	30
<b>5. Potential social impacts discussion</b>	<b>31</b>
5.1 Demographic and population changes	31
5.2 Social and community infrastructure	32
5.2.1 Traffic impacts	32
5.2.2 Housing and accommodation	35
5.2.3 Demand on education services	36
5.3 Community functioning	36
5.3.1 Local social infrastructure	36
5.3.2 Severance	36
5.3.3 Community stress and wellbeing	37
5.4 Construction amenity	37
5.5 Operational amenity	40
5.5.1 Air quality	40
5.5.2 Noise	40
5.5.3 Visual	42
5.6 Economic	43
5.6.1 Employment opportunities	43
5.6.2 Regional and State infrastructure benefits	44
<b>6. Assessment of social impacts</b>	<b>45</b>
<b>7. The Project and the SIMTA development</b>	<b>57</b>
7.1 Assessment assumptions	57
7.2 Cumulative Social Impacts	58
7.2.1 Impacts associated with the proposed SIMTA Project	58
7.2.2 Socio-economic	60
7.2.3 Amenity	60
7.2.4 Community health and wellbeing	62
7.3 Summary	62
<b>8. Conclusion</b>	<b>63</b>
<b>9. References</b>	<b>65</b>



## List of tables

		Page number
Table 1.1	EIS requirements addressed within this Technical Paper	5
Table 2.1	Social indicators	8
Table 2.2	Likelihood categories	9
Table 2.3	Levels and types of consequences	9
Table 2.4	Overall impact significance	10
Table 4.1	Selected demographic characteristics: wider study area	15
Table 4.2	Selected demographic characteristics: local area	17
Table 4.3	Median house prices by suburb	22
Table 5.1	Indicative daily construction and Full Build for IMEX terminal	31
Table 5.2	Predicted construction volumes	33
Table 5.3	Moorebank IMT staff traffic generation numbers	34
Table 5.4	Summary of outcomes of noise assessments during construction phases	39
Table 5.5	Predicted Noise Level – Neutral conditions	40
Table 5.6	Indicative daily construction workforce	43
Table 5.7	Indicative operation workforce	43
Table 6.1	Summary of the assessment of social impacts	46
Table 7.1	Summary of social and economic impacts for the proposed SIMTA Project	58

## List of figures

		Page number
Figure 1.1	Project Site and context	3
Figure 1.2	Project development phasing	4
Figure 4.1	Sensitive receivers and SEIFA	19
Figure 4.2	Population distribution	20
Figure 4.3	Families	21
Figure 4.4	Dwellings	24
Figure 4.5	Income and housing costs	25
Figure 4.6	Employment	26



# Glossary

Term	Definition
ABS	Australian Bureau of Statistics
CCD	Census collection district
DEC	Department of Environment and Conservation (now OEH)
DGRs	Director General's Requirements
DoD	Department of Defence
MIC	Moorebank Intermodal Company
EIS	Environmental Impact Statement
EP&A Act	NSW Environmental Planning and Assessment Act 1979
IMEX	Import and Export
IMT	Intermodal terminal
IRSD	Index of relative socio-economic disadvantage
LGA	Local Government Area
NEPM	National Environment Protection (Ambient Air Quality) Measure. National Environment Protection Measures are broad framework-setting statutory instruments defined under the ( <i>National Environment Protection Council (New South Wales) Act 1995</i> ). They outline agreed national objectives for protecting or managing particular aspects of the environment. NEPMs are similar to environmental protection policies and may consist of any combination of goals, standards, protocols, and guidelines.
NSW	New South Wales
OEH	Office of Environment and Heritage
PM <sub>10</sub>	Particulate matter less than or equal to 10 µm in aerodynamic diameter.
PM <sub>2.5</sub>	Particulate matter less than or equal to 2.5 µm in aerodynamic diameter.
SA1	Statistical Area (Level 1)
SEIFA	Socio-economic indexes for areas
SSD	State significant development
SSFL	South Sydney Freight Line
TEU	Twenty foot equivalent unit



# Executive summary

This report establishes a social baseline summary of the socio-economic profile; social infrastructure; existing community values, culture and behaviour; and the key community perceptions of the suburbs and local and regional communities impacted by proposed Moorebank Intermodal Terminal (The Project).

The social impact assessment focuses on the potential impacts and benefits to the surrounding local community and southwest region of Sydney. The Project is to be located at Moorebank within the Liverpool Local Government Area (LGA). This LGA is one of Sydney's largest and fastest growing areas. The Liverpool City Council planning report (2011), *Growing Liverpool 2021*<sup>1</sup>, indicates that over the next 25 years there will be up to 45,000 additional homes accommodating approximately 140,000 new residents.

A key outcome of The Project would be to improve productivity through improved freight network capacity and rail utilisation whilst also attracting employment and investment to south-west Sydney and therefore creating socio-economic benefits for the local and regional area. However, there is further development to be undertaken by the proponent, Moorebank Intermodal Company (MIC) to ensure these benefits can be realised and the potential negative impacts are mitigated. Mitigation measures would need to be implemented to avoid any adverse impact to the demographic profile; social and community infrastructure; lifestyle and amenity; community function; economic and the potential cumulative social impacts with the SIMTA proposal.

The key social impacts and benefits identified and discussed in this report include:

- community stress impacts caused by the current level of opposition and the perception that the project may contribute to the deterioration of the quality of life, amenity and community functioning;
- construction activity impacts to local amenity including increases and changes in traffic, potential traffic congestion along Moorebank Avenue, construction noise, visual impacts, potential air emissions and dust impacts;
- operational noise impacts to sensitive residential receptors in Casula, Wattle Grove and parts of Glenfield that require mitigation and further assessment to comply with noise criteria;
- changes to the visual landscape of the area and visual impacts for all surrounding residential areas and highly valued community facilities such as the Casula Powerhouse Arts Centre, Georges River Parklands, Leacock Park and Georges River recreational areas;
- creation of employment opportunities including around 1,247 jobs during construction and 2,174 long term positions during full operation;
- creation of existing supplier business benefits in southwest Sydney within the broad range of industries that would service the construction, operations and its staff, including construction suppliers to retail, financial services, food outlets and health services;
- regional and state infrastructure benefits including connectivity to Port Botany by rail, connections to major regional and interstate roads and highways via the M5 and M7 Motorways; and
- cumulative impacts affecting local amenity particularly traffic, noise and visual when assessed with the Sydney Intermodal Terminal Alliance (SIMTA) development.

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<sup>1</sup> Liverpool City Council (2013) *Growing Liverpool 2023*. The 10-year plan to move Liverpool forward



It is anticipated that many of the potential adverse social impacts can be mitigated to have a minimal impact on the local community. Measures and strategies would also need to be developed to ensure that the local benefits such as job creation can be realised in southwest Sydney.

This report recommends that ongoing consultation and communication of the actual project impacts occurs with the local community, business and local government throughout the Project's development, particularly during the next detailed design phase. This will ensure construction and operational planning optimises opportunities and minimises disruption. It will help the Project integrate within the community and become an economic asset for southwest Sydney. The detailed design process will further confirm impacts and allow for the development and implementation of mitigation strategies for impacted communities. It is also recommended that social impacts are continually assessed and monitored as the project progresses.

# 1. Introduction

## 1.1 The Moorebank Intermodal Terminal Project

The Moorebank Intermodal Terminal (IMT) Project (the Project) involves the development of approximately 220 hectares (ha) of land at the Project site (refer to Figure 1.1) for the construction and operation of an IMT and associated infrastructure, facilities and warehousing. The Project includes a rail link connecting the Project site to the Southern Sydney Freight Line (SSFL) and road entry and exit points from Moorebank Avenue.

The primary function of the IMT is to be a transfer point in the logistics chain for shipping containers and to handle both international Import and Export (IMEX) cargo, and domestic interstate and intrastate (regional) cargo. The key aims of the Project are to increase Sydney's rail freight mode share including: promoting the movement of container freight by rail between Port Botany and western and south-western Sydney; and reducing road freight on Sydney's congested road network.

The Project proponent is Moorebank Intermodal Company (MIC), a Government Business Enterprise set up to facilitate the development of the Project.

The Project site is currently largely occupied by the Department of Defence's (Defence) School of Military Engineering (SME). Under the approved Moorebank Units Relocation (MUR) Project, the SME is planned to be relocated to Holsworthy Barracks by mid-2015, which would enable the construction of the Project to commence.

The key features/components of the Project comprise:

- *an IMEX freight terminal* – designed to handle up to 1.05 million TEU per annum (525,000 TEU inbound and 525,000 TEU outbound) of IMEX containerised freight to service 'port shuttle' train services between Port Botany and the Project;
- *an Interstate freight terminal* – designed to handle up to 500,000 TEU per annum (250,000 TEU inbound and 250,000 TEU outbound) of interstate containerised freight to service freight trains travelling to and from regional and interstate destinations;
- *warehousing facilities* – with capacity for up to 300,000 square metres (m<sup>2</sup>) of warehousing to provide an interface between the IMT and commercial users of the facilities such as freight forwarders, logistics facilities and retail distribution centres; and
- The proposal concept described in the main EIS (refer Chapters 7 and 8) provides an indicative layout and operational concept for the Project, while retaining flexibility for future developers and operators of the Project. The proposal concept is indicative only and subject to further refinement during detailed design.

## 1.2 Rail access options and layouts

The Project is intended to connect to the SSFL, which was commissioned in January 2013 within the Main South Railway Line corridor. The SSFL connects Port Botany to west and south-western Sydney, and would provide a direct route for freight trains from Port Botany to the Project site.

Three separate rail access options are included as part of the proposal concept as detailed in the main EIS document, as shown in Figure 1.1. These options comprise:

- *northern rail access option* — with rail access from the north-western corner of the IMT site, passing through the former Casula Powerhouse Golf Course (which is currently owned by Liverpool City Council (LCC)) and crossing the Georges River and floodplain;
- *central rail access option* — with rail access from the centre of the western boundary of the IMT site, passing through Commonwealth land on the western bank of the Georges River (referred to as the 'hourglass land'); and
- *southern rail access option* — rail access from the south-western corner of the IMT site, passing through the Glenfield Landfill site (owned by Glenfield Waste Services) and crossing the Georges River and floodplain.

In order to maintain flexibility for future developers and operators of the Project, the proposal concept, as presented in the EIS, provides three indicative IMT internal layouts; one for each of three proposed rail access options. Once the selected developer/operator has been appointed, the Project would progress to the detailed design phase and one of the three rail access options identified above would be selected.

## 1.3 Road access to the site

Freight trucks would access the Project site from Moorebank Avenue, via the M5 Motorway. Trucks would then access the M7 Motorway and Hume Highway by the M5 Motorway. An upgrade to Moorebank Avenue would be included as part of the first phase of Project development (Phase A) to enable safe and efficient access to the Project site.

## 1.4 Indicative Project development phasing

The Project is proposed to be phased (staged) in its development, as summarised in Figure 1.2. The proposed indicative phasing includes both construction and operational phases, which are likely to overlap at certain times. For the purposes of assessment of the Project, five project development phases have been identified and detailed in the EIS. These are indicative only, but illustrate the type of construction and operation activities that would occur over time at the Project site.

The Project would likely commence in 2015 with the Early Works development phase and would progress with concurrent construction and operation through to the Project Full Build Phase (operation of full IMEX terminal, warehousing and interstate terminal) by approximately 2030.

The development phasing is proposed in line with the forecast market demand for processing of containers through the Project.

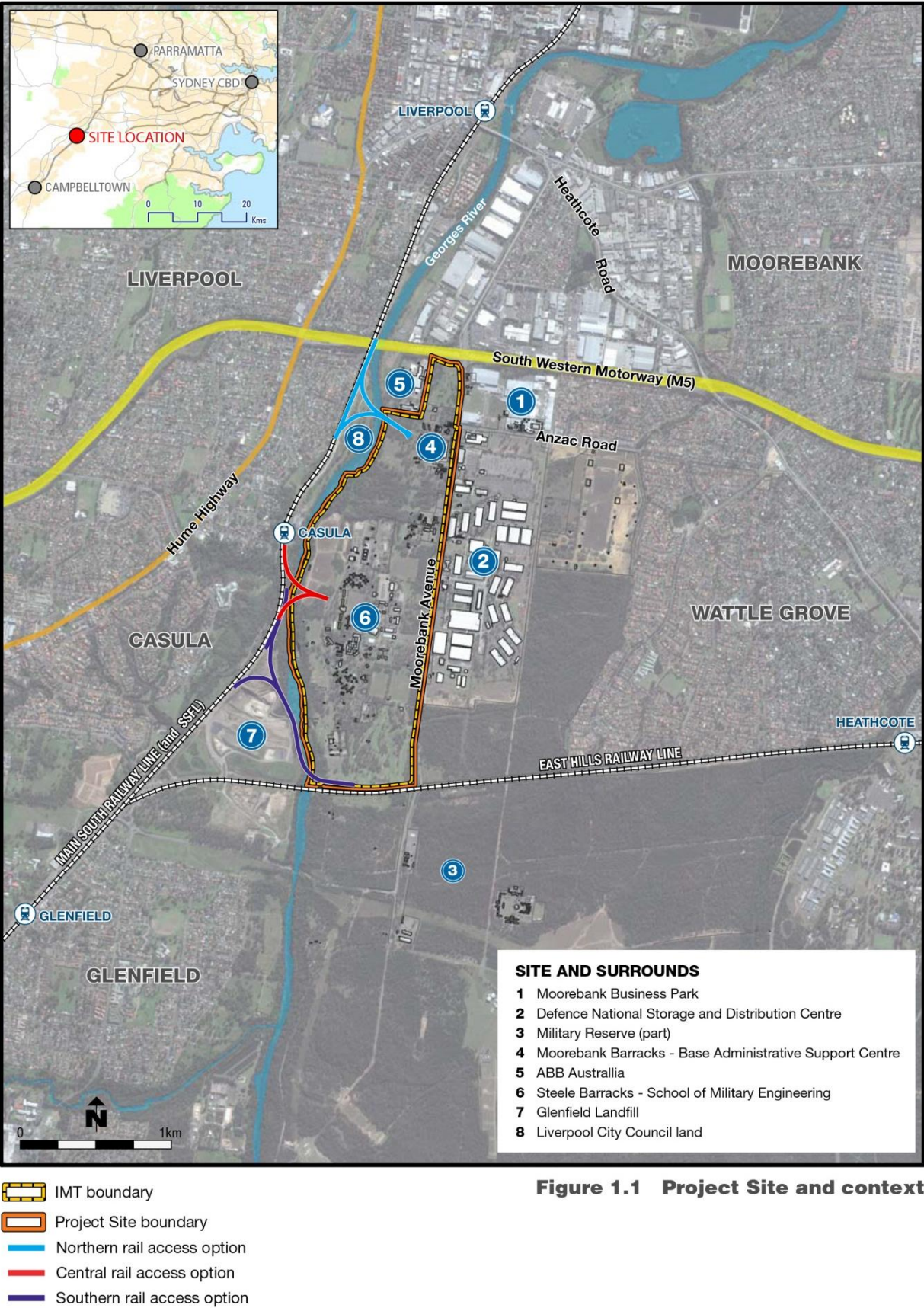
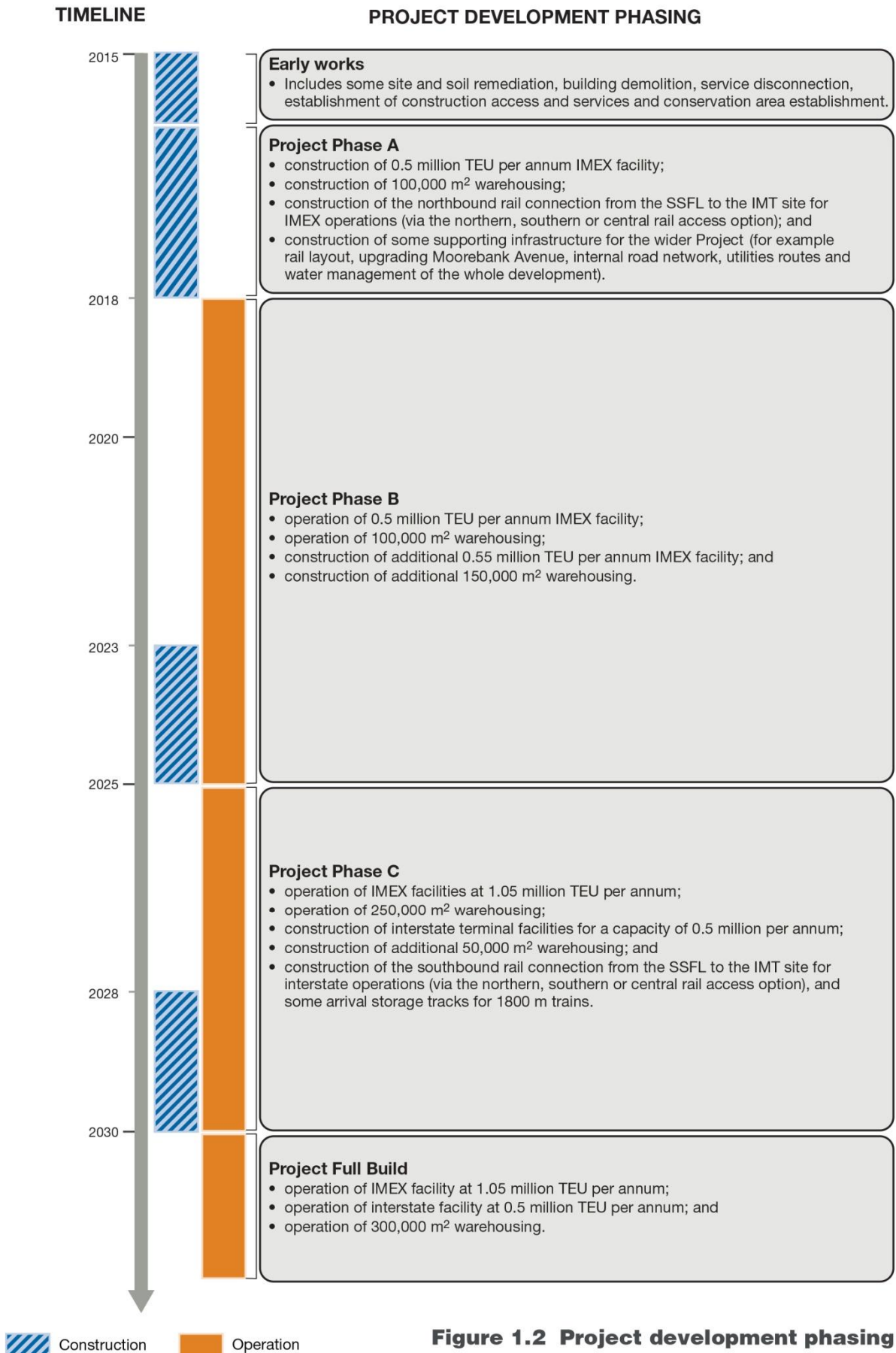


Figure 1.1 Project Site and context





**Figure 1.2 Project development phasing**



## 1.5 Planning and assessment process

The Project is subject to both Commonwealth and NSW State Government approvals, and an Environmental Impact Statement (EIS) has been prepared to support applications for both approvals (EPBC number 2011/6086 and SSD-5066). The Project is a 'controlled action' under the (Commonwealth) *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Therefore, MIC is seeking approval for the construction and operation of the Project from the (Commonwealth) Department of the Environment (DoE) under Part 9 of the EPBC Act.

Under the (NSW) *Environmental Planning and Assessment Act 1979* (EP&A Act), MIC is seeking a staged development approval for the Project as State significant development (SSD). At this stage, MIC is seeking Stage 1 SSD approval for the proposal concept (as described in the EIS) from NSW Planning and Infrastructure (NSW P&I) under Part 4, Division 4.1 of the EP&A Act (hereafter referred to as the Stage 1 SSD approval). The Stage 1 SSD approval application also includes a package of 'early works' that comprises remediation, clean-up and demolition or relocation of existing buildings, and establishment of a conservation area. The EIS is seeking approval for these early works without the need for any further approvals. Subject to Stage 1 SSD approval being received, the Project (with the exclusion of the early works) will be subject to further development applications and environmental assessment under the EP&A Act (hereafter referred to as the Stage 2 SSD development approvals).

Therefore, this Technical Paper and the EIS assess the impacts of the Project to a concept level, but with more detailed assessment of matters protected under the EPBC Act. Both construction and operation phase impacts have been assessed and are presented. Further details of the Project will be the subject of future environmental impact assessments to be conducted in detail at that time.

## 1.6 Environmental impact assessment requirements

This Technical Paper has been prepared by Parsons Brinckerhoff to address environmental impact assessment requirements of both the Commonwealth Government under the EPBC Act (the 'Final EIS Guidelines'); and the NSW Government under the EP&A Act.

Specifically this Technical Paper addresses the requirements outlined in Table 1.1 below.

**Table 1.1 EIS requirements addressed within this Technical Paper**

Requirement	Where addressed in the technical paper
<b>EPBC Act – Final EIS Guidelines</b>	
The EIS should provide the broad social and economic impacts (positive or negative) of the proposal. As a minimum, this information should include the justified levels of direct and indirect employment for each stage of construction and operation and the net capital value of the project.	Sections 4 and 5
Descriptions of the existing environmental values, including social, historical, cultural and recreational values, of the site which may be affected by the proposal.	Section 3
<b>NSW EP&amp;A Act</b>	
NSW EP&A Act 1979 (Division 4) Section 79c requires consideration of the 'likely impacts of that development, including environmental impacts on both the natural and built environments and social and economic impacts in the locality'.	Sections 4 and 5

## 1.7 Community consultation considerations

This social impact assessment has reviewed the community consultation undertaken by MIC as part of the planning, development and environmental assessment phase. The consultation process has identified a high level of community concern and perception that the proposed transport intermodal development may impact negatively on community health and wellbeing.

This social impact assessment assesses impacts to community functioning and considers the relevant perceptions raised by the community including:

- a community sense of deterioration of the overall quality of life including increasing trucks and creation of further traffic issues (access, congestion); amenity concerns including visual, noise and air quality;
- perceptions about the potential impacts to community wellbeing and lifestyle including safety;
- potential impacts to community assets and social infrastructure such as recreational areas, parklands, the Casula Powerhouse Arts Centre and Georges River parklands, hospitals, schools and employment areas; and
- potential cumulative impacts from other developments including the SIMTA intermodal proposal.

For further information on the consultation outcomes, a summary of stakeholder and community issues is presented in EIS Chapter 5 – *Stakeholder and community consultation*.

## 2. Assessment approach

This technical report discussed the potential social changes and impacts that are likely to occur as result of the Project based on an understanding of the local community, the outcomes of technical assessments and the consultation undertaken by MIC with stakeholders and the community.

It includes:

- a description of the methodology and assessment approach;
- a summary of the existing social and cultural environment including the region, the local area and the specific communities in close proximity to the Project;
- identification and discussion of the potential impacts (both adverse and beneficial) associated with the Project based on the existing socio-economic baseline and community and stakeholder engagement;
- assessment of the Project against social indicators identified for this project including (but not limited to) changes to existing amenity and wellbeing, impacts to social infrastructure and potential cumulative impacts of future major development proposals; and
- proposed strategies to avoid, minimise and mitigate any adverse impacts on the social values of the local and regional communities while optimising benefits.

### 2.1 Methodology of assessment

This assessment establishes a baseline summary of the situation prior to the initiation of the Project. A number of qualitative and quantitative sources are used to assess the impacts the Project may cause to the social and economic environment. The predicted impacts are evaluated to determine their magnitude and whether they are beneficial or adverse.

This social impact assessment was carried out using the following sources of information:

- statistical information from a range of sources including the Australian Bureau of Statistics (ABS) 2006 and 2011 Census data, however there were some minor limitations in comparative information due to the changes in state suburb areas between 2006 and 2011;
- social services providers and council websites including Liverpool City Council, Campbelltown City Council, South Western Sydney Local Health District and Western Sydney Regional Organisation of Councils;
- review of local and state government stakeholder activities and the outcomes of the community and landowner engagement activities undertaken for this project. Further information on the consultation process and key issues raised is outlined in Chapter 5 of the EIS;
- review of the technical studies prepared as part of the EIS; and
- site visit and observations of the local area (including observations on types of housing stock, local commercial centres, local services, community centres and public open spaces).

## 2.2 Social indicators

A social baseline study including examination of community attitudes and perceptions of the existing situation has guided the determination of key social indicators to identify the possible impacts and assess the level of impact of the Project. These indicators are summarised in Table 2.1.

**Table 2.1 Social indicators**

Criteria	Indicators
Demographic	<ul style="list-style-type: none"> <li>■ population and demographic profile changes during construction development phasing and operation</li> </ul>
Social Infrastructure	<ul style="list-style-type: none"> <li>■ impacts to existing infrastructure and essential services. For this project key issues include roads and public transport</li> <li>■ impacts to health and medical services such as hospitals, doctors and dentists</li> <li>■ impacts to access and availability to social infrastructure such as (but not limited to), education and emergency services</li> <li>■ housing and accommodation availability and affordability</li> <li>■ impacts to places or objects of significant community value such as (but not limited to), public parks and recreation, places of worship, community gathering places, retail and business hubs</li> </ul>
Community functioning (Health, wellbeing, behaviour and perceptions)	<ul style="list-style-type: none"> <li>■ amenity and lifestyle (e.g. health, noise, visual and air quality)</li> <li>■ impacts to community values, culture, health and wellbeing</li> <li>■ disruption of the project to access (transport and traffic) and connectivity</li> <li>■ community cohesion and relationships</li> <li>■ community severance</li> </ul>
Economic	<ul style="list-style-type: none"> <li>■ local, regional and State economic benefits and impacts</li> <li>■ employment and business changes</li> <li>■ property values and housing affordability</li> <li>■ community development</li> <li>■ socio-economic equity of benefits</li> </ul>

### 2.2.1 Cumulative impacts

The social environment is typically subject to cumulative effects both from aspects of the project acting in combination and from cumulative effects from other developments acting in combination. For this project consideration has been given to the SIMTA proposal to also develop an IMT facility on the site currently occupied by the Defence National Storage Distribution Centre (DNSDC) on Moorebank Avenue to the east of the Proposal. THE DNSDC is currently being relocated to a new site west of the existing site. It is expected that this relocation will be completed in early 2015.

## 2.3 Determining impact significance

The process for determining impacts is an important factor as it allows this assessment to focus on the key issues and ensure that any mitigations or enhancements are appropriate. To determine the significance, the likelihood of the impact occurring and then the degree of the consequence were measured against the existing socio-economic environment.

### 2.3.1 Likelihood

Likelihood is defined as the chance of an impact or opportunity occurring. The likelihood of socio-economic impacts is estimated using the following categories in Table 2.2.

**Table 2.2 Likelihood categories**

Likelihood categories	Guidance	
Almost Certain	A	Is expected to occur in most circumstances
Likely	B	Could occur in most circumstances
Possible	C	Has occurred here or elsewhere
Unlikely	D	Hasn't occurred yet but could
Remote	E	Very unlikely, may occur in exceptional circumstances

### 2.3.2 Potential consequence

The potential consequence selected for each social impact/opportunity is defined as the most likely or plausible consequence expected to occur considering the effectiveness of the control measures. It must be noted that these measures consider potential actual impact, which is different to perceived impact, likely to be felt by the community. The levels and types of consequences have been considered for the Project (Table 2.3).

**Table 2.3 Levels and types of consequences**

Consequence categories	Rating	Social consequence
Critical	V	Effect that either affects the well-being of a group of many people within a widespread area or continues beyond the Project life and is effectively permanent requiring considerable intervention to return to the socio-economic baseline. Serious or sustained public/local interest or concern. Reputation and/or relationships impacted with majority of the key stakeholders.
Major	IV	Effect that will affect the well-being of a group of people beyond the site boundary into the regional area, or continues beyond the life of the Project so that that the socio-economic baseline is re-established with considerable intervention. Major public/local interest or concern. Reputation and/or relationships impacted with a significant number stakeholder.
Moderate	III	Effect that will affect the well-being of a group of people beyond the site boundary into local study area, or continues beyond the life of the Project so that that the socioeconomic baseline is re-established with some intervention. Significant public/local interest or concern. Reputation and/or relationships impacted with some stakeholders.



Consequence categories	Rating	Social consequence
Minor	II	Effect that will affect the well-being of a small number people or which occurs exceptionally, mostly within the site boundary and does not extend beyond the life of the Project, so that the socio-economic baseline returns naturally or with limited intervention within a few months. Minor public/local interest or concern. Reputation and/or relationships impacted with a small number of stakeholders.
Negligible	I	Effect that will affect the well-being of a very small number people or which occurs very exceptionally, mostly within the site boundary and does not extend beyond the life of the Project, so that the socio-economic baseline returns naturally or with limited intervention in the short-term. Little or no public interest.

Source: Adapted from the Procedure Risk Management Framework and Guidelines (Central Queensland University, 2012) and UK Department of Energy and Climate Change (DECC) Severn Tidal Power SEA - Communities Topic Paper April 2010, prepared by Parsons Brinckerhoff.

## 2.4 Risk assessment matrix

Once the likelihood and consequence of each of the potential social impacts and opportunities were determined, the level of overall significance was determined using the matrix outlined in Table 2.4 below.

**Table 2.4 Overall impact significance**

Likelihood		Consequence				
		Negligible	Minor	Moderate	Major	Critical
		I	II	III	IV	V
Almost certain	A	Low	Moderate	High	Major	Major
Likely	B	Negligible	Moderate	Moderate	High	Major
Possible	C	Negligible	Low	Moderate	Moderate	High
Unlikely	D	Negligible	Negligible	Low	Low	Moderate
Remote	E	Negligible	Negligible	Negligible	Negligible	Low

## 3. Strategic context

This section provides a summary of the strategic context of the Project including a summary of the demand for freight infrastructure and regional strategies. This section also discusses local level strategies for the Liverpool and Campbelltown LGA to understand the future directions and aspirations of the location of the Project to determine what impacts and benefits this project contributes.

### 3.1 Growing demand for freight infrastructure

Strategic planning in the freight sector is placing renewed emphasis on interstate rail transportation. It is anticipated that in coming years, demand for interstate freight will continue to grow strongly, requiring additional IMT facilities at key points of the freight network. Sydney's need for additional IMT capacity in the interstate freight market is being driven by:

- growth in freight volumes - Interstate freight is expected to grow at 3.6% per annum between 2011/12 and 2029/30;
- improve the competitiveness of the rail network – historically the share of freight moved by rail has decreased largely due to improvements in highways and truck productivity;
- the Australian Government considers the establishment of a large IMT along the SSFL to be a key component to increase rail utilisation of the interstate rail network;
- limited IMT capacity - the current interstate IMT network has small and out-dated terminals. Additional IMT capacity would be required to enable Sydney to cope with continuing growth in container freight volumes, and to fully utilise its investment in port and rail infrastructure; and
- environmental and social impacts of continuing to use road freight – road freight produces higher externality costs (social and environmental costs) on a per tonne basis relative to rail and sea. An additional interstate IMT would help to alleviate some of the negative environmental and social impacts associated with interstate road freight transport.

### 3.2 Regional considerations

The strategic context for the Moorebank IMT is provided by several planning documents for NSW. The NSW Government's Metropolitan Plan for 2036 (NSW Government, 2010)<sup>2</sup> states a need for protection and enhancement of employment lands in metropolitan Sydney, while the South West Subregional Strategy (draft) provides further detail, describing a need to double employment opportunities in the Liverpool region by 2031 (Department of Planning, 2007)<sup>3</sup>. Liverpool currently provides about 15,500 jobs and has an employment capacity target of 30,000, while population increases in the Local Government Area (LGA) have not been matched with employment growth (Department of Planning, 2007).

In addition, the NSW Long Term Transport Master Plan describes a lack of intermodal infrastructure in the Sydney metropolitan area. Intermodals currently operating in Sydney include those located at: Cooks River, Yennora, Leightonfield, Minto, Enfield and Chullora. The Transport Master Plan indicates that 85% of imported containers are delivered to destinations within 45 kilometres of Port Botany, as such the Master Plan has identified a need to work with the Australian Government to develop the Moorebank IMT.

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<sup>2</sup> NSW Government (2010) Metropolitan Plan for Sydney 2036.

<sup>3</sup> Department of Planning (2007) Southwest Subregion: Draft Subregional Strategy.

The Australian Government has identified Moorebank as a suitable location for additional intermodal capacity in Sydney (subject to environmental/planning approvals) as the site has a number of advantages, including:

- next to the Southern Sydney Freight Line (SSFL), a dedicated freight rail line providing a direct link to the interstate freight network and, together with the MFN, a direct link to Port Botany;
- located near to the M5 and M7 Motorways and the Hume Highway;
- centrally located relative to major freight markets in western Sydney;
- adjacent to existing industrial areas;
- the site is large enough to establish highly efficient and fully integrated IMT capacity; and
- limited land of a suitable size remaining in south-western Sydney with easy access to road and rail infrastructure.

### 3.3 Local strategic considerations

The Project is located at Moorebank within the Liverpool Local Government Area (LGA) under the jurisdiction of the Liverpool City Council. This LGA area is one of the largest and fastest growing Council areas in metropolitan Sydney, covering 305 square kilometres and 42 suburbs. At the time of the 2011 ABS Census the LGA had a total population of 180,143 compared to 164,962 in the 2006 ABS Census. This represents a percentage increase of 8%, which has exceeded the Greater Sydney Region growth percentage of 6% and New South Wales at 5%. The most recent NSW Department of Planning and Infrastructure (DP&I) projections suggest a population of about 324,400 by 2036<sup>4</sup>, which is an anticipated increase in population of over 80%. This growth can be attributed to the NSW Government's South West Growth Centre strategy which extends over the Liverpool, Camden and Campbelltown LGAs. In total there are 17 precincts identified for future residential and commercial development and includes an estimated total of 110,000 new homes.

The Liverpool City Council planning report, *Growing Liverpool 2021*<sup>5</sup>, states that the key industries include manufacturing, retail, warehousing, transport and logistics and growing industries include medical, health and community, education, construction, property and business services. The NSW government has set a target of 31,000 jobs in Liverpool by 2031.

The vision for the Liverpool LGA as described by Liverpool City Council is to be a vibrant regional city of opportunity, prosperity and diversity. The key focus areas for Council to achieve this vision is to provide and plan for adequate services, facilities, resources and support to the community now and into the future, ensure that it is safe and clean, prevent harmful influences such as excessive noise and pollution.

While the Project is located entirely within Liverpool LGA, the suburb of Glenfield in Campbelltown LGA (under the jurisdiction of Campbelltown City Council) sits immediately to the south-west of the Project. Campbelltown LGA is also one of the 10 largest LGAs in NSW covering 33 suburbs (Campbelltown City Council 2014b). While the population of Campbelltown increased by 2.4% (from 142,383 in the 2006 Census to 146,300 in the 2011 Census), this growth has not been as significant as Liverpool LGA. The inclusion of Campbelltown LGA in the NSW Government's South West Growth Centre strategy, however, suggests its future will be one of strong growth. Recent NSW Government projections indicate the population will increase to 215,750 in 2031, which is a 47.5% increase over 20 years (Department of Planning & Environment 2014).

<sup>4</sup> NSW Department of Planning and Infrastructure, NSW SLA Population Projections, 2006–2036.

<sup>5</sup> Liverpool City Council (2011) *Growing Liverpool 2021*. The Community Strategic Plan for the City of Liverpool, endorsed on 18 April 2011.

The shared vision for the future of Campbelltown City Council is 'to be a city of choice and opportunity in a natural environment'. Pursuit of this vision is guided by six strategic directions: protecting and enhancing the City's key environmental assets, growing as a regional city, building a distinctive Campbelltown sense of place, getting around the city, building and maintaining quality infrastructure, and creating education, employment and entrepreneurial opportunities (Campbelltown City Council 2004). This vision and associated strategic directions underpin Campbelltown City Council's planning for the future, including the development of the recently released Draft Campbelltown Local Environmental Plan 2014 (Campbelltown City Council 2014a).

In relation to a local strategic context, the Project is near the South West Growth Centre which will have economic benefits to support the growth that is predicted. Support for the south-western Sydney economy would be expected through improved productivity; reduced operating costs; reduced costs associated with road damage, congestion and accidents; and better environmental outcomes. Furthermore development of the Moorebank IMT Project would create demand for both a construction workforce and would create new jobs during the operation of the project. Jobs created by the Project and its construction would be located at the IMT itself, as well as within the broad range of industries that would service the IMT construction, operations and its staff, including construction suppliers to retail, financial services, food outlets and health services.



## 4. Profile of existing social conditions

### 4.1 Description of area

As identified in section 2 of this report, the location of the Project (within the LGA of Liverpool, in the greater Sydney area), positions it within a socio-economic and demographic context, which reflects both state-wide trends and a strong local influence. In order to assess the impacts of the Project on the socioeconomic environment it is necessary to define the characteristics of that environment. To this end, a range of available baseline information sources were reviewed, to describe the existing environment from a State, City and LGA perspective.

#### Overview of demographic characteristics

The five yearly Australian Census of Population and Housing ('the census') conducted by the ABS collects a variety of social and demographic information for individuals and households in Australia. Table 4.1 reflects a selection of demographic characteristics captured in the 2011 census for New South Wales, Sydney and Liverpool LGA. The east coast of NSW is generally densely populated, with the greater Sydney area accounting for almost 4.4 million of the state's nearly 7 million residents in 2011. Sydney's popularity as a destination for both long and short-term migration is reflected in the relatively high percentage of 40.1% persons born overseas, a significant proportion of whom do not speak English at home. These numbers are reflected even higher in the Liverpool LGA, with 46.2% of the population born overseas and 55.6%. The proportion of young children (aged 0–4 years) in the study area population is higher than the average for Sydney indicating a high number of young families. This figure is even higher for some of the individual suburbs within the Liverpool LGA (see also Table 4.2).

**Table 4.1 Selected demographic characteristics: wider study area**

	State	City	LGA
Indicator	New South Wales	Sydney	Liverpool
Total Population	6 917 658	4 391 674	180 143
<i>Population 0–4 years</i>	6.6%	6.8%	7.8%
Indigenous	2.5%	1.2%	1.5%
Median Age	38	36	33
Born overseas	31.4%	40.1%	46.2%
Speak other language at home	27.5%	37.8%	55.6%
Median weekly household income	\$1,237	\$1,447	\$1,299
Married	50.0%	48.0%	53.2%
Single parent families	16.3%	15.7%	18.2%
Unemployment	5.9%	5.7%	7.0%
Home owned outright	33.2%	30.4%	24.1%
Home being purchased	33.4%	34.8%	41.9%
Home rented	30.1%	31.6%	30.4%



	State	City	LGA
Indicator	New South Wales	Sydney	Liverpool
Unoccupied private dwellings	9.7%	7.2%	4.2%
Median rent	\$300	\$351	\$295
Median mortgage repayments	\$1,993	\$2,167	\$2,167
Mortgage stress	10.5%	12.0%	16.7%

Source: ABS Census 2011

Within the Liverpool LGA, the suburbs of Moorebank, Wattle Grove, Casula, Glenfield, Liverpool and Lurnea are adjacent to the proposed site and contain residential populations, which may be affected by the construction and/or operation of the Project. The suburb of Holsworthy is also adjacent, but within Holsworthy there are no residential areas near the site. There is a distance of approximately 200 metres between the site boundary and any residential areas, although the SSFL is considerably closer (within 25-50 metres) to residences along much of its length.

Table 4.2 summarises the selected socio-demographic variables within the suburbs adjacent to the proposed Moorebank IMT and the Liverpool LGA. The total population of the Liverpool LGA has increased by 9.5% between 2006 and 2011, and the increase in the study area suburbs has generally been higher except in Moorebank which is unchanged.

As well as the data generated by discrete census questions, the ABS also compiles a series of indices which attempt to quantify the socio-economic status of small areas relative to each other. These are known as the Socio-Economic Indexes for Areas (SEIFA). In particular, the Index of Relative Socio-Economic Disadvantage (IRSD) incorporates attributes such as low income, low educational status, high unemployment and other variables which reflect disadvantage. A low score on this indicates a high proportion of relatively disadvantaged people in an area (Pink 2013). It is important to note, that a low IRSD score does not reflect the socio-economic status of individuals or households and is usually used as indicator to determine where future development, investments and support is required.

The average SEIFA IRSD scores for the Liverpool LGA and the suburbs surrounding the actual are presented in Table 4.2, which indicates that Wattle Grove is the least disadvantaged while Lurnea is the most disadvantaged suburb. Figure 4.1 shows that this is generally true at the small area level, with the SDAs in Wattle Grove in particular all having high SEIFA scores. There is, however, more variation within the collector areas within Lurnea, indicating that this is not necessarily a homogenous population with only 2 out of the 21 collector areas for this suburb achieving the lowest score range of 323–636. The same is true of the other suburbs directly adjacent to the Project site which have moderate to high SEIFA scores, indicating that these neighbourhoods are generally less disadvantaged than the average. Refer to Figure 4.1.

Liverpool (suburb) and Lurnea have more indicators of disadvantage which are reflected in their lower (more disadvantaged) SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) scores, while Wattle Grove, in particular, has a significantly higher median income and is comparatively less disadvantaged. These indicators are explored in more detail in the following sections.

**Table 4.2 Selected demographic characteristics: local area**

	LGA	Suburb					
Indicator	Liverpool	Moorebank	Wattle Grove	Casula	Glenfield	Liverpool	Lurnea
SEIFA IRSD 2011	951	1,020	1,091	985	1,004	848	848
<i>SEIFA Ranking NSW Out of 2563 State Suburbs</i>	<i>51 out of 153 LGAs</i>	1,479	2,312	999	1,250	118	117
<b>Population characteristics</b>							
Population (total count)	180,143	7,595	8,192	14,696	7,558	24,095	8,610
Population 0–4 years (% of total population)	7.8%	8.4%	8.7%	7.9%	6.6%	8.6%	8.7%
Population 5–19 years (% of total population)	23.3%	19.5%	25.1%	22.1%	19.7%	18.7%	23.8%
Population 20–64 years (% of total population)	59.8%	59.3%	61.0%	59.6%	59.8%	61.6%	55.1%
Population 65 years and over (% of total population)	9.2%	12.8%	5.2%	10.3%	13.9%	11.1%	12.3%
Population change 2006 – 2011 (% change)	+9.4%	-0.1%	+19.2%	+11.3%	+11.8%	+13.0%	+15.4%
Males (% of total population)	49.6%	50.1%	49.5%	48.8%	48.2%	49.3%	49.1%
Median Age (years of age)	33	35	31	34	36	33	32
Aboriginal and Torres Strait Islander (% of total population)	1.5%	0.8%	1.6%	1.0%	1.5%	1.1%	3.0%
<b>Cultural and language diversity</b>							
Born overseas (% of total population)	39.8%	29.4%	28.8%	39.9%	40.5%	56.6%	38.3%
Speak other language at home (% of total population)	49.8%	34.3%	27.8%	49.7%	41.0%	66.0%	52.0%
<b>Family composition</b>							
Registered marriage (% of total population 15 years and over)	52.9%	55.3%	60.2%	54.3%	50.3%	50.2%	47.5%
Couple families with children <15 (% of total families)	37.9%	33.8%	47.7%	36.9%	32.3%	34.7%	44.8%
One parent families with children <15 (% of total families)	9.3%	6.9%	6.0%	7.5%	8.6%	11.3%	13.2%
All one parent families (% of total families)	18.2%	15.9%	11.2%	16.6%	17.3%	22.0%	22.3%

	LGA	Suburb					
Indicator	Liverpool	Moorebank	Wattle Grove	Casula	Glenfield	Liverpool	Lurnea
<b>Dwelling structure</b>							
Separate houses (% of total private dwellings)	72.1%	83.4%	93.8%	70.4%	60.5%	33.9%	74.7%
Semi-detached houses (% of total private dwellings)	11.4%	8.5%	2.5%	21.6%	30.6%	12.0%	19.0%
Flats, units, or apartments (% of total private dwellings)	12.1%	3.1%	0.0%	4.8%	1.9%	48.3%	2.5%
Other dwellings (% of total private dwellings)	0.2%	0.1%	0.0%	0.1%	0.0%	0.2%	0.0%
Unoccupied private dwellings (% of total private dwellings)	4.2%	4.8%	3.6%	3.1%	7.0%	5.3%	3.8%
<b>Tenure and landlord characteristics</b>							
Home owned outright (% of total occupied private dwellings)	24.1%	34.0%	21.0%	26.5%	27.2%	19.7%	26.9%
Home being purchased (% of total occupied private dwellings)	41.79	44.2%	47.1%	42.3%	44.9%	25.5%	32.5%
Home rented (% of total occupied private dwellings)	30.4%	19.4%	30.5%	26.0%	24.1%	50.3%	36.5%
Median weekly rent (\$/week)	\$295	\$350	\$280	\$340	\$290	\$280	\$263
Median monthly mortgage repayments (\$/month)	\$2,169	\$2,300	\$2,200	\$2,167	\$1,965	\$1,600	\$1,733
<b>Income and employment</b>							
Median total household income (\$/week)	\$1,299	\$1,434	\$2,034	\$1,366	\$1,394	\$922	\$883
Unemployed (% of total labour force)	7.0%	4.7%	4.0%	7.0%	6.8%	10.5%	11.3%

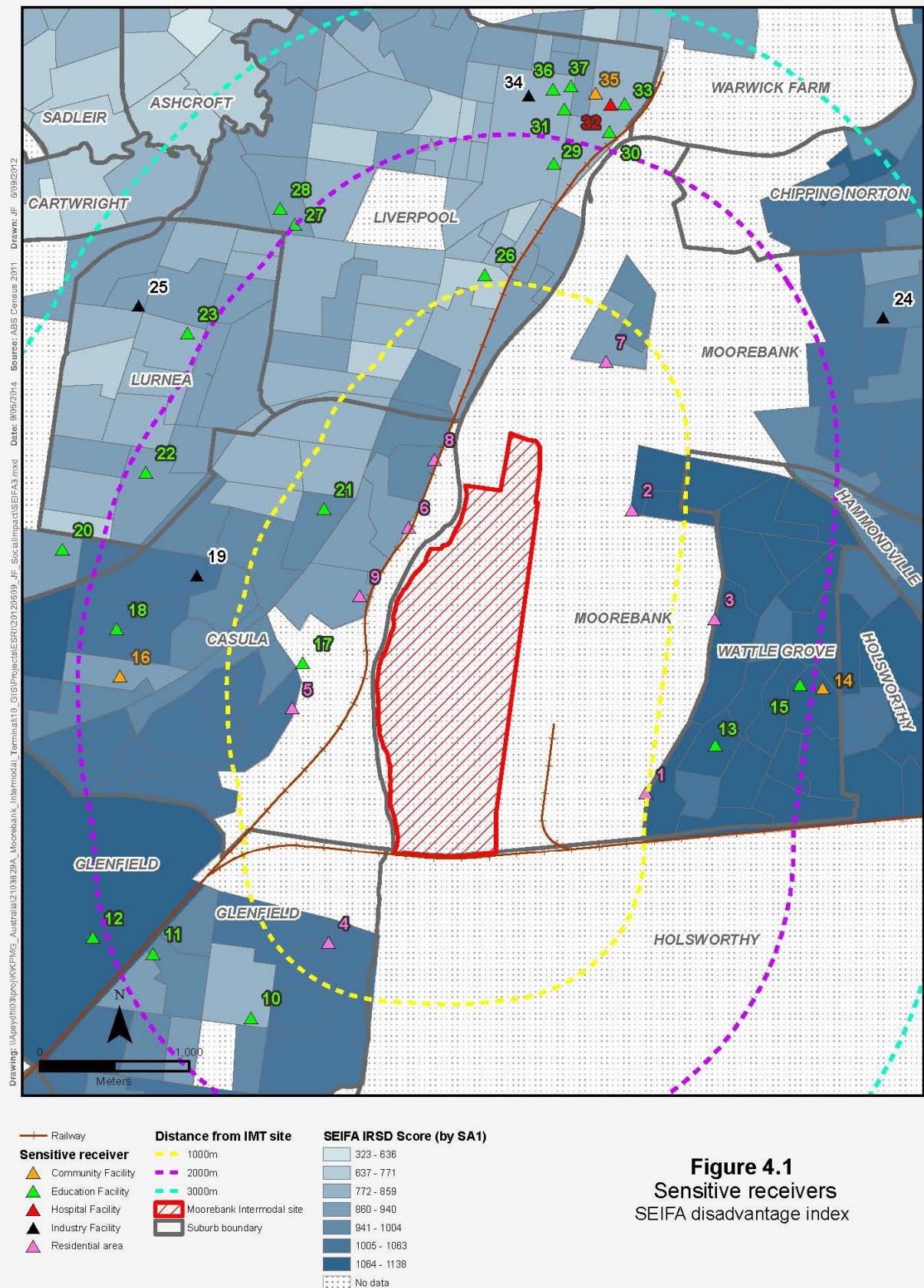
Source: ABS Census Liverpool (LGA14900) (2011 and 2006); Moorebank (SSC11590) (2011), Moorebank (SSC 11675) (2006); Wattle Grove (SSC12440) (2011), Wattle Grove (SSC 12019) (2006); Casula (SSC10493) (2011), Casula (SSC 11203) (2006); Glenfield (SSC10964) (2011), Glenfield (SSC 11411) (2006); Liverpool (SSC11390) (2011), Liverpool (SSC 11603) (2006); Lurnea (SSC11426) (2011), Lurnea (SSC 11613) (2006)

ABS Census 2011 (SEIFA IRSD) and 2011

A review of publically available information was also undertaken to identify potentially sensitive community receptors, such as health care centres, schools etc. The distribution of identified sensitive receiver sites is illustrated on Figure 4.1, and the majority of these are located in areas of Liverpool, Lurnea and Casula with moderate to low SEIFA disadvantage scores. Of the 37 receptors identified, 10 are located within 1 kilometre of the site boundary. Eight of these represent residential areas, with two schools located over 500 metres away. A further 11 sites, predominantly schools, are located between one kilometre and two kilometres from the site with the remaining 16 sites – a mixture of schools, health and community facilities – located between two kilometres and three kilometres from the boundary.

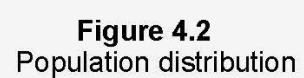
Figure 4.1 illustrates the variation in key social statistics throughout the study region. These statistics are presented by Statistical Area – Level 1 (SA1) boundaries – the smallest geographical unit for which 2011 census data is released.



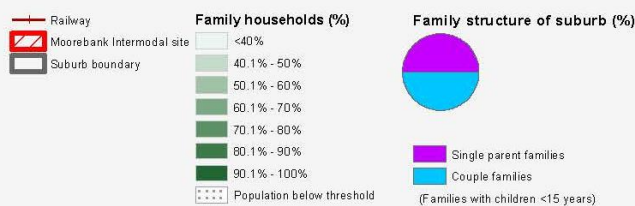
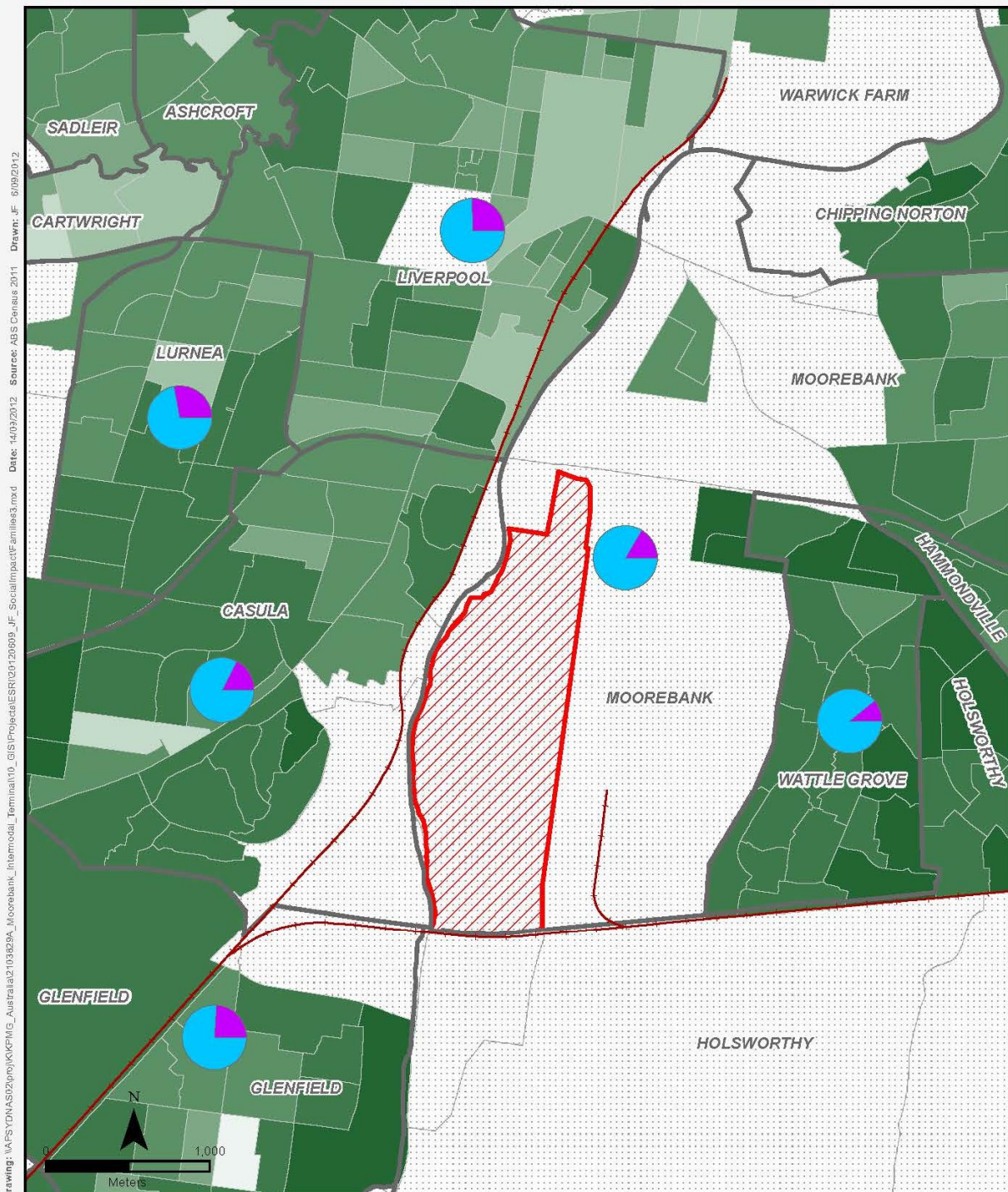


**Figure 4.1**  
Sensitive receivers  
SEIFA disadvantage index









**Figure 4.3**  
**Families**



There is a wide variation in the population density of the SA1s in the study area although those immediately surrounding the Moorebank IMT site are generally lower than the average. The age distribution within each suburb is uniform, with people of working age (20–64 years) making up the bulk of each population. Wattle Grove is notable for a higher proportion of children and correspondingly lower proportion of older people, while Liverpool also has a very high proportion of young children (0–4 years). Males make up a higher percentage of the population in Moorebank 50.1%, but proportions range between 48.2% and 49.6% in the remaining suburbs.

Family households make up a high proportion of all households in many of the study area SA1s particularly in the eastern areas of Wattle Grove and Moorebank and the western areas of Casula, but there is variation throughout the study area. Liverpool and northern Lurnea in particular have small pockets where the percentage of families with children is moderately high, but also a number of SA1s where households with children make up less than 50%. Of the households with children less than 15 years of age, the suburbs of Wattle Grove and Lurnea have the highest proportion of single parent families. Many of these live in the high population density SA1s previously identified in Liverpool. Glenfield and Moorebank have the lowest proportion of single parent families.

The dwelling density of the densely populated areas of Liverpool is correspondingly high, and this is reflected in the very high proportion of flats/units/apartments recorded in this suburb (Figure 4.4). The remainder of the study area suburbs have more moderate dwelling densities composed of predominantly detached dwelling stock, ranging from almost 100% in Wattle Grove to 68% in Glenfield.

In the last quarter of 2013, Sydney had the most expensive housing in the country, with the median house price at AU\$633,200 Sydney saw the biggest annual increase in 2013 from a year earlier, with house prices rising by 14.3% (Global Property Guide 2014). Table 4.3 provides a review of median house prices in the surrounding suburbs from 2009, prior to first communications about the Project, and the median house prices for each year until the current median house prices for 2014. The data for 2014 is based on six months as opposed to 12 months, however comparatively during this time period, median house prices for each suburb have increased with the exception of Wattle Grove, which has stayed the same from 2013 to 2014. The suburbs of Liverpool and Lurnea had the least expensive housing prices while Wattle Grove, Moorebank and Casula were the most expensive suburbs in which to purchase a home (Pricerfinder, 2014). These statistics are reflected in the median mortgage and rental payments for each suburb (Table 4. 3 and Figure 4.5). These trends in increasing housing prices can be attributed to a number of factors including higher housing demand to meet population growth, strong overseas migrations and record low mortgage interest rates (Global Property Guide 2014).

**Table 4.3 Median house prices by suburb**

	Suburb					
Median house prices	Moorebank	Wattle Grove	Casula	Glenfield	Liverpool	Lurnea
2009 <sup>1</sup>	\$325,000	\$410,750	\$365,000	\$352,180	\$265,000	\$322,000
2010 <sup>2</sup>	\$334,000	\$465,000	\$393,750	\$375,000	\$300,000	\$333,500
2011 <sup>3</sup>	\$387,500	\$465,000	\$410,000	\$365,000	\$310,000	\$355,000
2012 <sup>4</sup>	\$347,000	\$485,000	\$421,500	\$315,000	\$305,000	\$365,000
2013 <sup>5</sup>	\$405,000	\$528,750	\$465,000	\$335,000	\$332,250	\$410,500
2014 <sup>6</sup>	\$502,500	\$578,500	\$480,000	\$456,500	\$338,000	\$415,000

Source: PriceFinder ([www.pricerfinder.com.au](http://www.pricerfinder.com.au))

(1) January 2009 – December 2009;

(2) January 2010 – December 2010;

(3) January 2011 – December 2011;

(4) January 2012 – December 2012;

(5) January 2013 – December 2013

(6) January 2014 – June 2014

Overall, the social profile of the study area is one where families with young children dominate and the majority of the sensitive receivers are consequently schools. However, these families live within an area which exhibits a variety of socio-economic conditions and associated housing types, ranging from the high incomes, two-parent families and more expensive houses of Wattle Grove to the variation in incomes, family types and dwelling choices seen in areas of the Liverpool LGA.

### 4.1.1 Economic indicators

#### Employment

The 2011 Census shows that 74563 people living in the Liverpool LGA were employed of which 68% worked fulltime and 28% worked part time. Economic data from the 2011 census indicate that, in the Liverpool LGA, the percentage of unemployed people at 7.0% was significantly higher than the national average of 5.6% (Table 4.2). Within the study area, unemployment is higher in the north-western SA1s but is generally below the national average in Moorebank and Wattle Grove (Table 4.3, Figure 4.6).

The most common occupation groups reported in the Liverpool LGA are Clerical and Administrative Workers (17.5%), Technicians and Trades Workers (15.7%), Professionals (15.4%) and Labourers (10.5%). The percentage of people in these occupations is slightly higher than the national average for all categories except Professionals, which is significantly lower than the national figure of 21.3%. Moorebank and Wattle Grove have a higher proportion of Professionals while Labourers and Machinery Operators and Drivers make up a high proportion of occupations reported in Liverpool and Lurnea (Figure 4.6).

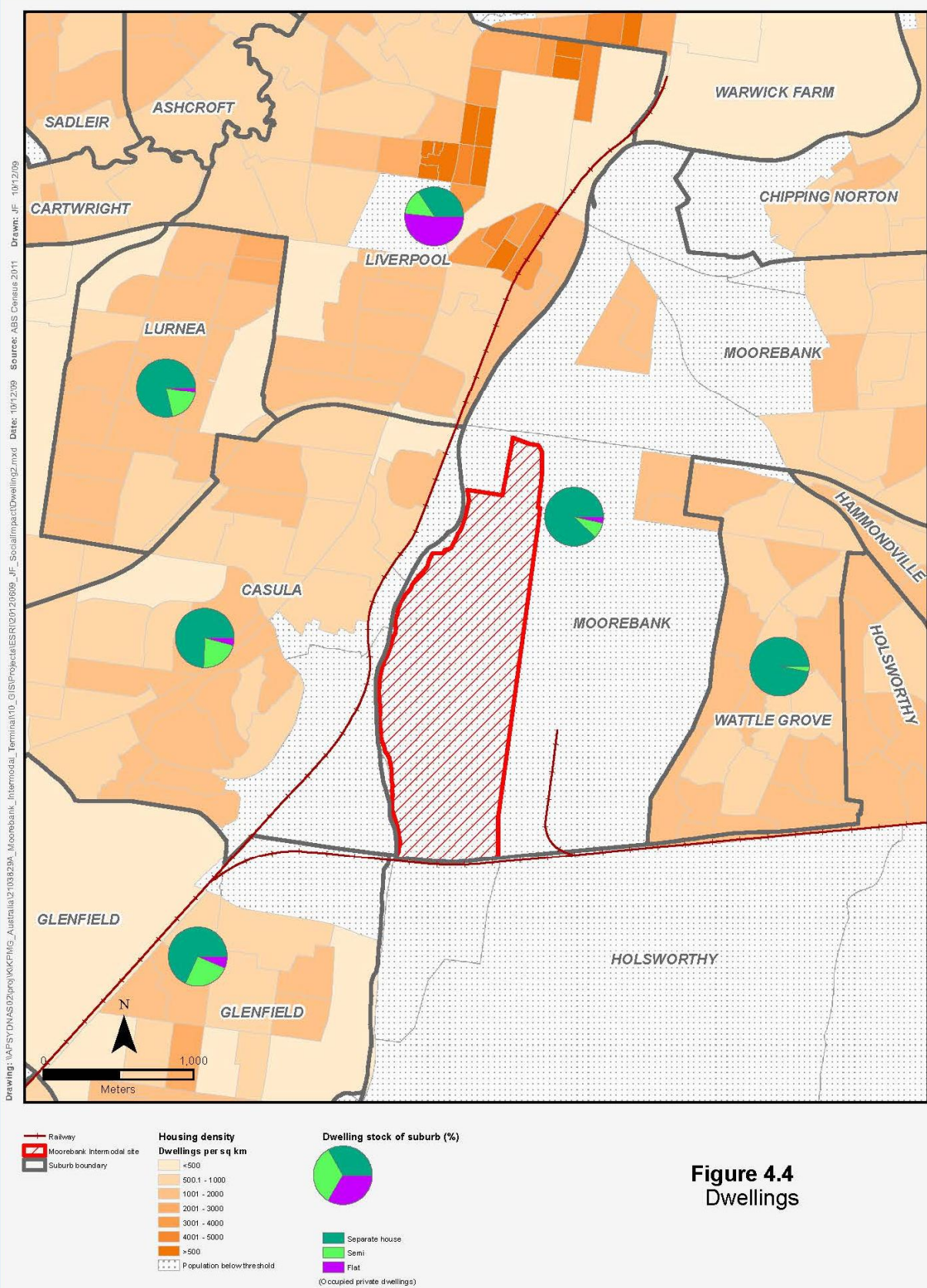
#### Industry

Liverpool City's Gross Regional Product was \$7,940m as of the 30 June 2013. This is the amount of wealth that contributes to Australia's wealth, which is generated by businesses, organisation and individuals working in the area. (economy.id 2014). The three most popular industry sectors are Manufacturing (14%), Retail Trade (10.4%) and Health Care and Social Assistance (10.1%).

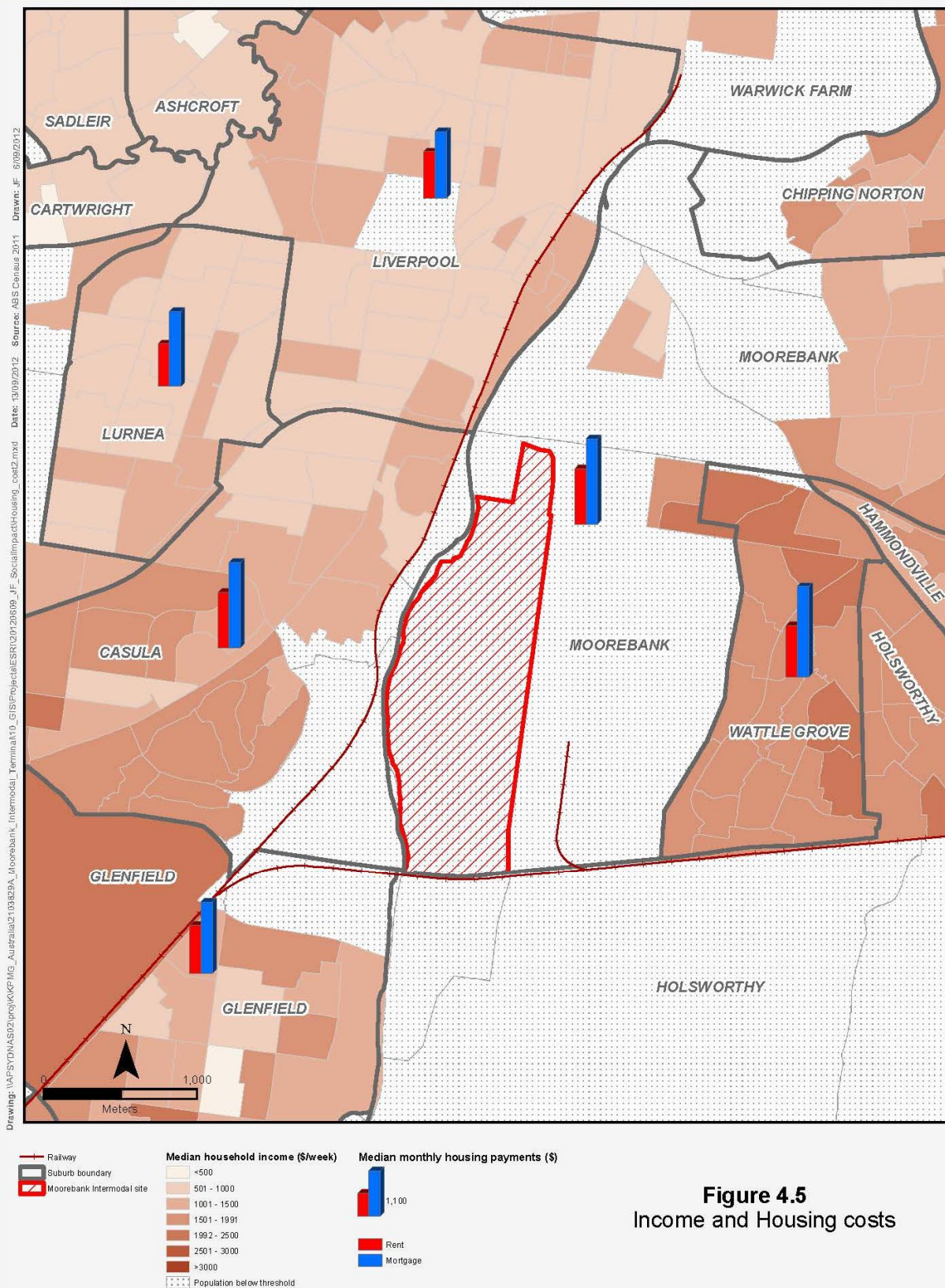
Moorebank mainly comprises industrial land uses, including light industry, manufacturing and warehousing. A survey of local businesses in the study area showed that the following types and number of businesses are located in Wattle Grove, Casula and Glenfield:

- takeaway shops/restaurants/cafés (10)
- property and business services (2)
- health and community services (7)
- post office (1)
- newsagency and convenience stores (2)
- local bulky goods and other industrial businesses operating in the Moorebank Business Park.

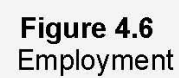
The top industries of employment in the Liverpool LGA are School Education (3.8%) and Cafes, Restaurants and Takeaway Food Services (3.6%), both slightly below the national average, followed by Road Freight Transport (3.2%) at almost double the national average.











## 4.2 Social and community infrastructure snapshot

### 4.2.1 Health services

The study area lies in the north-eastern corner of the South Western Sydney Local Health District. This district manages six acute public hospitals, of which one, Liverpool General Hospital, is located in the north of the study area. Other services within the district include community health centres offering a range of prevention, palliative and rehabilitation services while oral, drug and mental health services can be accessed at various facilities (South Western Sydney Local Health District, 2012). There are four major community health services located within the Liverpool LGA, including one in Moorebank and one in Liverpool, but the remainder are in the north-west of the LGA and not near the study site.

### 4.2.2 Recreational areas

#### Parks and public space

The Liverpool City Council maintains over 250 parks with varying facilities ranging for BBQs to sporting fields, and in many cases these are connected by a network of walkways and cycleways. The Georges River runs along the western boundary of the Project site and includes a corridor of parks/recreation land along much of its length. Leacock Regional Park is west of the site with walking tracks along the banks of the Georges River. There are some large recreation areas including Kelso Park and Chauvel Park in and around the suburb of Moorebank while there are also corridors of open space parks following the paths of smaller waterways such as Brickmakers Creek through Casula and Liverpool. The Whitlam Leisure Centre in Liverpool services the surrounding community with a gym, aquatic facilities as well as a sports stadium.

#### The Casula Powerhouse Arts Centre

The Casula Powerhouse Arts Centre is located adjacent Georges River in Casula and is approximately 60 metres from the Project site boundary. The building was originally a power station that was built in the 1950s during post-WWII. It opened in 1994 and has an international standard exhibition space, a 326-seat theatre space, retail outlet, café, weaving garden, production studios, artist's residency studios and new office spaces (Liverpool City Council 2014).

#### Churches

Two churches have been identified as possible sensitive receptors due to their potential to have a sight line to the Project. These include St Francis Xavier's Catholic Church located in Lurnea and Impact Church located in Liverpool. Both churches located north of the M5 Motorway.

### 4.2.3 Access to transport

Liverpool City Council, in its *Growing Liverpool 2012* report, acknowledges that Liverpool is a car dependent city with more households owning two or more vehicles than in Sydney generally. Residents make an average 3.4 car trips per person on any given weekday. Local roads surrounding the Moorebank IMT site include Moorebank Avenue, Anzac Road, Bapaume Road and Cambridge Avenue. The nearby major roads in the area include the Hume Highway, the M5 South Western Motorway and the Westlink M7 Motorway.



Liverpool Station is the closest train station to the site (3.5 km by road) and is a major transport interchange in the south-west region of Sydney which provides direct train services to the City via the Inner West Line, the South Line and the Bankstown Line, as well as services to Blacktown via the Cumberland Line. Other train stations located nearby include Holsworthy Station (located 4 km to the east of the site) on the East Hills Railway Line and Casula Station (located 4 km by road to the west of the Georges River) on the South and Cumberland Lines.

Moorebank Avenue, closest to the Project site, is currently serviced by only one bus route provided by Transdev (Route 901). The bus route operates between Liverpool and Holsworthy via Wattle Grove (using Anzac Road) with a single AM and PM diverted service which travels further south along Moorebank Avenue to Chatham Avenue. On a weekday, bus services operate between 05.00 and 21.30 at half hourly intervals during the AM and PM peaks. Hourly services run outside peak periods. Weekend and Public Holiday services are provided (07.00 to 19.00 Saturday, 08.30 to 19.00 Sunday and Public holidays). There are some pedestrian and cyclist facilities on Moorebank Avenue south of Anzac Road. Liverpool City Council has identified a number of proposed routes in the Bike Plan 2009. These routes may provide additional options for cyclists and improve the connection between the site, neighbouring destinations and suburbs, and the local train stations.

#### 4.2.4 Education

There are a total of 29 schools in the Liverpool LGA, comprising a mixture of primary; secondary; government; non-government; and special needs facilities. Access to tertiary education includes two TAFEs, one located in Liverpool and one in Macquarie Fields.

Several education receptors in the residential areas surrounding the site that may potentially have a line of sight to the Project and the three rail options include:

- Glenwood Public School, Glenfield
- Glenfield Public School, Glenfield
- Hurlstone Agricultural School, Glenfield
- Wattle Grove Public School, Wattle Grove
- St Marks Coptic College, Wattle Grove
- Casula High School, Casula
- All Saints Catholic College, Casula
- Casula Primary School, Casula
- Lurnea High School, Lurnea
- Liverpool West Public School, Liverpool
- Liverpool Public School/TAFE NSW
- Playground Learning Centre, Glenfield.

## 4.3 Community functioning

### 4.3.1 Existing stakeholder perceptions of area

The outcomes from consultation activities for the Project have provided a snapshot of local perceptions of Moorebank and the surrounding suburbs. Consultation with local community members indicated a strong attachment to their suburb and the local community.

The Growing Liverpool 2023 10-year plan describes the LGA as experience significant change and that this change will continue in the future. It has been identified as a regional city for South Western Sydney and plans are in place to further develop a high quality, attractive regional city with full range of business, government, retail, cultural, entertainment and recreational activities. The key community priorities include jobs that are closer to home, to maintain a strong community identity and image, to feel safe and secure, a clean and cared for city with attractive public streets and places, high quality open space and opportunities for walking and cycling, reliable and frequent public transport, less traffic and affordable parking, protection of the natural environment for future generations, a range of programs and services which are suitable for all groups and interests, mixed and affordable housing options so you can stay in Liverpool when your circumstance change and a harmonious City that respects the rich cultural diversity of our community.

Liverpool City Council has raised concern about the Project since it was first proposed in 2010. Council has raised key concerns about the potential impacts to the Casula Powerhouse Arts Centre and traffic impacts in relation to congestion and air quality emissions. Council has established the 'No Intermodal Committee' which encompasses this Project and the proposed SIMTA development, describing the Committee as having an independent chair and includes Councillors, community representatives as well as senior Council staff.

Details on all community consultation activities can be found in Chapter 5 of the EIS – *Stakeholder and Community Consultation*.

### 4.3.2 Community values, cohesion and relationships

The suburbs surrounding the Project vary in both demographic composition and community values. Liverpool City Council identifies itself as a multicultural area with many services and facilities provided to the local communities. The Project site is located in the suburb of Moorebank and adjacent to the suburbs of Wattle Grove, Casula, Glenfield, Liverpool and Lurnea. The values of each suburb can vary and these values can influence the issues or concerns in relation to the Project described by the community.

Liverpool City Council, in its *Growing Liverpool 2012* report, identifies social cohesion and social sustainability as coming from a strong sense of place. The report states that the community's values and aspirations come from history and culture. Cohesion does not mean uniformity but instead means embracing diversity. Liverpool is a city built on the floodplains of two large river systems, the Georges and Nepean Rivers, their creeks and other tributaries. The health of these river systems is socially important. Liverpool also has a long history of Aboriginal custodianship and of European settlement as well as the experience of recent waves of immigration represented by a range of ethnic groups. Collectively, these aspects of its history contributed to creating Liverpool's unique identity.

The Liverpool LGA has many community volunteers, youth networks, and sporting and action groups operating in the local area. Liverpool City Council sponsors a Youth Council and local police citizens youth club (PCYC); there are three local Rotary Clubs and one Lions Club located in the Liverpool area as well as active neighbourhood watch groups. Various charities operate within the Liverpool LGA including the Red Cross, Liverpool Seniors Network, the Inner Wheel, and St Vincent de Paul.

The most recent publication for the NSW Department of Family and Community Services (formerly the NSW Department of Housing) indicates that in 2008 there were approximately 5,518 social housing dwellings in the Liverpool LGA, with 4,938 public housing dwellings, 79 Aboriginal Housing Office properties and 501 community housing properties. A Census conducted by the Department in 2005 indicated that public housing represented 7.8% of all housing in Liverpool which is above the average of 4.8% for the Sydney Metropolitan area.

The Liverpool LGA 2011 crime statistics indicate a relatively stable rate of crime in the LGA over the 24 month period from January 2010 to December 2011. Crimes which have increased are motor vehicle related crimes (NSW Bureau of Crime Statistics and Research Liverpool LGA, 2011). The Liverpool City Council *Growing Liverpool 2012* report also indicates that crime rates in the Liverpool LGA have generally decreased or remained stable since 2004, although violence in the home is still higher in Liverpool than in other areas of Sydney.

### 4.3.3 Amenity

The adjacent suburbs to the Moorebank IMT, namely Wattle Grove, Casula, Glenfield and Lurnea, are mostly residential communities with low-density type housing. These suburbs have local parks, footpaths, schools and are generally amenable to households with children. The suburb of Liverpool has good access to local public transport including the train and local bus network.

## 5. Potential social impacts discussion

This section discusses the potential socio-economic impacts from the Project and associated infrastructure on the area of influence (communities of interest) and on the existing socio-economic environment. This section is structured to address the social indicators identified in Table 2.1.

### 5.1 Demographic and population changes

The Project is expected to generate a peak daily construction workforce of approximately 1080 full time equivalent (FTE) staff during Phase A and 1240 in Phase B (refer to Table 4.1 below). During operation (Full Build), the IMEX terminal would accommodate approximately 35 administrative staff, as well as 104 operational and 9 maintenance staff (per shift with three shifts per day). This equates to a total of approximately 374 on-site operational staff.

**Table 5.1 Indicative daily construction and Full Build for IMEX terminal**

Project Phase*	Year	Indicative typical daily workforce	Indicative peak daily workforce
Early works	2015–2018	150	300
Phase A	2015–2018	620	1146
Phase B	2018–2025	435	1236
Phase C	2025–2030	375	474
Full Build	2030	374	374

Source: Parsons Brinckerhoff (2014). \*Refer to figure 1-2 for more information about Project development phasing.

The population of the Liverpool LGA is 180,143 (ABS 2011). In peak construction (Phase A and B) represents a population increase of approximately 0.6% in Phase A to 0.68% in Phase B at peak workforce level. However, it is not expected that all construction workers will relocate to the area as a key strategy for the project will be attract a high portion of workers from the LGA and south-west Sydney. A portion of the construction workforce may also come from the wider Sydney metropolitan area. Therefore, any population increase is expected to be low and have a negligible impact on the community demographics, housing availability, community functioning or social infrastructure.

The breakdown of the on-site workforce type is anticipated to include 90% warehousing and IMT operations staff; which will comprise supervisors, manual handling/ loading/unloading labourers and some maintenance staff. The remaining 10% will likely be office or clerical duties. The breakdown of occupational skills in the Liverpool LGA correlate to the skills required. The most common occupation groups reported in the Liverpool LGA are Clerical and Administrative Workers (17.5%), Technicians and Trades Workers (15.7%), Professionals (15.4%) and Labourers (10.5%). Potentially the workforce can comprise both local and non-local employees. During construction there will be a requirement for specialist trades, engineers and project managers, as such it is expected that a majority of the workforce demand will be absorbed from the wider Sydney metropolitan area.

At full operation there will be approximately 374 full-time equivalent positions working on site in any 24 hour period. This represents 0.19% of the Liverpool LGA population. At Full Build, the warehousing precinct would accommodate approximately 22 administrative staff, as well as 248 operations and 248 maintenance staff (per shift with three shifts per day). This equates to a total of approximately 1,500 on-site operational staff.

As described above it is expected that a large proportion of workers will be from the Liverpool LGA or Sydney Metropolitan area. However, according to the 2010 South-West Growth strategy, developments such as the Moorebank IMT are predicted to facilitate some population and dwelling growth in the region. Therefore it is likely that a small percentage of the operational workforce will relocate to the region, however it is also anticipated that the workforce will come from the LGA or wider Sydney Metropolitan area.

## 5.2 Social and community infrastructure

### 5.2.1 Traffic impacts

The *Growing Liverpool 2023* report indicates that Liverpool is a car dependent city with more households owning two or more vehicles than in the Sydney metropolitan area generally. Residents make an average 3.4 trips per person on any given weekday. In 2011, 77% of people in Liverpool LGA using one method of transport drove to work in a car compared to 66% in the Greater Sydney. Just over 7% of people in the Liverpool LGA travelled to work using public transport compared to almost 14% in Greater Sydney. Most trips are undertaken in cars and few are undertaken by walking or public transport (ABS 2011).

Local traffic issues are a high priority for the local community and residents. There is an existing public perception that the Project may contribute adversely to the existing congestion problems experienced by motorists on the current road network, particularly on key motorways such as the M5.

The modelling undertaken suggests that without the Project, traffic congestion would get worse overtime as general traffic volumes grow if no upgrades were put in place. The Project includes plans for an upgrade to Moorebank Avenue which will improve the level of service at the intersections likely to be directly affected by the traffic from the operation of the Project.

In relation to the M5 Motorway, at full Build (2030), predicted percentage increase in traffic generated as a result of the Project is under 3% during the AM and PM peak hours. With such a minor percentage increase, the impact of the Project traffic on the operation of the M5 Motorway is expected to be negligible. (Refer to EIS Chapter 11 – *Traffic, transport and access* for further information).

The Project would facilitate the distribution of freight to western Sydney by transferring the origin from Port Botany to Moorebank. As a result, the change in freight related truck movements generated by the Project on the M5 would be minimal. These movements would be present on the road network originating from Port Botany if the Project was not developed.

#### 5.2.1.1 Construction traffic number predictions

Construction vehicle movements would be via the local and regional road network. It has been assumed that access to the project would largely be via the M5 Motorway and Moorebank Avenue. Table 5.2 provide indicative maximum daily volumes for construction. The following assumptions were used to derive vehicle movements associated with construction workers access the site:

- construction hours were 7.00 am to 6.00 pm Monday to Friday, 8.00 am to 3.00 pm Saturday with no work to be scheduled on either Sundays or public holidays;

- 90% of the construction workforce would drive to the Project site. Of these:
  - ▶ 80% would arrive before the morning peak hour and leave after the afternoon peak hour; and
  - ▶ the remaining 20% would arrive and leave during the morning and afternoon peak hours; and
- 50% of the construction workforce would leave the site and return in the middle of the day and that each construction worker would generate three light vehicle trips a day on average.

**Table 5.2 Predicted construction volumes**

Scenario	Daily vehicle movements		Peak hourly vehicle movements	
	Cars	HV	Cars	HV
1 Early works (2015)	810	64	54	10
2 Phase A (2016)	2906	1930	194	210
3 Phase B (2023)	3337	1944	222	212
4. Phase C (2028)	1280	394	85	42

Source: Technical report 1 – *Traffic, Transport and Accessibility Impact Assessment* (Volume 3)

The impacts on local traffic will vary with each construction and operational stage. During the peak construction (Phases A and B) construction traffic will be at its greatest. There may be delays to local traffic in Wattle Grove on Moorebank Avenue due to the upgrade works initiation and then also from construction related traffic associated with heavy vehicles movements to and from the site. These impacts will be temporary and will end once the upgrade works are completed. There could also be local traffic congestion in Casula during Phase A when the rail bridge is constructed on the western side of the Georges River. Construction Management Plans will be developed for each phase to address potential traffic impacts.

### 5.2.1.2 Rail bridge construction

The operation of the Project and movement of Project-related freight trains would not impact the public passenger train system, as freight and passenger trains would operate on separate rail lines.

During the construction of the rail bridge over Georges River, it is likely that a series of construction works would be undertaken from the west side of the River in the vicinity of residences in Casula. During this time, residences may experience potential traffic and access impacts such as congestion from the movement of heavy vehicles and construction machinery.

The rail bridge option location is yet to be determined however it is anticipated that there would be impacts to passenger rail services during construction. However traffic management planning would need to take into consideration traffic movements and access to the Casula Power House Arts Centre, the parklands and access to other nearby public areas, particularly on Power House Road. Other potential construction haulage routes during the rail bridge connection works identified include Charles Street, Mill Road, Speed Street and Shepherd Street. These localised impacts may increase travel congestion and make local travel times increase, however traffic management planning is anticipated to address congestion issues and minimise any impacts. Further assessment would need to take place during detailed design and approvals.



### 5.2.1.3 Operational traffic predictions

At Full build, the 2014 Traffic assessment for the Project estimated traffic generations of staff numbers. Refer to Table 5.3 below.

**Table 5.3 Moorebank IMT staff traffic generation numbers**

Staff type	IMEX terminal	Interstate terminal	Warehouse	Total traffic generation numbers daily
Administrative	35	35	22	92
Operations (by shift – 3 shifts/day)	104	78	496	1160
Maintenance (by shift – 3 shifts/day)	9	7		48
Total				1182

Source: Table 4.6, Technical Paper 1 – *Traffic, Transport and Accessibility Impact Assessment* (Volume 3)

Calculations for traffic generated by staff vehicles were based on the following assumptions:

- shift hours were:
  - ▶ Administration – 8.30 am to 5.00 pm; and
  - ▶ Operations and maintenance – 6.00 am to 2.00 pm; 2.00 pm to 10.00 pm; and 10.00 pm to 6.00 am
- 90% of staff for both the IMEX and Interstate terminals drive to site. The remaining 10% carpool, catch public transport or walk/cycle to the terminal
- all staff would arrive just prior to the start of their shift and depart directly after the shift
- traffic generated by the Interstate terminal staff would commence from 2030
- traffic generated by IMEX terminal and Warehouse staff in the intermediate years of operation would be based on the proportion of operations active at that time.

Based on these assumptions, the administrative staff would be the only light vehicle generator during both the AM (6.45 am to 7.45 am) and PM (5.00 pm to 6.00 pm) peak hours on the road network. The maximum traffic generation period from staff would be during the shift change over of the operation and maintenance staff. From year 2030 onwards, this shift change over would generate 625 vehicle trips. However this is likely to occur outside the peak periods (6.00 am, 2.00 pm and 10.00 pm).

### 5.2.1.4 Vehicle operations and access

The traffic generated by the Project would comprise both light and heavy vehicles. Heavy vehicles would be a combination of rigid and articulated (single and double trailer) container haulage trucks, delivery trucks and maintenance trucks; light vehicles would generally comprise vehicles for administration and operation staff.

Trucks travelling to and from the Project site would access the IMT from Moorebank Avenue via the M5 Motorway. Road access to the Project site to and from Moorebank Avenue would be at the main IMT access gate, and there would be a separate access for light vehicles. Heavy vehicle management, including use of the main IMT access gate and a trouble truck parking area, is described in EIS Chapter 11 – *Traffic, transport and access*. These provisions would avoid the need for any heavy vehicle parking on Moorebank Avenue.

Redevelopment of Moorebank Avenue is proposed as part of the Project and will address any concerns regarding traffic safety and congestion. This would include road widening and treatments at key intersections. Refer to Chapter 11 of the EIS for details.

#### 5.2.1.5 Operational train movements

One of the main outcomes of the Project would be the transfer of road haulage between Port Botany and Western Sydney to rail freight for redistribution.

Based on demand modelling provided in *Moorebank Intermodal Terminal Calculation of Daily Truck Generation* (Deloitte 26 May 2014), the IMEX facility has been designed to have capacity to process approximately 1.05 million twenty-foot equivalent unit (TEU) containers a year, split between imports and exports. As a result of this demand, IMEX would generate approximately 137 trains (or 273 train movements) per week.

### 5.2.2 Housing and accommodation

There are a variety of housing and accommodation options within the Liverpool LGA, including separate dwellings, semi-detached dwellings and more high-density accommodation options. The level of unoccupied private dwellings is 4.2% for the Liverpool LGA.

It is not anticipated that there will be an adverse impacts to existing housing and accommodation in the Liverpool LGA during Early Works, Phase A and Phase B due to the small number of construction workforce expected to relocate to the area. If there was a small increase in population, the suburb of Liverpool has a rental accommodation market of over 50%, providing opportunities for local accommodation.

Western Sydney Regional Organisation of Councils report on health services in Western Sydney outlines that compared to the remainder of the Sydney metropolitan area, access to health care facilities is lower in Western Sydney and the area has higher ratios of populations to General Practitioners and hospital beds (WSROC, 2012). This identifies a trend of existing over utilised health care facilities.

Liverpool Hospital is located approximately in Elizabeth Street, north of the M5 and is close to the Project site. It has a capacity of 855 beds, 23 operating rooms and 60 critical care beds, diagnostic and imaging services, emergency and trauma care, maternity, paediatric, cancer care, mental health, ambulatory care, allied health and medical and surgical services from birth to aged care. Some concerns have been raised about the potential traffic related impacts to the Liverpool Hospital, however traffic modelling indicates that travel impacts would be negligible to Elizabeth Street as access to the Moorebank IMT is predicted to be from the South Western Motorway via the M5 Motorway to Moorebank Avenue.

The workforce population increase during all stages of the Project could result in a potential greater demand on the health facilities and services being used in the Liverpool LGA and greater southwest Sydney region.

Due to the size of the site and the nature of the Project, there may impacts on availability of emergency services including the fire brigade and ambulance service. The closest fire station to the Moorebank IMT is located on Anzac Road in Moorebank and closest ambulance station is on Forbes Street in Liverpool.

### 5.2.3 Demand on education services

The location of the Project in established suburbs of Sydney provides for many choices of educational facilities in the region, including primary, secondary and tertiary facilities for any persons relocating to the local area to be closer to the Project site.

There are a total of 29 schools in the Liverpool LGA, comprising a mixture of primary; secondary; government; non-government and special needs facilities. It is anticipated that a low number of families will relocate to the local area due to the Project and therefore the overall impact on demands on these facilities will be relatively low. Any increases in demand for local educational facilities are likely to be minimal and able to be absorbed by these facilities.

There is a TAFE located in Liverpool; however this does not offer any building or construction courses, the most relevant course for employment at the Moorebank IMT. The closest TAFE with relevant courses is located in Macquarie Fields, approximately seven kilometres from the Moorebank IMT or Miller, and approximately 8 kilometres from the Moorebank IMT. The Project may create some opportunities for the local TAFE and training providers to offer these services locally.

## 5.3 Community functioning

### 5.3.1 Local social infrastructure

Some local public and recreational infrastructure that is highly valued has been considered in this assessment. The key areas of community concern include the Casula Power House Arts Centre and the Georges River and Casula Parklands. There are existing community perceptions that the Project could potentially impact on the enjoyment of the facility and the area through the construction period and also during operation from noise from the terminal, traffic increases, train increase.

Other social infrastructure in the area includes the Royal Engineers Golf Course located on the Project site; the NSW Barefoot Water Ski Club, which operates on the Georges River upstream of the Liverpool Weir to just north of the Project site. Leacock's Park in Casula which is a public space for the local community includes views overlooking the Project site.

### 5.3.2 Severance

Severance refers to perceived barrier or physical separation between people and places. There are no new severance impacts caused by the project however the location of the Central Rail Option has the potential to contribute to any existing severance that may be experienced at the Casula Powerhouse Arts Centre and parts of the Georges River recreational park. Both of these receptors are located within a natural barrier of the Georges River and the existing SSFL and direct access is severed from the nearest residential suburbs located on the western side of SSFL.

### 5.3.3 Community stress and wellbeing

Although it may not be representative of the entire community, there has been a significant level of community and local government opposition to the project with emotions such as anxiety, fear and stress expressed at public community forums and reported in the media.

The key concerns expressed are centred on the perceived health, amenity and lifestyle impacts. There is a community sense that the Project could contribute to the deterioration of the overall quality of life arising from increasing truck numbers in the area and exacerbation of traffic issues, amenity concerns including visual, noise and air quality. There is also sentiment within the community that the Project has been inequitably placed in the south-western suburbs, close to nearby suburbs which are perceived to be socially disadvantaged. Furthermore, nearby property owners and businesses are concerned about the direct impacts to property values and the prospect of financial burden.

It is anticipated that this level of stress will decrease overtime and as the project progresses in its design and environment assessment. Concerns are likely to lessen once it is recognised that the actual results of traffic, noise and air quality assessments will have an overall lower impact than what has been perceived.

Ongoing dialogue and engagement with the community in decision making aspects of the development is critical for building community understanding of the actual impacts rather than the perceived impacts. It is also recommended that the community are involved in impact management planning so they have the opportunity to influence the outcomes that impact them.

The Project has the potential to be an integral and beneficial part of the community, providing economic and community benefits to the area. The Project also has the potential to enhance the amenity to the area through investment to urban design, vegetation landscaping and engagement with the local community. Although, there will be visual changes to the existing area, there is opportunity through the urban design of Project to co-exist with the aspirations of the local community and the vision for future growth that will be experienced in the Liverpool Local Government Area over the next 20 years.

## 5.4 Construction amenity

The construction period for the project will be split into four phases:

- Early Works – remediation, demolition and establishment works between 2015 to 2016
- Phase A – construction between approximately 2015 to 2018
- Phase B – construction between approximately 2023 to 2030
- Phase C – construction between approximately 2028 to 2030.

### Traffic and accessibility

During these times there will be temporary increases in construction vehicle traffic on local roads to access the Moorebank IMT, as well as impacts on the local surrounding community in terms of noise, visual amenity and air quality.

Overall construction traffic volumes entering and exiting the Project Site will vary over the duration of the Project construction. Construction vehicle traffic is expected to be greatest during the main earthworks and civil construction (Phase A and Phase B) and access to the Project Site is likely to be via the M5 Motorway and Moorebank Avenue.

Some partial and full road closures may be required during construction. Where possible, these will occur at night during quieter traffic periods. Road closures will occur in consultation with the RMS and relevant local councils.

### Visual amenity

The local community can expect to see machinery movement onsite during Early Works and during Phases A, B and C. A range of measures will be put in place to ensure that construction works is kept clean and tidy and adequate fencing is provided. Site rehabilitation and landscaping as part of Early Works will help minimise impacts as the project progresses in each stage of construction.

### Air quality

During the Early Works phases of the project there is potential for local dust related air quality impacts to be generated through the demolition of structures, the handling and transportation of material. Given the magnitude of the earthworks and short-term nature of construction, the air quality impacts are considered negligible. During construction for Phases A, B and C the potential for air quality impacts would be associated with the generation of dust and emissions from the movement of on-site machinery, bulk earth works, material storage and traffic movement within the site. Construction machinery is expected to generate low levels of tailpipe exhaust emissions. The existing local air environment could experience temporary impacts however the short-term nature of the construction activities and the implementation of control measures are expected to effectively manage any particulate matter through a Dust Management Plan. For more information, please refer to Chapter 17 of the EIS.

### Noise and vibration

Noise can be defined as ‘unwanted sound’ and it can potentially have a negative impact to people’s wellbeing and residential amenity. Reaction to noise is a subjective response which varies between individuals and depends very strongly on previous experience and expectations.

The Noise Assessment undertaken for the project investigated the impacts on noise sensitive receptors in the nearby suburbs of Casula, Wattle Grove, North Glenfield and Liverpool. These included residences, schools, places of worship and recreation areas and places. Refer to Chapter 12 – *Noise and vibration* in the EIS for a detailed list of receptors.

In summary, the noise assessment has found the majority of daytime construction noise levels generated during the all phases of development would meet the acceptable Noise Management Levels (NMLs) in accordance with the NSW EPA’s Interim Construction Noise Guideline 2009. However, at Casula, Wattle Grove and Glenfield predicted noise levels during piling and rail access construction works are above the NMLs at the nearest receptors and where similar noise levels are experienced during construction, would require implementation of reasonable and feasible noise mitigation during these construction activities (SLR Consulting, 2014).

A summary of noise and vibration impacts for each of the construction phases are described below in Table 5.4.

**Table 5.4 Summary of outcomes of noise assessments during construction phases**

Project phase	Potential noise and vibration impacts and mitigation
Early works (2015 to 2016)	<ul style="list-style-type: none"> <li>Noise levels at the nearest residential receptors in Casula, Wattle Grove and Glenfield comply with daytime Noise Management Levels (NMLs).</li> <li>No mitigation measures are required.</li> </ul>
Phase A (2015 to 2018)	<ul style="list-style-type: none"> <li>Noise from piling activities is predicted to be above the NMLs at Casula and trigger the implementation of mitigation measures where piling during the daytime is undertaken within 600 metres of residences.</li> <li>Predicted noise levels from all other construction activities within the main IMT site are within the NMLs.</li> <li>Rail construction activities no matter what option is selected would need to employ mitigation measures where high noise generating activities during the daytime are within 500 metres at Casula and Glenfield. Should rail construction activities be undertaken outstand the daytime period, noise mitigation would be required where works are within 1,400 metres of residences. Noise levels achieve NMLs at Wattle Grove during construction connection of any of the three rail options.</li> <li>Any potential vibration from activities will be within 40 and 450 m from the nearest receptors and therefore expected to be within safe distances that will have negligible impact to human comfort and it is unlikely to cause damage to nearby buildings.</li> </ul>
Phase B (2023-2030)	<ul style="list-style-type: none"> <li>Predicted noise levels from piling activities are above the NMLs at Casula and Glenfield. The requirement for mitigation measures would be triggered where piling works are undertaken within 600 metres of residences.</li> <li>Noise levels from all other construction activities are predicted to be within the NMLs at Casula, Wattle Grove and Glenfield.</li> <li>Construction equipment for the Phase B works would be operated at least 450 m from the nearest receptors; therefore no construction ground vibration disturbance or cosmetic damage impacts are expected.</li> </ul>
Phase C (2028 to 2030)	<ul style="list-style-type: none"> <li>Noise from piling activities is predicted to be above the NMLs at Casula and Wattle Grove, triggering the implementation of noise mitigation measures where piling during the daytime is undertaken within 600 metres of residences.</li> <li>Predicted noise levels from all other construction activities within the main IMT site are within the NMLs.</li> <li>Rail construction activities no matter what option is selected would need to employ mitigation measures where high noise generating activities during the daytime are within 500 metres at Casula and Glenfield. Should rail construction activities be undertaken outstand the daytime period, noise mitigation would be required where works are within 1,400 metres of residences. Noise levels achieve NMLs at Wattle Grove during construction connection of any of the three rail options.</li> <li>Any potential vibration from activities will be within 40 and 450 m from the nearest receptors and therefore expected to be within safe distances that will have negligible impact to human comfort and it is unlikely to cause damage to nearby buildings.</li> </ul>

Source: SLR Consulting 2014



## 5.5 Operational amenity

The hours of operation will be 24 hours seven days per week. Several considerations have been taken into consideration to reduce the potential operation amenity to local amenity.

### 5.5.1 Air quality

Issues raised by the community highlight air quality as one of the most important issues and areas of concern for local residents (refer to EIS Chapter 5 – *Stakeholder and community consultation*).

Incremental air pollutant concentrations and dust deposition rates associated with all modelled scenarios were predicted to be within NSW EPA criteria and National Environment Protection Measure (NEPM) advisory reporting goals at all surrounding receptor locations. Particulate Matter 2.5 (PM<sub>2.5</sub>) was identified as exceeding the annual average NEPM criteria at the Defence National Storage Distribution Centre in its current location; however this receiver is expected to be relocated by 2018.

Pollutants associated with combustion engines from heavy vehicles entering and exiting the site and plant machinery represent the greatest potential for air quality impacts during operation. The implementation of appropriate management practices would mitigate the potential for impacts at nearby sensitive receivers.

An air quality management plan (AQMP) for the operation of the Project would be prepared and would identify triggers and procedures for dealing with these conditions. The implementation of effective management practices would minimise the potential for impact. This includes measures and safeguards, such as motoring vehicles emissions and operation on site such as reducing idling times, implement cleaner fuels and engine technologies, strategic planning.

Refer to Chapter 17 – *Local air quality* of the EIS document for more detailed air quality information.

### 5.5.2 Noise

During operation, noise modelling of the Moorebank IMT has found that for each of the three concept rail options, further design and mitigation would be required to meet acceptable noise level at the nearest receptors. This includes investigating the use of enclosures, acoustic walls, barriers and earth mounding within the Project site. The reported exceedences during operation have been estimated to be up to 14 to 16 dB(A) (SLR Consulting, 2014).

For each rail access option conceptual layout, the predicted noise levels at the assessed residential receptors in each suburb are summarised in Tables 5.5 (neutral meteorological conditions).

**Table 5.5 Predicted Noise Level – Neutral conditions**

Receptor	Predicted Noise Levels, L <sub>Aeq</sub> dB(A)		
	Northern Rail Access	Central Rail Access	Southern Rail Access
Casula	30– <b>47</b>	31– <b>51</b>	29– <b>49</b>
Wattle Grove	33–38	32–39	32–39
Glenfield	32–35	31–34	29–32
Non-Residential Noise Sensitive Receptors	24–49	24–53	18–52

Note **Bold** highlight denotes predicted noise level exceeds the Project specific noise level criteria.

Source SLR Consulting Australia - Noise and Vibration Report 2014 (Table 38)

### Northern rail option noise exceedances

The northern rail option shows that predicted noise levels exceed day and night noise criteria and impacts at residential receptors of Lakewood Crescent, St Andrews Boulevard, Buckland Road, Dunmore Road in Casula. Night time noise limits are exceeded at Leacocks Lane receptors in Casula. At Wattle Gove, noise exceeds the night-time criteria by 1dB(A) at Anzac Road.

### Central rail option residential impacts

At Casula, the central rail option exceeds day and night noise criteria at St Andrews Boulevard, Buckland Road, Dunmore Road, Leacocks Lane and Slessor Road with predicted noise levels of up to 51 dB(A)  $L_{Aeq(15minute)}$ . In Wattle Grove Noise levels comply with the night noise criterion at the majority of assessed receptors, but marginally exceed the 37 dB(A)  $L_{Aeq(15minute)}$  criterion by 2 dB(A) at the northern extent of Wattle Grove.

### Southern rail option residential impacts

The southern rail option exceeds day and night noise criteria at St Andrews Boulevard, Buckland Road, Dunmore Road, Leacocks Lane and Slessor Road in Casula. Night time noise criteria is exceeded at Lakewood Crescent in Casula. Noise levels comply with the day and evening noise criteria at the northern and southern extents of Casula.

In Wattle Grove, the predicted noise levels exceed the night time noise criteria by 2 dB(A) at Anzac Road.

In Glenfield, at all the assessed residential receptors, the predicted noise levels comply with the day, evening and night noise criteria.

### Noise mitigation

Based on the predicted noise levels during neutral meteorological conditions, and depending on the rail access option selected, feasible and reasonable noise mitigation measures would be considered to reduce potential noise levels by at least 10 dB(A)  $L_{Aeq}$  at Casula, and 2 dB(A)  $L_{Aeq}$  at Wattle Grove. During neutral conditions, noise mitigation is potentially not required to control noise at nearest receptors in Glenfield where the additional buildings on the main IMT site would screen noise. During adverse meteorological conditions, the noise mitigation would be required to control noise levels by a further 1 to 3 dB(A) at Casula, Wattle Grove and Glenfield.

### Road traffic noise, vibration and onsite noise

Road traffic noise was investigated on the Moorebank Avenue, M5 and is predicted to comply with the NSW EPA's Road Noise Policy noise criteria of 60 dB(A) daytime and 55 dB(A) night time at the nearest receptors.

Potential noise levels associated with the proposed operation of the Project were assessed based on an unmitigated Project concept, i.e. with no operational noise mitigation in place. As a result, the assessment, which investigated maximum and peak operating conditions, has identified that potential worst case noise levels within the localised environment may exceed the adopted noise goals. Recognising these predicted exceedances, a range of operational noise mitigation measures are proposed to be implemented for the Project. With these mitigation measures in place, and on the basis that they achieve their full potential attenuation, the worst case noise levels should comply with the applicable noise goals identified in the assessment. This would be confirmed through further detailed analysis following detailed design.

The site is located 450 metres from the nearest receptors and at this distance potential ground vibration generated from IMT operations would not be perceptible. Sleep disturbance assessment based only on onsite night operations noise shows that for the nearest receptors in Casula noise levels would comply with night time noise criteria.

### 5.5.3 Visual

Clouston Associates' (2014) visual impact assessment concludes that the greatest visual impact of the Project is likely to be associated with the scale, height and bulk of the proposed buildings on the site, especially the light towers.

Views from public parks such as Leacock Park and associated residential properties that are situated on the elevated topography sloping west from the Georges River would be the greatest impacted, as well as the residential properties backing onto the Southern Sydney Freight Line (SSFL). A conservation area will be established along the western boundary of the Project site during the Early Works development phase and will include the retainment of the Georges River riparian corridor and would contribute to meeting the Project's biodiversity offset contributions as well as creating a visual barrier for users of the recreational spaces and the residential areas to the west of the SSFL once it was fully matured.

The existing mature vegetation along the Georges River riparian corridor and the retention and rehabilitation of this area will screen views of the lower project elements such as roads, rail infrastructure and warehousing from the residential area of Casula.

Direct views over the entire development are limited to the properties directly adjacent to Leacock and Carroll Park, where views are not blocked by garden vegetation or other built form. The development is also potentially visible from the second storey of a small number of properties to the west of Leacocks Lane, although these properties could not be accessed for assessment.

The removal of tall, mature vegetation along the western edge of Moorebank Avenue will alter the character of the road and afford direct views of the proposed IMT facilities. The impact on the road is rated as moderate, due to the lower sensitivity of the receptor type and its setting within an industrial area.

#### Rail options visual impacts at Full Build

The greatest visual impact of the Full Build development would be on the public parks and residential properties situated on the elevated topography sloping west from the Georges River, as well as the residential properties backing onto the SSFL. The properties along the eastern edge of roads backing onto the SSFL will have direct views of the proposed rail crossing options and passing freight trains depending on the rail option selected. Refer to Chapter 22, Section 22.4.3, of the EIS for further details of the impacts for rail option. These properties are unlikely to have views of the main project site due to the retained riparian vegetation along the river corridor.

The northern rail option at Project Full Build phase would be highly visible from nearby properties located along the eastern edge of roads backing onto the SSFL. The presence of existing infrastructure such as the passenger and SSFL in this locality reduces the impact of change to these receptors (Clouston Associates p.71).

For the central rail access option, there may be noticeable removal of vegetation associated with the southbound central rail access connection from Leacock Regional Park and associated residential properties within the parkland; however, the rail infrastructure itself would likely be obscured by foreground vegetation.

For the southern rail access option, the rail access connection and long freight trains would be visible in the foreground from the southern section of Leacock Regional Park, behind the SSFL track. However, the existing, similar rail infrastructure within this view would reduce the level of visual impact.

All of the rail options (northern, central and southern option) would be visible to the second story of properties located at Andrews Boulevard. These properties may have direct views of the tops of the gantries, container stacks and lighting poles within the project site (Clouston Associates p.71).

## 5.6 Economic

### 5.6.1 Employment opportunities

The project is estimated to generate employment opportunities for south western Sydney including direct employment at the Moorebank IMT during construction and operation. The Project will generate up to 1236 jobs in Phase B. Bringing in a workforce into an area also provides opportunities for existing businesses to support this workshop and could see increases in employment or new business opportunities in the service and retail sector such as food outlets, newsagencies and accommodation.

#### Construction employment

Table 5.6 identifies the estimated construction workforce (on-site) for the Project, per project development phase.

**Table 5.6 Indicative daily construction workforce**

Project Stage	Typical daily workforce	Peak daily workforce
Early Works	150	300
Phase A	662	1,146
Phase B	435	1,236
Phase C	275	474

#### Operational employment

During Full Build there will be a total of 808 jobs generated directly by the Project.

Table 5.7 identifies the estimated construction workforce (on-site) for the Project, per project development phase.

**Table 5.7 Indicative operation workforce**

Staff type	IMEX	Interstate	Warehouse
Administration	35	35	22
Operations (by shift – 3/day)	104	78	496
Maintenance (by shift – 3/day)	9	7	

## 5.6.2 Regional and State infrastructure benefits

Moorebank IMT is expected to generate a number of economic, social and environmental benefits for the community and economy, as outlined below and discussed in greater detail in section 3 of the EIS:

- *Economic benefits* – close to \$9 billion in economic benefits (before costs and in net present value terms), over a 30-year operational period of the Project, including \$120 million a year for the south-western Sydney economy through improved productivity; reduced operating costs; reduced costs associated with road damage, congestion and accidents; and better environmental outcomes;
- *Job creation* – up to 1,500 jobs during construction (1,247 jobs during the IMEX terminal construction and 275 during the interstate terminal construction), and approximately 2,174 long-term jobs when the Project is fully operational. Jobs created by the Project and its construction would be located at the IMT itself, as well as within the broad range of industries that would service the IMT construction and operations and its staff, including construction suppliers to retail, financial services, food outlets and health services;
- *Better environment through reduced road congestion* – Up to 3,000 fewer truck journeys every day (1,500 to and 1,500 from Port Botany) once the terminal is operating at capacity, equating to 1.05 million less truck journeys per year;
- *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; and
- *Enabling the movement of freight around Australia* – interstate freight is expected to grow by 3.6% a year over the next 20 years.

## 6. Assessment of social impacts

The social impacts identified in section 5 of this report have been summarised and assessed in Table 6.1 below. This table highlights the following:

- *Potential Impact* – this indicator shows the type of impact being assessed.
- *Project phase* – identifies which of the project stages these impacts will affect, i.e. Early Works, Phase A, B, C and Full Build.
- *Geographic context* – this indicator advises if the impact is local (within the local area) or regional (within the wider Liverpool LGA or Sydney metropolitan area).
- *Likelihood* – this is derived on a scale from ‘almost certain’ to ‘remote’ as described in section 2.4.1 of this report.
- *Potential consequence* – levels of consequence is also on a scale from ‘critical’ to ‘negligible’.
- *Overall impact significance* – the combination of the likelihood and potential consequence scales provides an assessment for each impact, using a risk assessment matrix, more information can be found in section 2.5.
- *Mitigation or enhancement strategies* – provides suggestions for mitigation for the local community.



**Table 6.1 Summary of the assessment of social impacts**

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
<b>Changes to demographic and population changes</b>						
Demographic characteristics during construction	Construction phases: Early Works, Phases A, B and C.	Short-term during construction Surrounding suburbs.  Liverpool LGA	Possible (C)	Minor (III)	<p><b>Low to negligible negative impact:</b></p> <p><i>Employment</i></p> <p>During the construction period (from Early works to Phase C) there will be a combined total of up to 1,522 construction jobs over the construction period (based on typical daily workforce estimates). Within the Liverpool LGA, the unemployment rate (ABS Census 2011) was higher than the State or metropolitan average at 7% compared to NSW at 5.9% and Sydney at 5.7%. This indicates the potential for the Project to create employment opportunities within the local or regional workforce and to contribute to supporting the growth predicted for the South-West Growth Centre in the next 22 years.</p> <p>It is anticipated that people within the Liverpool LGA and south-west Sydney will fill a majority of these positions due to the high percentage of existing skills within the current workforce for matching roles such as technicians, trades, labourers and administrative. The available job numbers do not include employment opportunities for local suppliers and subcontractors for services such as (but not limited to) trades, off-site concrete batching plants, transport companies, garbage disposal, and machinery rental. Furthermore it is anticipated that a portion of the workforce will come from the Greater Sydney catchment and these workers are likely to travel to the site due to transport networks.</p> <p><i>Housing</i></p> <p>There may be short-term noticeable population increases to the local area within the first three years of Early works and Phase A. This increase is anticipated to be contained within the site location; however there may be a small proportion of the workforce that moves to the local residential areas during construction but this impact is considered to have a low to negligible impact as it is likely</p>	<p>Promotion of local employment opportunities within the Liverpool LGA to ensure the economic benefits are realised in south-west Sydney including information sessions, open days and advertising.</p> <p>Consultation with local employment providers and services in the LGA and South-West Sydney.</p> <p>Promotion of the use local suppliers and subcontractors where possible to maximise the local economic benefits.</p> <p>Review and monitor any workforce migration during project construction phases.</p>

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
					<p>be temporary.</p> <p>Overall, the impact significance of demographic changes during construction are considered have a low to negligible impact to the community demographics due to no significant increases in population and therefore no impact to age, family composition or housing availability. The Project however offers a positive impact through increased employment opportunities.</p>	
Demographic characteristics during operation	Operation – Full Build	Long-term operation Surrounding suburbs Liverpool LGA	Possible (C)	Minor (II)	<p><b>Low negative impact:</b> According to the 2010 South-West Growth Centre strategy, developments such as the Moorebank IMT are predicted to facilitate some population growth in the region. Therefore it is possible that a small percentage of the operational workforce will relocate to the region whereby release areas and housing stock would be available in the south-west growth centres therefore not impacting on existing housing or existing demographics in the area.</p>	<p>Promotion of local employment opportunities within the Liverpool LGA to ensure the economic benefits are realised in south-west Sydney including information sessions, open days and advertising.</p> <p>Consultation with local employment providers and services in the LGA and South-West Sydney.</p>
<b>Social and community infrastructure</b>						
Housing and accommodation	Construction phases: Early Works, Phases A, B and C	Short-term Local Area	Unlikely (D)	Minor (II)	<p><b>Negligible:</b> It is unlikely that there will impacts to existing housing and accommodation during construction phases. There may also be increases in the use of motel/hotel accommodation during the various phases of construction, which would bring economic benefits for the local businesses.</p>	Monitoring and review of impact during construction.
Housing and accommodation	Full Build and Operation	Long Term Local Area	Possible (C)	Negligible (I)	<p><b>Negligible:</b> The impact to housing availability and accommodation at Full Build would be negligible given the current housing projections.</p>	Monitoring and review of impact during operation.

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
Increased demand on medical, health and emergency services and/or infrastructure	Construction phases: Early Works, Phases A, B and C	Short-term Local	Possible (C)	Moderate (III)	<b>Moderate negative:</b> There is a small potential that there will be increase in demand on local services for emergency response. The nearest emergency and trauma response facility is the Liverpool Hospital located in Elizabeth street, Liverpool. Although Liverpool Hospital is one of the largest trauma hospitals in South-West Sydney, reports on health services indicate that accessibility and availability to health services in south west Sydney is lower than the remainder of Sydney	Develop and agree on emergency response plans with emergency services to ensure that contingency can be met without detrimentally impact on the normal level of service.
Increased demand on medical, health and emergency services and/or infrastructure	Full Build and Operation	Long-term Local	Possible (C)	Minor (II)	<b>Low:</b> There is a small potential that there will be increase in demand on local services; however there is lowered risk of emergency response compared to the construction phase.	Develop and agree on emergency response plans with emergency services to ensure that contingency can be met without detrimentally impact on the normal level of service.
Demand on education services	All Phases Full Build	Long term Regional	Unlikely (C)	Minor (II)	<b>Negligible:</b> The location of the project in established suburbs of Sydney provides for many choices of educational facilities in the region. There are a total of 29 schools in the Liverpool LGA, comprising a mixture of primary; secondary; government; non-government and special needs facilities. Given the relatively high proportion of families with children already living in the area, it is likely that any increases in demand for local primary and secondary educational facilities are likely to be minimal and able to be absorbed by these facilities. Given the high proportion of schools and families, there is opportunity for the Project to engage with local schools and implement educational programs, site visits, or safety talks about the Project to develop positive relationships with local schools and integrate into the community.  The closest TAFE with relevant courses is located in Macquarie Fields. The Project could increase demand for courses relating to construction and maintenance trades and therefore create an increase in enrolments during both the construction and operational period. The Project could also identify other training opportunities with other nearby educational opportunities such as Liverpool TAFE.	Consider opportunity prior to construction to establish contact with Liverpool TAFE to discuss the role of the Project in the local and regional area, so as to allow for the establishment of relevant courses as soon as practicable.  Consider the opportunity to engage with local schools through education programs.

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
Regional and State infrastructure benefits	All Phases Full Build	Long term Regional	Almost Certain (A)	Moderate (III)	<b>High positive:</b> There are many impacts and benefits identified for this Project, these include: <ul style="list-style-type: none"> <li>savings in operating costs in the freight transport sector;</li> <li>improved freight service reliability and availability; and</li> <li>potential for an increase in employment opportunities in south-west Sydney.</li> </ul>	Monitor and review benefits during all phases and operation.
<b>Community functioning</b>						
Local social and recreational infrastructure	All Phases Full Build	Long term Local	Likely (B)	Moderate (III)	<b>Moderate negative:</b> During Construction Phases A, B, C, there may be barges used on the Georges River for the construction of the rail bridge. The Barefoot Water Ski Club operates downstream of the Liverpool Weir on the Georges River. There should be little to no impact on the water ski club as the area of the Georges River is upstream and not adjacent to the Project.  There will be a moderate to high impact on the current visual amenity while looking west over the Moorebank IMT site from four public parks in the area. These include Leacock's Park, Carroll Park in Casula and St Andrews Park in St Andrews.	Consult with local recreational stakeholders, users, the Liverpool City Council and the Casula Powerhouse Arts.  Implement traffic management plans and construction management plans to avoid adverse impacts during construction.
Severance to Casula Powerhouse Arts Centre	Construction Phases A	Short-term	Possible (C)	Minor (II)	<b>Low negative:</b> The Project would be designed to avoid any possible severance or visual barrier, particularly of central rail option. It is anticipated through detailed design that the Central rail option would not have an adverse impact on the Casula Powerhouse Arts Centre.  During construction there is potential to impact on access and traffic congestion however this can be avoided through traffic and construction management planning and schedules to avoid Casula Powerhouse Arts Centre.	Ensure early engagement with the Casula Powerhouse Arts Centre and Liverpool Council during detailed design of the rail option and during construction to avoid impacts.  Consider support to the Casula Powerhouse Arts Centre through sponsorship and promotion of events.

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
Community stress and wellbeing	All Phases and Full Build	Short-term Long-term	Likely (B)	Moderate (III)	<p><b>Moderate negative:</b> There has been a high level of community opposition to the project and anxiety and stress has been observed as well as the creation of an action group. The community are mostly concerned about deterioration of the overall quality of life including increasing trucks and creation of further traffic issues, amenity concerns including visual, noise and air quality.</p> <p>There is also sentiment within the community that the Moorebank Intermodal has been inequitably placed in the south-west suburbs.</p> <p>It anticipated that this impact will be short-term and will be alleviated through management of any adverse impacts. Ongoing dialogue and engagement with the community and their involvement in the project will build community understanding and acceptance of the outcomes.</p>	<p>Ongoing consultation and engagement with the community to alleviate perceptions and reduce anxiety and stress within the community regarding issues of concern.</p> <p>Consider implementation of a community benefit fund, such as the Citizen's Jury where the community are involved in the decision making of how the fund is spent.</p>
Community Cohesion and relationships	Early works, Phases A and B	Short -term	Unlikely (D)	Minor (II)	<p><b>Negligible:</b> Construction activities of the northern, central and southern rail options and upgrade of Moorebank Avenue may cause temporary local traffic impacts. It is unlikely that these temporary impacts would reduce opportunities for interaction and connectedness within the community or impact on community cohesion.</p>	<p>Ongoing consultation and engagement with the community to alleviate perceptions and reduce anxiety and stress within the community regarding issues of concern</p>
<b>Construction amenity</b>						
Local traffic impacts	Construction Phases (Early works, Phase A, B and C)	Short-term Local	Likely (B)	Moderate (III)	<p><b>Moderate negative:</b> The impacts on local traffic will vary with each construction and operational stage.</p> <p><i>Early works and Phase A:</i> impacts on local traffic on Moorebank Avenue as a result of the Moorebank Avenue upgrade works. These impacts will be temporary and will end once the upgrade works are completed.</p> <p><i>Phases B and C:</i> Temporary delays to local traffic on Moorebank Avenue due to construction related traffic. There will also be movement of heavy vehicles to and from the site.</p> <p><i>Phase A:</i> impacts on local roads in Casula when construction traffic accesses the rail bridge construction</p>	<p>Construction traffic will need to be managed through a construction traffic management plans and in consultation with Liverpool City council and other key stakeholders affected.</p> <p>Establish a Traffic Management Monitoring Group as a liaison body to discuss traffic management. Membership</p>



Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
					sites on the western side of the Georges River.	may include Council, RMS, Traffic Management Control Centre, Liverpool Council, NSW Police and Emergency Services.  Ensure advance communication of traffic management measures within the local surrounding community.
Local air quality impacts	Construction - All Phases	Short term Local	Unlikely (B)	Moderate (III)	<b>Low (negative):</b> During construction there is likely to be dust generating activities such as earth works which will mostly carried out during Phase A. This impact can be reduced to low to negligible if dust suppressant and mitigation measures are implemented to be within acceptable levels.  Pollutants associated with combustion engines from heavy vehicles entering and exiting the site and plant machinery represent potential for air quality impacts and mitigation would be required to reduce the level of impact. Refer to Chapter 17 – <i>Local air quality</i> of the EIS document for more detailed air quality information.	Implementation of mitigation measures to control and suppress dust and reduce emissions from engines and vehicles.  Consult the community through providing air quality monitoring results and reporting.  Other mitigation includes establishing a complaints line and resolution process.
Noise impacts	Construction All Phases	Short term Local	Likely (B)	Moderate (III)	<b>Moderate negative:</b> The noise assessment found that noise levels generated during the construction phases would meet the acceptable Noise Management Levels (NMLs) in accordance with the NSW EPA's Interim Construction Noise Guideline 2009 for the suburbs of Wattle Grove, North Glenfield and Liverpool. However, at Casula noise levels during construction activities of piling, compaction and bulk earthworks are likely to exceed NMLs at the nearest receptors and would require implementation of noise mitigation during these construction activities.	Ongoing consultation and engagement with the community to alleviate perceptions and reduce anxiety and stress within the community regarding issues of concern.  Noise management and mitigation measures to be implemented to reduce predicted noise levels for sensitive receivers particularly those receptors residential streets

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
						<p>identified at Casula, Wattle Grove and Glenfield including Casula Powerhouse Arts Centre. and residences.</p> <p>A construction noise management plan to be developed.</p>
Visual impact	All Phases Full Build	Short term Local	Likely (B)	Minor (I)	<p><b>Low negative:</b> The Visual Impact Assessment report identified areas of greatest visual impact of the completed development will be on the public parks and associated residential properties that are situated on the elevated topography sloping west from the Georges River, as well as the residential properties backing onto the Southern Sydney Freight Line (SSFL).</p> <p>Direct views over the entire development are limited to the properties directly adjacent to Leacock and Carroll Park, where views are not blocked by garden vegetation or other built form. The development is also potentially visible from the second storey of a small number of properties to the west of Leacocks Lane, although these properties could not be accessed for assessment.</p> <p>The properties along the eastern edge of roads backing onto the SSFL will have direct views of the proposed George River rail crossing bridge and passing freight trains. These properties are unlikely to have views of the main Project site due to the retained riparian vegetation along the river corridor.</p> <p>The removal of tall, mature vegetation along the western edge of Moorebank Avenue will alter the character of the road and afford direct views of the proposed IMT facilities. The impact on the road is rated as moderate, however, due to the lower sensitivity of the receptor type and its setting within an industrial area.</p>	<p>Investigate mitigation measures such as vegetation screening and urban design of the development with input from stakeholders and the community into design, landscaping and offsets.</p> <p>Commit to a community benefits fund and sponsorship program.</p>

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
<b>Operation amenity</b>						
Local traffic impacts	Full Build	Long term Local	Likely (B)	Minor (II)	<p><b>Moderate negative:</b> The operation of the Moorebank IMT during all Stages will provide both positive and negative impacts to the local and regional community. These include:</p> <ul style="list-style-type: none"> <li>Significant increase in local workforce, potentially forming a critical mass for potential increases for bus services to the local area.</li> <li>In full operating mode, the Moorebank IMT will have the same number of vehicles movements as the initial project stages, however dispersed over a 24 hour period which may decrease traffic flows during the day.</li> </ul>	Consider establishment of a Traffic Management Monitoring Group as a liaison body to discuss traffic management. Membership would include Council, RMS, Traffic Management Control Centre, Liverpool Council, NSW Police and Emergency Services.
Air quality impacts	Full Build	Long term Local	Likely (B)	Minor (II)	<p><b>Moderate negative:</b> Issues raised by the community highlight air quality as the one of the most important issues that cause concern within the community. During operation of the Project air quality pollutants from combustion engines of locomotives, mobile operating equipment and other vehicles represent the greatest potential for air quality impacts. The Air Quality Impact Assessment report indicates that of the predicted incremental and cumulative air quality impacts for all pollutants are predicted to be below the relevant OEH (NSW) criteria and NEPM (federal) goals.</p> <p>Refer to Chapter 17 – <i>Local air quality</i> of the EIS document for more detailed air quality information.</p>	Ongoing air quality monitoring and reporting back to the community.
Noise impacts	Full Build	Long term Local	Likely (B)	Major(IV)	<p><b>High negative:</b> During operation, noise modelling of the Moorebank IMT has found that for each of the three concept rail options, further design and mitigation would be required to meet acceptable noise level at the nearest receptors. This includes investigating the use of enclosures, acoustic walls. Barriers and earth mounding within the Project Site. The reported exceedences during operation have been estimated to be up to 14 to 16 dB(A).</p>	The Noise and Vibration assessment recommends a variety of mitigation measures ranging from enclosures or silencers (for machinery), to noise control design for the rail lines such as acoustic walls. For sensitive receivers building treatments such as double

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
						glazing and air conditioning could be considered.  Undertake operational noise monitoring and publicly report on results.
Visual impact	Full Build	Long term Local	Likely (B)	Moderate (III)	<p><b>Moderate negative:</b> The Visual Impact Assessment report identified areas of greatest visual impact of the completed development will be on the public parks and associated residential properties that are situated on the elevated topography sloping west from the Georges River, as well as the residential properties backing onto the SSFL.</p> <p>Additional visual impacts during the operational phase are associated with the movement of freight trains and container gantries.</p> <p>In summary the major impacts of the Project for the studied receptors will comprise:</p> <ul style="list-style-type: none"> <li>■ scale, height and bulk of the proposed buildings, especially light towers.</li> </ul> <p>Lesser impacts will include:</p> <ul style="list-style-type: none"> <li>■ areas of rail infrastructure, trains and containers</li> <li>■ car parks and adjoining roads</li> <li>■ light spill from light towers</li> <li>■ movement of freight trains across Georges River bridge.</li> </ul>	Urban Design and Landscaping plans for the new Intermodal and associated infrastructure to consider the existing amenity of the area and identify opportunities to create enhancements and improvements. Engage the community about these improvements.
<b>Economic</b>						
Employment opportunities during construction	Phases A, B and C	Short term Local	Almost Certain	Moderate (III)	<p><b>High (positive):</b> The construction of the proposed Moorebank IMT will generate construction workforce demand. The first three years includes early works and Phase A construction which is expected to generate a peak workforce of approximately 1,146. The Phase B peak construction workforce is expected to be around 1,236 and Phase C would have a peak construction workforce of 474 jobs. It is anticipated that these job opportunities will be filled by people within the south-west Sydney region. In</p>	<p>Promotion of local employment opportunities within the Liverpool LGA.</p> <p>Ensure construction contractors use local suppliers and subcontractors where possible to maximise the</p>

Potential impact	Project phase	Duration and geographic context	Likelihood	Potential consequence	Overall impact significance	Mitigation or enhancement strategies
					<p>the Liverpool LGA, Technicians and Trades Workers (15.7%) is the second largest occupational group in the Liverpool LGA with Labourers (10.5%) as the fourth largest group.</p> <p>Local business, suppliers and subcontractors will also benefit from the Project, during all stages of construction. Local businesses located in Wattle Grove are likely to see immediate benefits, being the closest shopping centre to the Project site.</p>	local economic benefits.
Employment opportunities during operation	Full Build	Long term Local Regional	Almost Certain (B)	Moderate (III)	High (positive): The Project is expected to create up to 2,174 jobs during full operation creating a positive impact to the local employment environment and supporting the long-term growth of the Liverpool LGA and the South-West Growth Centre.	<p>Promotion of local employment opportunities within the Liverpool LGA.</p> <p>Promotion of use local suppliers and subcontractors where possible to maximise the local economic benefits.</p>
Property values since project announcement	All Phases Full Build	Long term Local	Unlikely (C)	Moderate (III)	Low negative: The data shows that the median house prices in the surrounding suburbs have increased in value over the past four years. Since the project was announced in 2010 all median house prices for each surrounding suburb have increased. Notably, houses in Wattle Grove and Moorebank have increased between \$90,000 to \$155,000 from 2012 to 2014. In Casula housing prices have risen by up to \$60,000 from 2012 to 2014. This is attributed to a Sydney wide trend of housing price increases. Refer to Table 4.3 of this report for figures. A major community concern is the potential loss of amenity including noise, air visual impacts and how this would in turn impact property values.	<p>Ongoing consultation and engagement with the community to alleviate perceptions and reduce anxiety and stress within the community regarding issues of concern.</p> <p>Consider implementation of a community benefits fund that could be used to make amenity improvements to local areas but the ultimate decision is at the discretion of the community.</p>





## 7. The Project and the SIMTA development

The Sydney Intermodal Terminal Alliance (SIMTA) is proposing to also develop an IMT facility on the site currently being vacated by the Defence National Storage Distribution Centre (DNSDC) on Moorebank Avenue, Moorebank. This section discusses the potential cumulative impacts of the development of the two intermodal terminals, should they both proceed.

### 7.1 Assessment assumptions

The Sydney Intermodal Terminal Alliance (SIMTA) is proposing to also develop an IMT facility on the site currently occupied by the Defence National Storage Distribution Centre (DNSDC) on Moorebank Avenue, Moorebank.

It is unlikely that both the Moorebank Intermodal facility and the proposed SIMTA development can operate jointly. This is based on demand estimates provided by the Transport for NSW (TfNSW) in July 2013. It is anticipated that the freight catchment demand is not likely to exceed 1.05 million per annum for IMEX (the capacity of the Moorebank IMT Project alone). In addition, there is insufficient capacity on the Sydney Southern Freight Line (SSFL) to accommodate the operation of both IMTs and even assuming that future upgrades are made to the SSFL, the capacity is likely to be constrained to a throughput of 1.7 million TEUs per year. Accordingly, there is no prospect of both projects operating jointly in their current forms.

Instead, in recognition of the community and approval agencies' concerns about the prospect of both the Project site and the SIMTA site being developed in some way, an alternative approach has been developed for the cumulative impact assessment. That is, development of both sites for a combination of IMEX, interstate and warehousing capacity (either as a single combined operation or as two complementary operations) is more likely and possible scenarios for development of these sites include:

- Cumulative scenario 1: Operation of the Moorebank IMT as described in this EIS, alongside development of the SIMTA site for up to 300,000 sq. m of warehousing;
- Cumulative scenario 2: Operation of the Moorebank IMT with an IMEX terminal at 500,000 TEU per year, an interstate terminal at 500,000 TEU per year and 300,000 sq. m warehousing alongside development of the SIMTA site with an IMEX terminal at 500,000 TEU per year and 300,000 sq. m of warehousing; and
- Cumulative scenario 3: Operation of the Moorebank IMT with a 500,000 TEU per year interstate terminal only and 300,000 sq. m of warehousing alongside the operation of the SIMTA site as currently proposed (1 million TEU per year and 300,000 sq. m of warehousing).

For cumulative scenario 1, it is assumed that access from the SSFL to the Moorebank IMT would be via the northern rail access option, passing through the former Casula Powerhouse Golf Course, as this is considered a worst case in terms of noise impacts. For cumulative Scenarios 2 and 3, access to the Moorebank IMT and the SIMTA IMT would be via the southern rail access option, which crosses the Glenfield Landfill site. These rail access assumptions are based on the likely interactions and site layout of the combined sites. It is assumed that only one rail access would be built to service both sites on the basis that it would be uneconomical to build two access and ARTC have also advised that they would not support two separate rail access points.

To ensure that the worst case cumulative impacts are considered, the assessments focus primarily on the cumulative impact of both sites in their fully developed form.

## 7.2 Cumulative Social Impacts

### 7.2.1 Impacts associated with the proposed SIMTA Project

The SIMTA EIS (Urbis 2013) describes a range of potential social and economic impacts in relation to traffic, air quality and health, visual impact and light spill, noise and vibration, employment and crime prevention. These are summarised below.

**Table 7.1 Summary of social and economic impacts for the proposed SIMTA Project**

	Impact	Mitigation
Traffic	Potential increase in traffic generated by the development leading to increased delays at a number of intersections.	<p>A range of intersection and road upgrades to increase the local road capacity including:</p> <ul style="list-style-type: none"> <li>■ Potential upgrade of Moorebank Avenue between the M5/Moorebank Avenue interchange and the SIMTA northern access, to four lanes when the SIMTA site is fully developed.</li> <li>■ Concurrent with four lane widening on Moorebank Avenue, widening of the Moorebank Avenue/Anzac Road signal approaches.</li> <li>■ New traffic signal at SIMTA's northern access with Moorebank Avenue.</li> <li>■ Additional capacity improvements in the form of widening at the following ramp locations including: M5 westbound off ramp; M5 westbound on ramp; M5 eastbound off ramp.</li> </ul> <p>A range of 'travel demand management actions' that seek to encourage more active modes of transport and public transport to reduce peak hour congestion associated with journey to work.</p> <p>Provision of pedestrian and cycle infrastructure which will serve the new development as well as the surrounding community.</p>
Air quality and health	<p>Increase in emissions at a local scale from diesel vehicle exhaust associated with the operation of the site, slight decrease at a regional scale as a result of the predicted reduction in freight transport by truck.</p> <p>No probable or imminent health impacts are predicted.</p>	'Best practice' mitigation in terms of reducing emissions to air (including equipment selection and maintenance to reduce emissions where possible).
Visual impact and light spill	<p>The proposed development is expected to generally be in keeping with the industrial character of the area. The visual impacts were generally considered to be low, with some limited and localised visual impacts associated with higher and bulkier structures.</p> <p>Light spill is not predicted to exceed regulated levels.</p>	<p>Intensive landscaping and planting, built form screening and mounding.</p> <p>The proposed landscaping and works associated with reducing visual impacts will also assist in mitigating the effects of light spill.</p>

	Impact	Mitigation
Noise and vibration impacts	<p>Noise levels at non-residential receivers in the proximity of the site comply with relevant criteria. Operation noise levels at some residential receivers will exceed relevant criteria for some residential uses west of the site. No additional noise impacts are identified as a result of traffic increases on Moorebank Avenue or as a result of additional rail traffic.</p> <p>No vibration impacts are predicted during the operational phase of the development.</p>	The noise assessment recommends that provision is made at more detailed design stages for the construction of a barrier along the western boundary of the site.
Employment	<p>Creation of local employment opportunities associated with both the construction and operation of the terminal facilities. This has the potential to provide a significant social benefit to the region considering the regional demographic and policy context. Potential benefits include:</p> <ul style="list-style-type: none"> <li>■ Reduce travel distance and commuting time for potential employees.</li> <li>■ New jobs created in construction, operation, maintenance, logistics and transport, including an estimated 2840 direct ongoing jobs comprising a range of skilled and unskilled roles once the project reaches its full capacity of 1 million TEU a year.</li> <li>■ Potential opportunities could be investigated for particular groups including young people, Aboriginal people or the long-term unemployed.</li> </ul>	No mitigation is proposed.
Crime prevention through environmental design	<p>While there are few incidences of crime at or in the vicinity of the SIMTA Project site, the SIMTA EIS proposes to incorporate the Crime Prevention through Environmental DESIGN (CPTED) principles in the design of the site.</p> <p>CPTED techniques aim to influence the design of buildings and places by:</p> <ul style="list-style-type: none"> <li>■ Increasing the perception of risk to criminals by increasing the possibility of detection, challenge and capture.</li> <li>■ Increasing the effort required to commit crime, by increasing the time, effort and resources which need to be expended.</li> <li>■ Reducing the potential rewards of crime, by minimising, removing or concealing 'crime benefits'.</li> <li>■ Removing conditions that create confusion over norms of behaviour.</li> </ul>	No mitigation is proposed

Source: Sydney Intermodal Terminal Alliance Transitional Part 3A Concept Plan Application – Social Impact Commentary (Urbis 2013); SIMTA Moorebank Intermodal Terminal – Economic Assessment (Urbis 2013).

Considering the cumulative effects of both the SIMTA Project and this Project, the social impact assessment for the Moorebank IMT has identified a range of potential positive and adverse effects for both the local and the broader western Sydney community. These effects would relate to any of the three cumulative scenarios should they occur and are describe further below.

## 7.2.2 Socio-economic

### Employment

Both the Project and SIMTA warehousing development operation are expected increase local employment opportunities during operation. If both projects were to proceed, this would result in significant employment generation for the region, with an additional 3,644 positions, 3,568 positions and 4,058 positions with both projects combined for cumulative scenario 1, 2 and 3 respectively. This would have positive social and economic impacts for individuals and the local community with the inflow of more employment opportunities.

It is anticipated that impacts relating to employment opportunities will have a positive effect on the local and regional community with the inflow of more direct and indirect employment opportunities. This includes increases in the use of local retail and services in the local area.

### Demographic changes

The cumulative impact of increased employment opportunities and the impact on demographic changes within the local community would be low however are likely to be greater than would be experienced by the Project operation alone. The combined workforce of both projects is likely to come from the LGA, south-western Sydney and greater Sydney due to its accessibility and proximity to transport infrastructure.

In the short term, the combined construction workforce of both projects could have a small impact on local rental availability due to an increase in workers wanting to temporarily relocate to the local area.

The impacts of demographic changes relating to the combined operational workforce potentially moving to the local area is also low as it is predicted that this workforce would largely come from the LGA, south-west Sydney and greater Sydney.

### Improved accessibility

There will be improvements in accessibility around the Project site and the SIMTA Project and on local roads as a result of upgrades to Moorebank Avenue as proposed as part of the Project. This would result in benefits for staff working as well as the local community. The potential increase in demand for local bus services could potentially lead to increases in bus services in the local area.

## 7.2.3 Amenity

### Traffic

As a result of the cumulative operation of the Project and the SIMTA Project, the number of vehicles on Moorebank Avenue would increase, impacting the operation of the Moorebank Avenue and Anzac Road intersection. All other intersections south of Anzac Road on Moorebank Avenue would operate satisfactorily. The intersection of Moorebank Avenue and Anzac Road would be upgraded as part of the Project and the cumulative impact of scenarios 1 and 2 would not necessitate any additional mitigation to relieve congestion at this intersection. However, in the case of scenario 3, intersection upgrades would be required to mitigate the impacts of the additional traffic.

Technical Paper 1 – *Traffic, transport and access impact assessment* (Parsons Brinckerhoff 2014) concludes that the combined developments would not have substantial impact on the operation of the M5 Motorway or the regional road network.



## Air quality

The incremental (i.e. the Project and the SIMTA development only, without reference to background air quality) air pollutant concentrations and dust deposition rates associated with IMT layouts and rail access were predicted to be within NSW EPA and NEPM criteria for each of the three cumulative scenarios.

However, when taking into account the background air quality, the cumulative concentrations showed additional infrequent (five days a year in the worst case) predicted exceedance of the NSW EPA 24-hour  $PM_{2.5}$  criterion at the closest receptor to the Project site boundary (receptor R33), which is the current location of the Department of Defence (Defence) National Storage Distribution Centre (DNSDC). Exceedances occurred for each cumulative scenario. However, it is important to note that the peak ambient concentrations at this site are already above the goals due to the influence of extensive bushfire activity in late 2013.

Receptor R33 (the DNSDC) is currently being relocated to a brownfield site west of the existing DNSDC site, at location R35. Therefore, should the SIMTA development proceed, R33 would not represent a sensitive receptor. No additional exceedances of air pollutants were recorded at receptor R35 as a result of the Project and the SIMTA development.

In addition, as discussed in the Technical Paper 7 – *Local Air Quality Impact Assessment* in Volume 6, the background levels are already exceeded for  $PM_{10}$  and  $PM_{2.5}$  even without the Project. With the exception of 24-hour average concentration predictions for receptor R33, no additional exceedances above those already occurring as a result of background air levels would occur as a result of cumulative operational emissions from the Project site and the adjacent SIMTA site.

In regards to the cumulative impact with the Moorebank IMT, Environ (2014) has concluded that based on the magnitude of incremental concentrations predicted for all pollutants assessed at all surrounding receptors, the likelihood of adverse impacts arising under all three cumulative scenario operating conditions in the surrounding environment is very low. Refer to Technical Paper 7 – *Local Air Quality Impact Assessment* for details.

## Noise generation

The SIMTA proposal predicts noise impact during operation to be '*relatively low and all relevant criteria are likely to be met during operation of the facility*'. The associated operational noise impacts from the Moorebank IMT are mostly within guidelines; however without mitigation, some exceedances of the criteria in Casula, Wattle Grove and North Glenfield are predicted.

The Noise and Vibration Impact Assessment (SLR 2014) has concluded that the potential cumulative influence with development on the SIMTA site is likely to result in further exceedances of the noise criteria to the adjacent residential communities. For each of the three scenarios it will be necessary for the Project and the SIMTA proposal to implement feasible and reasonable noise mitigation measures.

## Visual impacts

Overall, for properties overlooking the Moorebank IMT and SIMTA Project site, there will be cumulative visual impacts. The cumulative impact from light spill and visual changes to the landscape will be greater with both projects operating, rather than one.

The visual impacts that would result from the SIMTA Project relate largely to general light spill and its effect on the local community, predominantly on the eastern side of Moorebank Avenue. The impact of this is considered to be low considering the area is already an industrial environment.

The area most likely to be visually impacted by the Project during operations would be the residential properties and public parks located on the elevated area of Casula, on the western side of the Georges River, overlooking the Project site. As a result of the development and operation of the Project and SIMTA Project, visual impacts will be increased.

However, given that the Project would predominantly impact visual receivers to the west of the Georges River, whilst the SIMTA Project would predominantly impact the visual environment and visual receivers to the east of the Project site, the total cumulative impacts from these projects is not considered to be significant. However, it is not anticipated that the simultaneous operation of both projects would result in a significant increase in visual impacts.

## 7.2.4 Community health and wellbeing

Should both the SIMTA development and the Project proceed, the likelihood and significance of potential cumulative health risks to the community may increase, particularly for health issues associated with impacts of key concern (traffic and noise levels and air quality). Such issues include stress and anxiety, sleep disturbance, annoyance, impacts on concentration, memory, and performance, and exacerbation of existing respiratory (e.g. asthma) and cardiovascular disease. Conversely, as discussed above, potential beneficial effects are also expected to increase in relation to increases in employment and income opportunities.

Given community opposition and concerns of both projects proceeding, the cumulative impact of both projects could result in issues including stress and anxiety, sleep disturbance and annoyance. These impacts could be reduced through further consultation with the community to ensure there is adequate understanding of the actual impacts. If visual, noise and air quality impacts are mitigated during construction and operation and opportunities for community benefits are implemented then the overall impact to community health and wellbeing would be lowered. Refer to Chapter 25 – *Human health risks and impacts*.

Technical Paper 15 – *Human Health Risk Assessment* and Technical Paper 16 – *Health Impact Assessment* in Volume 9 discuss the cumulative human health impacts. Overall, the predicted health impacts for all three cumulative scenarios are considered to be low and not significant.

## 7.3 Summary

Overall, the cumulative social impacts include increased local traffic, further noise level exceedances, light spill and visual impacts to residential properties overlooking the sites in Casula. There will, however, be some increased beneficial impacts including increased local employment opportunities and accessibility to Moorebank Avenue due to upgrade works.

Many of the adverse impacts can be mitigated to have a minimal impact on the local community and this would require both MIC and SIMTA to work collaboratively in their approach to manage cumulative impacts. This report recommends that ongoing consultation occurs with the local community throughout the Project's and SIMTA's development. This will ensure construction and operational planning optimises opportunities and minimises disruption. A further social impact assessment on cumulative impacts is also recommended should both projects be approved to ensure collaboration and management of potential impacts.

## 8. Conclusion

The Moorebank IMT will provide the development of freight terminal facilities in Moorebank, NSW. When completed, the IMT Project will include:

- an import/export (IMEX) freight terminal where freight to and from Port Botany is handled
- an interstate freight terminal where freight is received or handled prior to distribution outside the Sydney metropolitan region
- a warehousing development along Moorebank Avenue.

The Project will provide connectivity to Port Botany by rail, and will connect to major regional and interstate roads and highways via the M5 and M7 Motorways.

The anticipated impacts on the local and regional communities include:

- temporary increase in traffic and congestion along Moorebank Avenue
- increased local noise levels as a result of the development
- potential changes to air quality and emissions
- changes to the visual landscape of the area
- increased employment opportunities in south west Sydney associated with construction and operation of the Moorebank IMT.

Many of the adverse impacts can be mitigated to have a minimal impact on the local community. It is recommended, however, that ongoing consultation occurs with the local community throughout the Project's development. This will ensure construction and operational planning optimises opportunities and minimises disruption. It is important that the community understands how they can be involved in a project that potentially impacts upon them.

MIC has commenced a Citizens' Jury process to develop a public benefits package that aims to share more of the benefits of the intermodal terminal with the local area. The jury will consist of around 18 members randomly selected from suburbs near the terminal by the independent newDemocracy Foundation. Community members were given an opportunity to make a written submission to the jury.

The detailed design process will further confirm impacts and allow for the development and implementation of mitigation strategies for impacted communities.



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