

Chapter 24

Social and economic impacts



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24. Social and economic impacts

Chapter 24 provides a discussion of the social and economic impacts the Moorebank Intermodal Terminal (IMT) Project (the Project) may have at local, regional and national levels. Parsons Brinckerhoff has prepared a Social Impact Assessment (SIA) for the Project, which is included in Technical Paper 14 – *Social Impact Assessment* in Volume 9 of this Environmental Impact Statement (EIS) and summarised in this chapter.

The chapter addresses the relevant Commonwealth Department of the Environment (DoE)'s Environmental Impact Statement (EIS) Guidelines and Secretary of the NSW Department of Planning and Environment (NSW DP&E)'s Environmental Assessment Requirements (NSW SEARs) for the Project as shown in Table 24.1.

Table 24.1 Relevant Commonwealth EIS Guidelines and NSW SEARs

Requirements	Where addressed
Commonwealth EIS Guidelines under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	
<ul style="list-style-type: none"> Section 136(1)(b) of the EPBC Act enables the Minister to consider economic and social matters when deciding whether to grant approval to the proposed action under Part 9 of the EPBC Act. Accordingly, 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 employment for each stage of construction and operation and the net capital value of the project. 	Sections 24.3.1 (social impacts) and 24.3.2 (economic impacts).
NSW SEARs under the NSW <i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>	
<ul style="list-style-type: none"> Impacts on affected properties and land uses, including impacts relating to access, land use, business activities, future development potential, and property acquisition; and 	This chapter assesses the business activities component of this requirement (refer to section 24.3.2). The other issues are covered in Chapter 23 – <i>Property and infrastructure</i> .
<ul style="list-style-type: none"> impacts on users of the Georges River, including an assessment of bridge clearance to ensure safe passage of water vessels. 	Section 24.3.1.

24.1 Assessment approach

The social and economic environment was assessed by conducting an SIA and economic impact assessment.

24.1.1 Social impact assessment (SIA)

The key objectives of the SIA were to:

- establish a baseline summary of the existing social and cultural environment, including the region, the local area and the specific communities of interest close to the Project; and
- assess the potential impacts of the Project on the social and cultural environment during construction and operation and to identify mitigation measures where appropriate.

A number of qualitative and quantitative sources were used to assess the potential impacts of the Project on the social and cultural environment. These sources included:

- the Australian Bureau of Statistics (ABS) 2006 and 2011 Census data;
- social service providers and Council websites, including Liverpool City Council (LCC), South Western Sydney Local Health District (SWSLHD) and Western Sydney Regional Organisation of Councils (WSROC);
- review of local and NSW 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 – *Stakeholder and community consultation of the EIS*;
- technical studies prepared as part of this EIS; and
- a site visit and observations of the local area (including the type of housing, local commercial centres, local services, community centres and parks).

As part of the assessment, social indicators derived from criteria such as demographics, social infrastructure, land use and economics were reviewed to identify the possible impacts and to assess the potential level of impact of the Project.

24.1.2 Economic impact assessment

The objectives of the economic impact assessment were to identify:

- economic considerations of the Project for the regional and national economy;
- potential local economic impacts (positive and negative) as a result of the Project during the construction and operation phases; and
- mitigation measures to minimise any potential adverse implications of the Project.

A Project site visit was conducted on 31 August 2012. This covered the suburbs of Moorebank, Wattle Grove, Casula and Glenfield and identified existing businesses that may be affected by the Project during construction and operation.

The economic impact assessment comprised a qualitative study of local business impacts in the local area, informed by regional and national economic information as described in Chapter 3 – *Strategic context and need for the project*.

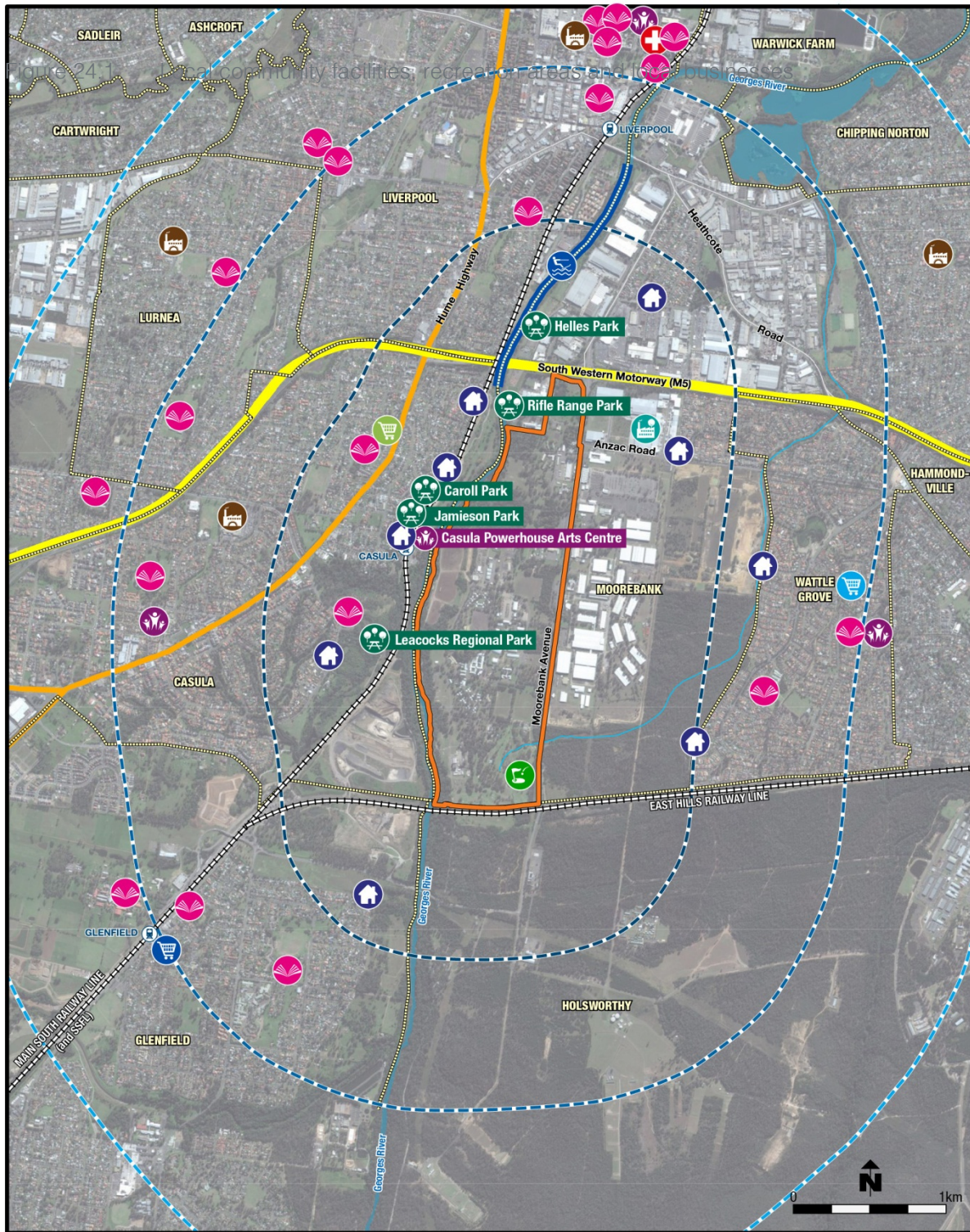
24.1.3 Cumulative assessment

In addition, in accordance with the NSW SEARs, this EIS includes a cumulative assessment of the predicted social and economic impacts of the Project in combination with the Sydney Intermodal Terminal Alliance (SIMTA) project and other planned developments within the surrounding region. The findings of the cumulative assessment are provided in Chapter 27 – *Cumulative impacts* and within section 7 of Technical Paper 14 – *Social Impact Assessment* (Volume 9).

24.2 Existing environment

The Project is located approximately 30 kilometres (km) south-west of the Sydney CBD in the Liverpool local government area (LGA). Liverpool LGA covers an area of 305.4 square km (km²) and has a population of around 180,000 (ABS 2011).

Industrial and commercial land uses and key transport corridors surround the Project site (refer to Figure 24.1). The residential suburbs of Wattle Grove, Casula and Glenfield, and various community facilities, recreation areas and local businesses are also close to the Project site (refer to Figure 24.1). Figure 11.1 (in Chapter 11 – *Traffic, transport and access*) illustrates the location of transport infrastructure and services, including existing and planned cycleways and shared pathways.



- IMT boundary
- Suburb boundary
- Distance from IMT site**
 - 1000 metres
 - 2000 metres
 - 3000 metres
- Local parks and recreational areas**
 - Royal Australian Engineers Golf Course
 - Area of aquatic licence issued to the NSW Barefoot Water Ski Club
 - Local Park
- Sensitive receivers**
 - Community facility
 - Education facility
 - Hospital facility
 - Industry facility
 - Residential facility
- Local businesses**
 - Wattle Grove Shopping Centre
 - Casula Shopping Centre
 - Glenfield local shops
 - Moorebank Business Park

Figure 24.1 Local community facilities, recreation areas and local businesses

24.2.1 Social environment

Demographic profile

Table 24.2 summarises selected socio-demographic variables within and between the key suburbs of Moorebank, Wattle Grove, Casula, Glenfield, Liverpool and Lurnea, as well as the Liverpool LGA and the greater Sydney metropolitan area. The total population of the Liverpool LGA increased by 9.5% between 2006 and 2011. The increase in the suburbs closest to the Project site was even higher, except in Moorebank, which was unchanged. Based on the 2011 Census, a relatively high percentage of people in the Liverpool LGA were born overseas (39.8%) and do not speak English at home (49.8%), which is considerably higher than the Sydney average (for which those born overseas comprise 40.1% and those who do not speak English at home comprise 37.8%). The number of single parent families and the level of mortgage stress for the Liverpool LGA are also higher than the average for Sydney.

The local suburb of Wattle Grove has a higher median income than the average for Sydney and the Liverpool LGA. The suburbs of Liverpool and Lurnea recorded median incomes below the average for Sydney and the Liverpool LGA, which is also reflected in their low (relative to other suburbs) SEIFA IRSD scores. (Note: SEIFA IRSD stands for 'Socio-Economic Indexes for Areas – Index of Relative Socio-Economic Disadvantage'; this is described further in Section 3 of the SIA). The SEIFA IRSD scores are an indication of disadvantage. Table 24.2 shows that Wattle Grove is the least disadvantaged (with the highest SEIFA IRSD score), while Lurnea is the most disadvantaged (with the lowest SEIFA IRSD score).

The unemployment rate for the Liverpool LGA (7.0%) is above the average for Sydney (5.7%). When broken down into suburbs, the unemployment rate is highest in Lurnea, Liverpool (the suburb), Casula and then Glenfield.

Family households make up a high proportion of all households within the study area, particularly in the eastern areas of Wattle Grove and Moorebank and the western areas of Casula, but there is variation across the study area. Liverpool and northern Lurnea in particular have small pockets where the percentage of families is moderately high, but also areas where family households make up less than 50%. Of the households with children younger than 15 years of age, the suburbs of Liverpool and Lurnea have the highest proportion of single parent families. Many of these live in the high population density areas in Liverpool. Wattle Grove and Moorebank have the lowest proportion of single parent families among households with children under 15, with Wattle Grove also having a particularly high proportion of two-parent families in this group.

The suburb of Liverpool is densely populated, reflected in the very high proportion of flats/units/apartments recorded in this suburb. 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.

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

Table 24.2 Selected demographic characteristics

Indicator	City	LGA	Suburb					
	Sydney	Liverpool	Moorebank	Wattle Grove	Casula	Glenfield	Liverpool	Lurnea
SEIFA IRSD 2011	-	951	1020	1094	985	1004	848	848
Total population	4,391,674	180,143	7,595	8,192	14,696	7,558	24,095	8,610
Population 0–4 years	6.8%	7.8%	8.4%	8.7%	8.0%	6.6%	8.6%	8.7%
Population change 2006–2011	-	9.5%	-0.1%	19.2%	11.3%	11.8%	13.0%	15.4%
Indigenous	1.2%	1.5%	0.8%	1.6%	1.0%	1.5%	1.1%	3.0%
Median age	36	33	35	31	34	36	33	32
Born overseas	40.1%	39.8%	29.4%	28.8%	39.9%	40.5%	56.6%	38.3%
Speak other language at home	37.8%	49.8%	34.3%	27.8%	49.7%	41.0%	66.0%	52.0%
Median weekly household income	\$1,447	\$1,299	\$1,434	\$1,938	\$1,366	\$1,394	\$922	\$883
Married	48.0%	55.3%	60.2%	54.3%	50.3%	50.2%	47.5%	55.3%
Single parent families	15.7%	18.2%	15.9%	11.2%	16.6%	17.3%	22.0%	22.3%
Unemployed	5.7%	7.0%	4.7%	3.9%	7.0%	6.8%	10.5%	11.3%
Unoccupied private dwellings	30.4%	4.2%	4.8%	3.6%	3.1%	7.0%	5.3%	3.8%
Home owned outright	34.8%	24.1%	34.0%	21.0%	26.5%	27.2%	19.7%	26.9%
Home being purchased	31.6%	41.8%	44.2%	47.1%	42.3%	44.9%	25.5%	32.5%
Home rented	7.2%	30.4%	19.4%	30.5%	26.0%	24.1%	50.3%	36.5%
Median weekly rent	\$351	\$295	\$350	\$280	\$340	\$290	\$280	\$263
Median monthly mortgage repayments	\$2,167	\$2,167	\$2,300	\$2,200	\$2,167	\$1,965	\$1,600	\$1,733
Mortgage stress	12.0%	16.7%	18.5%	13.1%	17.7%	14.5%	10.0%	15.6%

Source: Tables 4.1 and 4.2, SIA (Volume 9) based on ABS Census data, 2011

Notes: ¹ Socio-Economic Indexes for Areas (SEIFA) is a product developed by the ABS that ranks areas in Australia according to relative socio-economic advantage and disadvantage and includes the Index of Relative Socio-Economic Disadvantage (IRSD).

Social and community infrastructure

Health services

The Project site is located within the South Western Local Health District (SWSLHD). The district manages six acute public hospitals of which one, Liverpool General Hospital, is located 2.5 km north of the Project site (see Figure 24.1). Other services within the district include community health centres offering a range of prevention, palliative and rehabilitation services, as well as oral, drug and mental health services (SWSLHD 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 Project site.

Recreational areas

The LCC maintains more than 250 parks with facilities ranging from barbecues to sporting fields, and a network of walkways and cycleways. The Georges River runs along the western boundary of the Project site, and incorporates a corridor of parks and recreation land, including:

- Helles Park and Rifle Range Park immediately north of the Project site on the eastern side of the Georges River; and
- Carroll Park, Jamieson Park and Leacock Regional Park on the western side of the Georges River (see Figure 24.1).

The Georges River is also used for recreational activities, which mainly occur upstream of the Liverpool Weir (north of the Project site). The NSW Barefoot Water Ski Club uses part of the river, operating from Helles Park between the M5 Motorway bridge and the Liverpool Weir, north of the Project site. Figure 24.1 shows the extent of the NSW Barefoot Water Ski Club's aquatic licence, which applies during the summer months only.

There are some large recreation areas, including Kelso Park and Chauvel Park, in and around the suburb of Moorebank, as well as corridors of open space and parks that follow the paths of smaller waterways, such as Brickmakers Creek through Casula and Liverpool. The Casula Powerhouse Arts Centre, located on LCC land adjacent to the Georges River in Casula, is a local arts space with galleries, theatre and studios. The LCC land adjoining the Casula Powerhouse Arts Centre is public land and access is available via Powerhouse Road. Public access to the conservation zone owned by the Department of Defence (Defence) on the western boundary of the Project site (see Figure 2.3 in Chapter 2 – *Site context and environmental values*) is currently restricted for security and safety reasons.

There are four public golf courses located within 4 km of the Project site, including the Royal Australian Engineers (RAE) Golf Club. The RAE Golf Club is located at the southern end of the Project site (see Figure 24.1); while it is currently open to the public, access requires security clearance to enter the Steele Barracks, and is thus limited to those with some association with Defence (primarily former serving members).

Access to transport

In the *Growing Liverpool 2021* report, LCC acknowledged that Liverpool LGA is a city dependent on cars (LCC 2011). Residents make an average 3.4 car trips per person per day. The local roads surrounding the Project site include Moorebank Avenue, Anzac Road, Bapaume Road and Cambridge Avenue. The nearby major roads in the area include the Hume Highway, the M5 Motorway and the M7 Motorway.

Existing traffic conditions on local roads surrounding the Project site are tidal, with high northbound morning (AM) peaks that reverse for the afternoon (PM) peak (refer to the *Traffic, Transport and Accessibility Impact Assessment* included in Volume 3 of the EIS). The flow of traffic on Moorebank Avenue is mostly through-traffic between the Glenfield area and the M5 Motorway–Moorebank Avenue intersection.

Public transport infrastructure, including the local pedestrian and cycleway network, is shown in Figure 11.1 in Chapter 11 – *Traffic, transport and access*. The existing traffic and transport network in the vicinity of the Project is described in section 11.2 of that chapter. The suburb of Liverpool, in particular, has good access to local public transport including the train and local bus network.

Education

There are 29 schools in the Liverpool LGA, comprising primary, secondary, government, non-government and special needs facilities. Two TAFE institutions are located nearby in Liverpool and Macquarie Fields.

The area also includes a number of pre-school childcare facilities, including five early education and care centres and one pre-school operated by Liverpool City Council.

Community functioning

Existing stakeholder perceptions of the area

Consultation activities with the local community undertaken for the purposes of this Project are described in Chapter 5 – *Stakeholder and community consultation*. These activities have provided a snapshot of local perceptions of Moorebank and the surrounding suburbs. Of those consulted, many local community members indicated a strong attachment to their suburb and the local community, having lived in the area for 10 years or more. Most perceive their suburbs as very community-oriented, clean and safe.

Issues raised by local residents about the existing environmental and social conditions included increased traffic and congestion in the area, lack of parking in the area, insufficient entertainment for young people, increases in crime and vandalism and the need for more upkeep of public spaces. Some residents also voiced concerns about the Project; these concerns have been described and discussed in Chapter 5 – *Stakeholder and community consultation*.

LCC has raised concerns and increased community awareness of the Project and has established a 'No Intermodal Working Party' with a mandate of opposing the development of both the Project and the proposed Sydney Intermodal Terminal Alliance (SIMTA) Project. The LCC describes the Working Party as having an independent chair, and the party includes Councillors, community representatives and senior LCC staff.

Details of all community based consultation activities can be found in Chapter 5 – *Stakeholder and community consultation*.

Community cohesion and relationships

Liverpool's identity is built on aspects of its history and culture. The city of Liverpool 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.

The Liverpool LGA has many community volunteers, sporting, youth networks and action groups operating in the local area. LCC 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 LGA, as well as active Neighbourhood Watch groups. Various charities operate within the Liverpool LGA, including the Red Cross, the Liverpool Seniors Network, the Inner Wheel and St Vincent de Paul.

Community issues raised for the Project

A summary list of community issues raised in relation to this Project is identified in section 5.3.2 of this EIS. The most commonly raised issues relate to:

- air quality;
- traffic/transport/access;
- human health impacts;
- noise impacts;
- community consultation process; and
- the SIMTA Project.

24.2.2 Local economic/business profile

According to 2011 Census figures, the key employment industries in the Liverpool LGA are manufacturing (14%), retail trade (10.4%) and health care and social assistance (10.1%), while transport and storage account for 7.9% of the total number of people employed. Table 24.3 provides a summary of employment figures by industry in the Liverpool LGA. Since 2006, employment in retail, transport and storage, construction, healthcare and professional services has increased, while jobs in manufacturing and agriculture have steadily decreased.

Moorebank mainly comprises industrial land uses, including light industry, manufacturing and warehousing. The Moorebank Business Park and industrial park are located south of the M5 Motorway and north of the Project site on Moorebank Avenue (see Figure 24.1). The School of Military Engineering (SME) has provided some local economic benefits to the area, with Defence occasionally using local businesses in the surrounding suburbs such as Wattle Grove and Liverpool. Private contractors and local businesses are also engaged by Defence on occasion.

Table 24.3 Industries in the Liverpool LGA

Industry	Number employed	%
Agriculture, forestry, fishing	548	0.7
Mining	79	0.1
Manufacturing	10,411	14
Electricity, gas, water, waste services	693	0.9
Construction	6,328	8.5
Wholesale trade	4,138	5.5
Retail trade	7,788	10.4
Accommodation & food services	3,956	5.3
Transport, postal & warehousing	5,857	7.9
Information, media & telecommunications	1,187	1.6
Financial & insurances services	3,489	4.7
Rental, hiring & real estate services	956	1.3
Professional, scientific & technical services	3,358	4.5
Administrative & support services	2,528	3.4

Industry	Number employed	%
Public administration & safety	5,120	6.9
Education & training	4,316	5.8
Health care & social assistance	7,560	10.1
Arts & recreational services	846	1.1
Other services	2,881	3.9
Not stated	2,529	3.4
Total	74,568	

Source: ABS 2011

24.3 Impact assessment

The following sections outline the social and economic impacts of the Project during the construction and operational phases. The impacts for each of the three rail access options are similar and have therefore been discussed jointly in the sections below. Where differences between the potential impacts are expected, these are identified.

24.3.1 Early Works

The social impacts associated with the Early Works development phase are anticipated to be relatively minor in nature and would include impacts related to traffic and amenity values such as noise, air and visual impacts. These impacts are discussed throughout the following sections.

In addition, the Early Works development phase will have the positive impact of generating jobs over a 6-month period. This positive effect is discussed further in section 4.3.2 below.

24.3.2 Changes to demographics and population

During construction of the Project, it is expected that the typical daily workforce during the Early Works would be approximately 150, and for Phases A, B and C the typical daily workforce associated with construction activities would be approximately 662, 435 and 275 respectively. The Project is expected to generate a peak daily construction workforce of approximately 1146 during Phase A; 1236 during Phase B and 474 in Phase C (refer to Table 8.8 in Chapter 8 – *Project development phasing*).

Construction impacts

At peak construction, construction workers are expected to be sourced from within the Sydney metropolitan region, with any population increases to the Liverpool LGA anticipated to be negligible (with limited or no workforce related relocations to the LGA). It is expected that some construction workers would be sourced from inside the Liverpool LGA, primarily technicians, trades workers and labourers, who make up some of the larger occupational groups residing in the Liverpool LGA. Hence, the population of the Liverpool LGA is not expected to increase considerably during construction of the Project.

Operational impacts

At Full Build, the IMEX terminal would provide approximately 35 full-time equivalent (FTE) administration positions, as well as 104 FTE operational and nine FTE maintenance positions (per shift with three shifts per day). This equates to a total of approximately 374 FTE onsite operational in any 24 hour period. With both figures combined, this represents 0.2% of the Liverpool LGA population. It is likely, however, that while some workers would be sourced from within the Liverpool LGA, the rest of the workforce would be sourced from outside the Liverpool LGA (employment at the site would be given to the most suitably qualified applicants). The operation of warehousing could see an additional 1500 people being employed in the area; this would be equivalent to an increase of around 1% of the existing Liverpool LGA population (see Table 24.4).

24.3.3 Local recreational infrastructure

Some local social and recreational infrastructure may be affected by the Project. This would be limited to the Royal Australian Engineers (RAE) Golf Club located at the southern end of the Project site, and the NSW Barefoot Water Ski Club, which operates on the Georges River from just south of the M5 Motorway crossing to the Liverpool Weir, with a ramp from Helles Park just north of the M5 Motorway overbridge (see Figure 24.1).

A number of public areas overlook the Project site. While direct impacts on these areas are not anticipated, indirect impacts on the amenity of these areas are likely and are discussed later in this chapter.

Construction impacts

During construction of the Georges River bridge crossing for the northern rail access option, the NSW Barefoot Water Ski Club may experience some access restrictions related to the temporary closure of part of the Georges River. The aquatic licence issued to the NSW Barefoot Water Ski Club by RMS operates from early October to late April, so any access impacts would only be experienced during these times.

The LCC land adjacent to the Georges River would be affected during construction of the rail connection to the Southern Sydney Freight Line (SSFL) for the northern and central rail access options. In addition, construction compounds and laydown areas may also be established in this area. The conservation area on the western boundary of the Project site would be established during the Early Works, and would progress through landscaping works associated with subsequent phases of the Project. It has not yet been confirmed whether public access would be made available to this land, as this requires further consideration of security and conservation issues. This would be further considered by MIC during detailed design.

24.3.4 Potential severance impacts

'Severance' refers to perceived barriers or physical separation between people and places. There would be no new severance impacts caused by the Project; however, the location of the northern rail access 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.

The Casula Powerhouse Arts Centre is highly valued by the community and considered a community and cultural asset by LCC. The main access to the Casula Powerhouse Arts Centre is via Powerhouse Road, which serves as the main connection and access for the surrounding community. There is potential for the new rail bridge infrastructure, particularly under the northern rail access option, to contribute to visual severance and create a barrier when it crosses over Powerhouse Road. During construction, access would be maintained and any traffic impacts managed on Powerhouse Road to avoid severance to this facility and park land.

Operational impacts

For all rail access options, the RAE Golf Club, which is located within the SME site, would be removed to make way for the Project. As a consequence, the golf course would no longer be accessible to the public during construction or operation of the Project, which would result in a minor loss of recreational activities for the local area. Other public golf courses also exist in the area, including the New Brighton Golf Club, approximately 3 km north-west of the Project site, and the Tea Tree Valley Golf Course, approximately 4 km west of the Project site.

In relation to the RAE Golf Club, increasing security requirements have meant that members of the public are required to report to the Holsworthy Pass Office before entering the facility. Golf course staff have indicated (pers comm. 2013) that these security requirements have resulted in a significant drop in numbers, such that the golf course now has very limited public use.

A small section of the LCC land reserved for the proposed easement for the northern rail access connection to the SSFL (and associated maintenance corridor) would be affected during operation of the Project. The rest of the land would be available for public access, in consultation with LCC.

During operation of the Project, impacts on the recreational use of the Georges River are unlikely. The normal water level at the proposed Georges River bridge location (the location of the northern rail access option bridge crossing to the SSFL) is RL 3.0 m, which is non-tidal due to the weir located downstream. This provides a vertical clearance of 8.3 m to the underside of the bridge deck (i.e. at RL 11.3m). This would only reduce during a flood event, when recreational use of the waterway would be extremely hazardous and is considered unlikely. The bridges for the upstream rail access options would allow less clearance but all would be designed with the bridge deck soffit 500 mm above the predicted 1% AEP flood level.

Given that the options are still at the conceptual design stage, the final design of the structures associated with each of the rail access options will be subject to refinement. However, in each case, it is likely that bridges would have multiple piers located both adjacent to and potentially within the Georges River channel and within the Georges River floodplain. Where possible, bridge piers within the river channel itself would be avoided.

The aquatic licence for the NSW Barefoot Water Ski Club does not extend as far south as the proposed northern rail access bridge, ending just south of the M5 Motorway. Small boats and other water vessels would be able to clear the bridge; however, recreational use of this part of the river is uncommon, according to advice from NSW Roads and Maritime Services (RMS) (September 2012). Further downstream, the Chipping Norton Lakes provide a purpose built recreational facility to allow for boating and water activities. For these reasons, recreational impacts during operation of the Project are likely to be negligible.

24.3.5 Social and community infrastructure impacts

Impacts on social and community infrastructure, such as demand for housing and accommodation, medical services and education and childcare services, are likely to occur throughout the construction and operation of the Project, as explained below. Impacts on social and community infrastructure are based on the predicted workforce numbers for the construction and operation of the Project and so would not differ between the three rail access options.

24.3.6 Housing and accommodation impacts

Negligible impacts on existing housing and accommodation would be expected during all phases of the Project (construction and operation). There are many housing and accommodation options within the Liverpool LGA. The suburb of Liverpool has a rental accommodation market of more than 50%, providing opportunities for local accommodation. Nevertheless, an influx of construction workers to the region during peak periods of construction may result in a temporary increase in the demand for rental properties in the Liverpool LGA.

Because the Project is located within the Sydney metropolitan area, large numbers of permanent relocations to this area in relation to the Project are not expected. Additionally, noting the projected long-term growth of the Liverpool LGA, any small additional demand created by the Project is likely to be absorbed by planned construction of additional dwellings.

24.3.7 Infrastructure and service impacts

Medical, health services and/or infrastructure

The anticipated increase in local population during both construction and operation stages of the Project could result in some increased demand on the number of health facilities and services being used in the Liverpool LGA and south-west Sydney region. However, this is expected to be minimal, since the number of Project construction workers and operational staff would represent a small percentage of the current residential population, as shown in Table 24.4.

Table 24.4 Typical workforce numbers as a percentage of the total Liverpool LGA

Stage	Typical workforce as a percentage (%) of Liverpool LGA population
Early Works	0.08
Phase A	0.34 (peak 0.6)
Phase B – peak construction plus operation	0.24 (peak 0.68)
Phase C – peak construction and operation	0.2 (peak 0.26)
Full Build – IMEX and warehousing	1.0

Education services

As noted in section 24.2.1, there is a large number and variety of schools in the Liverpool LGA. It is anticipated that a small number of families would relocate to the local area due to the Project; therefore, the overall impact of demands for these facilities would be relatively minor. Any increases in demand for local educational facilities are likely to be minimal during both the construction and operation stages of the Project, and would be able to be absorbed by the existing facilities.

The most relevant education options for employment on the Project would be building or construction courses. The closest TAFE with relevant courses is located in Macquarie Fields, approximately 7 km from the Project. The Project may facilitate opportunities to deliver courses relating to construction trades and, therefore, create an increase in enrolments during both the construction and operational phases.

In line with the low numbers of families expected to relocate to the area described above, demand for pre-school childcare services is also expected to be minor. Any increases in demand for childcare are likely to be minimal during both the construction and operation stages of the Project and should be able to be absorbed by existing facilities.

24.3.8 Local traffic, transport and access

There are likely to be some impacts on local traffic as a result of the Project. These would vary throughout the construction and operational phases (refer to Chapter 11 – *Traffic, transport and access*). The overall traffic volumes generated by the Project are expected to be similar for each rail access option, although there will be some differences between the predicted distribution of traffic during Phase A associated with the construction of the Georges River crossings. Further discussion of this and the proposed mitigation of impacts are provided in Chapter 11 – *Traffic, transport and access*.

Construction traffic impacts

At all stages of construction there would be temporary increases in construction vehicle traffic on local roads to access the Project (refer to Chapter 11 – *Traffic, transport and access*).

Overall, construction traffic volumes entering and exiting the Project site would vary over the duration of construction. Construction vehicle traffic is expected to be greatest during Phase B, coincident with the peak workforce requirements. Heavy vehicle access to the Project site would generally be via the M5 Motorway and Moorebank Avenue, with the exception of some limited access requirements from the western side of the Georges River, associated with the construction of the rail access for all options.

Some partial and full road closures may be required during construction. Road closures would occur in consultation with the RMS and relevant local councils.

There would also be temporary delays to local traffic on Moorebank Avenue, as a result of upgrade works. Local travel times and congestion may increase temporarily in these areas, as discussed further in Chapter 11 – *Traffic, transport and access*.

No passenger rail services would be disrupted as a result of the construction of the Project. Other transport services such as buses may be affected during the Moorebank Avenue upgrade works. Currently, the area is serviced by one bus route (Route 901) and travel times on this route may increase as a result of the Moorebank Avenue upgrade works.

There would be some local traffic impacts in Casula during construction of the rail link to the SSFL on the western side of the Georges River. As discussed in Chapter 11 – *Traffic, transport and access*, during this time, residences along the potential haulage routes may be affected by up to 25 heavy vehicles passing a day.

There would also be specific impacts associated with each of the three rail access options. These are discussed below.

Northern rail access option

The northern rail access option includes a bridge over the Georges River that could accommodate both IMEX and interstate trains during Phase A. Haulage routes for the northern rail access options on the western side of the Georges River are likely to be via:

- Charles Street or Mill Road;
- Mill Road;
- Speed Street;
- Shepherd Street; and
- Powerhouse Road.

For the northern rail access option, it is anticipated that approximately 40% of the rail bridge and approach viaduct structures (including the piles, piers and deck) would be constructed from the western bank. This would require access to the site through parts of Casula. It is expected that construction for the northern rail access option would take approximately 18 months; however, this timing would be confirmed in the Stage 2 State significant development (SSD) approval(s) phase.

In addition, the northern rail access option would require the partial realignment of Powerhouse Road to provide for the tie-in of the rail link to the SSFL, but an extended closure of Powerhouse Road is unlikely to be required.

Central rail access option

The central rail access option would require two bridges; one each for the northbound and southbound rail connections. Only the northbound rail connection would be constructed as part of Phase A; the construction of the southbound connection would follow in Phase C.

As with the northern rail access option, the haulage routes for the central rail access options on the western side of the Georges River are likely to be via:

- Charles Street or Mill Road;
- Mill Road;
- Speed Street;
- Shepherd Street; and
- Powerhouse Road.

For the central rail access option, approximately 25% of the rail bridge and approach viaduct structures would require access from the western bank on the 'hourglass' land, requiring construction traffic access to the site through parts of Casula. The construction period is estimated at 24 months. The timing would be confirmed in the Stage 2 development application.

The central rail access option would require the partial realignment of Powerhouse Road to provide for the tie-in of the rail link to the SSFL, but an extended closure of Powerhouse Road is unlikely to be required.

Southern rail access option

The southern rail access option would include a bridge over the Georges River that could accommodate both IMEX and interstate trains. Haulage routes for the southern rail access from Cambridge Avenue would be via Moorebank Avenue or Glenfield Road.

For the southern rail access option, approximately 90% of the rail bridge and approach viaduct structures would require access from the eastern bank (i.e. through the main IMT site) and 10% from the western bank on the Glenfield Landfill site.

The construction period is estimated at 24 months, based on the indicative site layouts. The timing would be confirmed in the Stage 2SSD approval(s) phase.

Operational traffic impacts

During operation, the benefits of the Project would include relieving the regional Sydney road network of articulated vehicular traffic by shifting freight from road to rail (refer to Chapter 11 – *Traffic, transport and access*). It is anticipated that approximately 10% of the IMEX and interstate IMT workers would travel to work on public transport, thus enabling more opportunities to increase bus services to the area.

No passenger rail services would be disrupted as a result of the operation of the Project.

24.3.9 Air quality impacts

There are likely to be impacts on local air quality as a result of the Project. These would vary across the three rail access options but are not expected to exceed air quality criteria (refer to Chapter 17 – *Local air quality*). Construction impacts would be broadly the same for each rail access option, with impacts being focused around the area of the construction works and diminishing rapidly with distance from the Project site.

Construction impacts

For all rail access options, potential air quality impacts during construction of the Project would be localised and would occur over defined periods between 2015 and 2030. The most likely sources of air quality impacts would be:

- emissions of particulate matter (PM) (PM₁₀, PM_{2.5}, total suspended particulates (TSP) and deposited dust); and
- pollutants associated with combustion engines from heavy vehicles and plant machinery.

The implementation of appropriate management practices would mitigate the extent of impacts on nearby sensitive receivers (refer to section 17.4 in Chapter 17 – *Local air quality*).

Operational impacts

During operation of the Project, combustion engine emissions (NO_x, CO, SO₂, PM_{2.5}, PM₁₀, VOCs and PAHs) from locomotives, mobile LNG equipment and OTVs represent the most likely sources of air quality impacts. A number of mitigation measures are proposed to minimise the impacts of these emissions (refer to section 17.4 in Chapter 17 and section 25.4 in Chapter 25). With these measures in place, no unacceptable adverse impacts are anticipated for offsite receptors from any of the rail access options.

24.3.10 Noise and vibration impacts

There are likely to be moderate noise impacts as a result of the Project. These would vary throughout construction and operation (refer to Chapter 12 – *Noise and vibration*).

Construction impacts

During construction, it is expected that the local community would hear machinery movements on site for all three of the rail access options. The predicted noise levels from the majority of construction activities during the Early Works, Phase A, Phase B and Phase C of the Project are expected to comply with limits (noise management levels, or NMLs) set out in the *Interim Construction Noise Guideline* (ICNG) (DECC 2009) without the requirement for noise mitigation.

Where noise generating works such as bulk earthworks and rail construction activities are undertaken close to residences, a range of noise mitigation measures have been proposed in Chapter 12 – *Noise and vibration*.

During rail construction works and any construction works required outside the standard daytime hours, additional noise mitigation measures, such as localised noise screens and respite periods, have been recommended to achieve noise goals and minimise potential for disturbance. At Casula, Wattle Grove and Glenfield, noise levels during piling and rail access construction works are predicted to temporarily exceed the NMLs and therefore trigger the need for reasonable and feasible noise mitigation measures.

If all recommended construction noise management and mitigation measures are implemented, it is considered likely that the potential noise levels at the assessed receivers in Wattle Grove, Casula and North Glenfield would be sufficiently controlled to achieve the adopted NMLs. The measures proposed to minimise these impacts are described in Chapter 12 – *Noise and vibration*.

Operational impacts

For each of the three indicative concept layouts, the predicted unmitigated noise levels at the nearest residential receptors during Phase B, Phase C and Full Build operations are likely to exceed the Project specific noise criteria by up to 17 dB(A) L_{Aeq}, depending on the phase of the Project (refer Chapter 12 – *Noise and vibration* for detail).

At Full Build of the Project in approximately 2030, without any noise mitigation, noise levels from operations at the main IMT site are predicted to exceed the noise assessment criteria at the nearest residential receivers in Casula, Wattle Grove and North Glenfield under certain conditions for all three layout options. Due to the proximity of residential receptors to the western main IMT site boundary, Casula residents are predicted to be the most affected. Noise levels at all non-residential receptors are predicted to comply with the amenity noise criteria for all option layouts.

For operation of the rail access connection to the SSFL at Full Build of the Project in approximately 2030, noise levels at the nearest residential receivers in Casula are predicted to exceed the amenity noise criteria under the northern rail access option, but comply with the criteria for the central and southern rail access options. Again, noise levels at all non-residential receptors are predicted to comply with the amenity noise criteria for all option layout options.

While it is likely that that some residents in Casula, Wattle Grove and North Glenfield would experience changes in the background noise environment from the changing in land use across the Project site, in most cases these are expected to fall within acceptable limits with mitigation. The exception is the potential exceedance of amenity criteria for the north rail access connection associated with train movements to and from the site. These noise 'events' would be temporary but would occur up to 40 times in a 24-hour period. Night-time movements are likely to be more noticeable and, without mitigation, may trigger sleep disturbance criteria. Further analysis of potential noise impacts would be undertaken for the Stage 2 SSD approval(s).

Recognising the predicted noise criteria exceedances, a range of operational noise mitigation measures are proposed to be implemented for the Project. Where the proposed measures are implemented in full, the potential impacts presented in the EIS can be mitigated to achieve compliance with the relevant guidelines. This would be confirmed through further analysis during detailed design, with priority being given to the containment of noise emissions at source, followed by 'at-boundary' measures such as embankments and noise walls. Should the assessment criteria not be achieved at all receptors, where the Project has reduced noise levels to be as low as reasonably practicable, the relevant guidelines (the *NSW Industrial Noise Policy*) note that achievable noise limits can be negotiated with regulators and the community.

24.3.11 Visual amenity impacts

Generally, the visual impacts of the Project are expected to be moderate. Impacts would vary for the three rail access options throughout the construction and operational phases (refer to Chapter 24 – *Visual and urban design*).

Construction impacts

For all rail access options, during construction of the Project, the local community may expect to see machinery movement onsite.

For the northern and central rail access options, areas in the Casula suburb overlooking the Project site with no visual screening (i.e. from other buildings or vegetation) may also have views of the rail access bridges under construction. Affected receptors may include public parks and residential properties.

Operational impacts

At Full Build, the areas experiencing greatest visual impact would include the public parks and associated residential properties situated on the elevated topography sloping west from the Georges River, and those residential properties backing onto the SSFL. This would be the case for all three rail access options.

Additional impacts would be associated with the northern and central rail access options, which would allow views of the rail bridge access into the site from the suburb of Casula. Direct views over the entire operational IMT would be limited to the properties directly adjacent to Leacock Regional Park and Carroll Park, where views would not be blocked by garden vegetation or other built form. The operational IMT would also potentially be visible from the second storeys of a small number of properties to the west of Leacocks Lane.

Specific impacts associated with each of the rail access options include:

- Under the northern rail access option, views of the bridge crossing over the Georges River would be visible from the Georges River Casula Parklands;
- Under the central rail access option, views of the southbound interstate rail access would be visible from Leacock Regional Park and associated residential properties within the parkland; and
- Under the southern rail access option, views of the rail access connection would be visible across the SSFL from the southern section of Leacock Regional Park.

In addition, the lighting requirement for the Moorebank IMT would introduce new sources of artificial light into the night-time environment. For some residential locations that overlook the Project site, there would be a noticeable change in the brightness of the area on clear nights. In foggy conditions, the brightness may be less pronounced but there would be a local sky glow effect.

Depending on the rail access option selected for the Project, transitory lighting from train headlights on trains leaving the Project site at night would potentially affect some residential locations. For the northern and central rail access options, trains leaving the IMT would directly face some residents in Casula. For the southern rail access option, no substantial impact is predicted from train headlights.

Mitigation measures for predicted light spill impacts are described in Chapter 22 – *Visual and urban design*.

24.3.12 Economic impacts

Impacts on the regional and national economy

Construction and operation of the Project would bring some economic benefits to the regional and national economy. A number of positive economic impacts are envisaged from the Project. These are described in more detail in section 3.4 of Chapter 3 – *Strategic context and need for the Project*) of this EIS.

The Project is expected to generate a number of economic, social and environmental benefits:

- *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 per 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* – creation of 1247 jobs (typical workforce) during construction of the IMEX terminal and warehousing and 275 jobs (typical workforce) during the construction for the interstate terminal. Operation of the Project is expected to generate approximately 2174 jobs;
- *Better environment through reduced road congestion* – up to 1500 fewer truck journeys to and from Port Botany each day, with associated reductions in greenhouse gas emissions and other air pollutants;
- *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.

The development of the Project is intended to increase intermodal capacity in Sydney, and will have a number of flow-on benefits across the freight sector and for the NSW economy. By providing increased intermodal capacity in Sydney, it is envisaged that the unit costs of transporting containers by rail for IMEX and interstate markets would be reduced, and this would lead to an increase in the share of freight movements by rail.

The main economic benefits would be felt within the construction industry, which would then flow through the regional economy via the construction industry supply chain and employee spending. It is anticipated that higher construction activity from the Project would in turn increase the demand for industries that support the construction industry, such as wholesale trade, finance and insurance.

In addition, higher construction activity in the region would require additional construction employment. This would lift demand for industries that support the construction industry supply chain and boost spending by construction workers on services and consumer-oriented industries such as health, education, retail and accommodation, and cafés and restaurants.

Economic analysis undertaken for the Project does not identify any major negative impacts on the regional and national economy as a result of the construction and/or operation of the Project. However, the analysis also identified a number of potential adverse economic consequences associated with not proceeding with the Project. These are described in Chapter 6 – *Project development and alternatives* of this EIS.

Local economic impacts and benefits

A site visit in August 2012 was undertaken by Parsons Brinckerhoff to identify local businesses in Wattle Grove, Casula and Glenfield. This identified that some local businesses may be affected by the construction and/or operation of the Project (see Table 24.5). Consultation has occurred with local businesses and meetings have been held with the Sydney Business Chamber and NSW Business Chamber with a view to consulting with local businesses in the area as the Project progresses (refer to Chapter 5 – *Stakeholder and community consultation*).

Table 24.5 Local businesses which may be affected by the construction and/or operation of the Project

Local business types	Wattle Grove Shopping Centre	Casula Shopping Centre	Glenfield local shops (Glenfield Station)
Takeaway shops/restaurants/cafés	5	3	3
Property and business services	1		1
Health and community services	7	1	3
Post office	-	-	1
Newsagency and convenience stores	1	1	2
Hotels	1	-	-

The Project site is bounded by an industrial park, business park and warehousing facilities, as shown in Figure 24.1. No local shops or amenities are located close to the Project site, although there may be some local businesses operating from within the business and industrial parks. It is expected that construction workers would need to travel to Wattle Grove and Glenfield to access local shops and amenities.

No local businesses were identified on the western side of the Georges River in the vicinity of the Project site (with the exception of shops along the Hume Highway).

Construction impacts

During construction of the Project, the following construction activities, structures and equipment may affect local businesses in the area:

- Potential disruption from access of light and heavy vehicles to the Project site via Moorebank Avenue, upgrade works to Moorebank Avenue and partial/full road closures, and realignment of Powerhouse Road for the northern and central rail access options (refer to Chapter 11 – *Traffic, transport and access*);
- Visual impacts, including workshop building, laydown areas and fencing (refer to Chapter 22 – *Visual and urban design*); and
- Noise, vibration and air quality impacts from construction vehicles and machinery including spoil removal, material deliveries and associated activities (refer to Chapter 12 – *Noise and vibration* and Chapter 17 – *Local air quality*).

During each construction stage, the industries most likely to benefit are the cafés, restaurants and local retail outlets in Glenfield and Wattle Grove. These businesses may experience a small to moderate increase in sales associated with the increase in construction workers in the area. As no cafés, restaurants or local retail outlets are close to the Project site, the construction activities would not affect their visibility. Noise and air disturbances would not be a major issue as the nearest local shops and amenities are located a fair distance from the Project site. The Project would also create job opportunities during the major civil construction works, as discussed in Chapter 3 – *Strategic context and need for the Project*; these opportunities should provide positive flow-on effects to the local economy.

In terms of negative effects, the movement of construction related traffic may result in negative impacts on local businesses, particularly those businesses operating in the Moorebank Business Park adjacent to the Project site. Movement of heavy vehicles on Moorebank Avenue may increase travel times for patrons accessing local businesses in Glenfield or the Wattle Grove Shopping Village. In addition, the removal of the SME from its current location would potentially divert patronage from SME personnel to other local businesses. However, SME Defence personnel would remain in the local area, with a planned relocation of the SME to the nearby Holsworthy Barracks (as part of the Moorebank Units Relocation (MUR) Project).

As the development of the Project would be staged, there is also potential for businesses to be positively or negatively affected more than once by the Project construction.

Operation impacts

During operation, local food and retail outlets may experience an increase in demand and sales from personnel working at the Project. The Project should also boost local employment in the region and encourage local businesses (such as cafés or convenience stores) to operate closer to the Moorebank IMT. Local warehouse operators and bulky goods retailers may benefit from being able to use the Project facilities.

There would be opportunities for new food and retail outlets to operate near the Moorebank IMT and this could potentially divert patronage from the local shops in Glenfield and Wattle Grove to these new areas; however, the direct employment created by the site would also be expected to result in passing trade for existing retailers. The impacts on contractors who currently service the SME would be addressed as part of the MUR Project and are not considered further in this EIS.

24.4 Summary of impacts

Table 24.6 presents an overview of potential social and economic effects and the potential areas affected. The table reflects that some residents of the local communities in Casula, Wattle Grove and Glenfield are likely to experience a range of amenity effects as a result of the construction phase of the Project. These are likely to be greatest during Phase A, when a large amount of construction work, including the rail accesses to the SSFL and the upgrade to Moorebank Avenue, is likely to take place. The construction effects during Phases B and C are likely to be less extensive, but would still affect many of the same residents, particularly those in Casula with views overlooking the Project site.

In general, operational impacts are considered likely to be less obtrusive, being focused along Moorebank Avenue and within the Project site. However, some residents within Casula, Wattle Grove and Glenfield are likely to experience changed conditions (both positive and negative) as a result of noise, traffic and visual impacts. In addition to the predicted changes to the composition of the noise environment, the noise and vibration impact assessment (refer Chapter 12 – *Noise and vibration*) has identified potential for night-time noise exceedances in Casula residences close to the SSFL for the northern rail access option. It is expected that this could be mitigated to acceptable levels and would be looked at in greater detail for the Stage 2 SSD approval(s).

During Phases B and C, when there will be periods of combined construction and operation, some residents may experience effects from either construction sources, operational sources or a combination of both. This may result in individuals experiencing a greater level of disturbance than from either the construction or operational effects alone, effectively a cumulative (synergistic) effect¹. At present, based on the outcomes of the specialist studies undertaken for this EIS, it is considered that with mitigation any such effects could be managed to be within acceptable limits. This would be examined further in the assessments undertaken for the Stage 2 SSD approval(s).

Social (and in particular amenity) effects are generally subjective in nature, and whether they are considered to be adverse or neutral (or in some cases beneficial) will depend largely on the person experiencing them. Furthermore, a person's tolerance to these effects can vary over time. In general, tolerance of adverse effects is often higher when the effect is known to be of limited duration. Conversely, an extended period of exposure to adverse conditions or exposure for an unknown or indeterminate duration will often result in reduced tolerance and increased distress in an individual. Consequently, the focus of mitigation measures for social impacts is on communication and engagement with the communities around the development.

Table 24.6 summarises the proposed application of mitigation measures to each of the identified impacts.

¹ Cumulative effects arise, for instance, where several developments each have insignificant effects but together have a significant effect; or where several individual effects of the plan (e.g. noise, dust and visual) have a combined effect. Synergistic effects interact to produce a total effect greater than the sum of the individual effects.

Table 24.6 Summary of social and economic impacts

Aspect	Potential receptors	Impact		Notes	Mitigation
		Construction	Operation		
Demographics and population	Liverpool LGA	Negligible temporary increase in population associated with construction workforce, potential for slight increase in demand for rental and temporary accommodation for duration of each construction phase as a result.	Minor permanent increase in population associated with operational workforce at Full Build.	Construction impacts will be temporary and short term – lasting only for as long as each construction phase. Typical construction workforce for each phase is estimated at 150, 662, 435 and 275 respectively for Early Works, and Phases A, B and C. Given the location of the Project site (being within the greater Sydney metropolitan area), it is expected that only a small proportion of this workforce would relocate for the duration of construction.	No specific mitigation is required at this stage. Further review of construction workforce requirements for Phases A, B and C would be undertaken for Stage 2 SSD approval(s). Any relocation to the area associated with the operational workforce is anticipated to be able to be accommodated in line with Liverpool LGA forecast growth and planned housing supply increases.
Local recreational infrastructure	RAE Golf Club Casula Powerhouse Arts Centre Parkland adjoining and overlooking the Project site Georges River users	The development of the Moorebank IMT necessitates the removal of the RAE Golf Club. While this facility is understood to attract limited public access, as a result of the Project it would be completely closed and no longer available for use. There are likely to be varying degrees of disruption affecting access to and the amenity of the Powerhouse Arts Centre, parkland adjoining or overlooking the Project site and users of the Georges River. This is expected to be greatest during Phase A,	Negligible to limited amenity impacts on the users of parkland and Georges River are anticipated during operation of the Project. No operational impacts are anticipated on the Powerhouse Arts Centre. The RAE Golf Club will no longer exist and so would not be affected by the operation of the Project.	More information on the extent of the likely effects and the staging of the development would become available for the Stage 2 SSD approval(s) – this would assist in refining the extent of any predicted impact and assist in discussion with potentially affected receptors.	Active communication and engagement with affected facilities, including the Powerhouse Arts Centre, Liverpool LGA in relation to affected parkland and the NSW Barefoot Water Ski Club, which operates on the Georges River downstream of the Project site.

Aspect	Potential receptors	Impact		Notes	Mitigation
		Construction	Operation		
		with the construction of the rail accesses to the site from the SSFL. Adverse effects are most likely in relation to the northern and central rail access options. In all cases access would be maintained during construction.			
Social and community infrastructure (hospitals, schools etc.)	Healthcare and education facilities in the Liverpool LGA	Negligible temporary increase in potential healthcare demand from construction workforce. Potential additional demands for emergency services should an incident occur.	Negligible permanent increase in demand for healthcare and education support from any relocating workforce at Full Build.		Specific mitigation is not required for the potential 'day to day' increase in healthcare or education demand as this is anticipated to be within forecast growth for the LGA. Additional engagement would be required with emergency service providers to ensure suitable incident response plans are established and maintained for both the construction and operational phases.
Social amenity impacts					
Traffic	Liverpool LGA Casula suburb Glenfield suburb	Local increase in both light and heavy vehicle traffic during construction, primarily along Moorebank Avenue. Some additional temporary local increases in heavy vehicle traffic would be experienced in Casula and Glenfield, associated with the construction of the rail accesses from the SSFL.	Local increase in light and heavy vehicle traffic along Moorebank Avenue associated with the operation of the Project. The effect of this will be negligible to minor.	An upgrade of Moorebank Avenue is proposed as part of the Moorebank IMT Project. This will address any existing capacity issues along Moorebank Avenue intersections.	Mitigation recommendations specific to managing traffic impacts would be implemented as described in Chapter 11 – <i>Traffic, transport and access</i> . Active communication and engagement with affected residents and businesses would be undertaken to ensure timing and duration of construction impacts are

Aspect	Potential receptors	Impact		Notes	Mitigation
		Construction	Operation		
					<p>understood.</p> <p>Provision of contact details for raising concerns or complaints. Identification and implementation of response/resolution procedure.</p>
Air quality	Neighbouring suburbs: Casula, Wattle Grove, Glenfield	Potential for temporary local increase in particulate matter generation from demolition, earthworks and construction activities. No offsite effects are anticipated with dust mitigation in place.	No offsite air quality exceedances are predicted during operation of the Moorebank IMT.	<p>No discernible change to local air quality is expected in the potentially affected suburbs. Furthermore, consideration of the potential for human health effects on the resident population, including vulnerable groups (children, people with underlying health conditions and the elderly) indicated that the risk of any impact is low and acceptable (refer Chapter 25 – <i>Human health risks and impacts</i>).</p> <p>Air quality impacts would be subject to further analysis for the Stage 2 SSD approval(s).</p>	<p>Mitigation recommendations specific to managing air quality impacts would be implemented as described in Chapter 17 – <i>Local Air quality impacts</i>.</p> <p>Active communication and engagement with affected residents and businesses would be undertaken to ensure timing and duration of construction impacts are understood.</p> <p>Provision of contact details for raising concerns or complaints. Identification and implementation of response/resolution procedure.</p>
Noise and vibration	Neighbouring suburbs: Casula, Wattle Grove, Glenfield	During construction, it is expected that the local community would hear machinery movements on site for all three of the rail access options. Noise levels are predicted to be within acceptable limits.	Some residents in Casula, Wattle Grove and North Glenfield would be expected to experience changes in the background noise environment from the change in land use across the Project site. In most cases these are expected to fall within acceptable limits with mitigation.	Further analysis of all potential noise impacts would be undertaken for the Stage 2 SSD approval(s).	<p>Mitigation recommendations specific to managing noise impacts would be implemented as described in Chapter 12 – <i>Noise and vibration</i>.</p> <p>Active communication and engagement with affected residents and businesses would be undertaken to ensure timing and duration</p>

Aspect	Potential receptors	Impact		Notes	Mitigation
		Construction	Operation		
			<p>It is likely that there would be exceedance of amenity criteria for the northern rail access connection, associated with train movements to and from the site. This would be temporary but would occur up to 40 times in a 24-hour period. Night-time movements are likely to be more noticeable and, without mitigation, may trigger sleep disturbance criteria.</p>		<p>of construction impacts are understood.</p> <p>Provision of contact details for raising concerns or complaints. Identification and implementation of response/resolution procedure.</p>
Visual amenity	Residents, businesses and visitors in Casula, Wattle Grove and Glenfield	<p>For all rail access options, during construction of the Project, the local community may expect to see machinery movement on site.</p> <p>For the northern and central rail access options, areas in Casula overlooking the Project site may have views of the rail access bridges under construction. Affected receptors may include public parks and residential properties.</p>	<p>At Full Build, the areas experiencing greatest visual impact would include the public parks and residential properties overlooking the site and those residential properties backing onto the SSFL. This would be the case for all three rail access options.</p> <p>The northern and central rail access options would also allow views of the rail bridge access into the site from the suburb of Casula. Direct views over the entire operational IMT would be limited to the properties adjacent to Leacock Regional Park and Carroll Park. The operational IMT would also potentially be visible from the second storeys of a small number of</p>	<p>The lighting requirement for the Moorebank IMT would introduce a noticeable change in the brightness of the area on clear nights. Despite this, there would be no substantial change to the existing lighting environment in general terms.</p>	<p>Mitigation recommendations specific to managing visual amenity and light spill impacts would be implemented as described in Chapter 22 – <i>Visual and urban design</i>.</p> <p>Active communication and engagement with affected residents and businesses would be undertaken to ensure timing and duration of construction impacts are understood.</p> <p>Provision of contact details for raising concerns or complaints. Identification and implementation of response/resolution procedure.</p>

Aspect	Potential receptors	Impact		Notes	Mitigation
		Construction	Operation		
			<p>properties to the west of Leacocks Lane.</p> <p>Transitory lighting from train headlights on trains leaving the Project site at night would potentially affect some residential locations in Casula for the northern and central rail access options.</p>		
Economic effects	South-western Sydney economy	<p>Potential beneficial effects though engagement of the regional supply chain for the construction of the Project.</p> <p>Potential for some displacement of construction workforce from the wider region during peak construction in particular.</p>	<p>\$9 billion is expected to be accrued in economic benefits (before costs and in net present value terms), over a 30-year operational period of the Project, including \$120 million per year for the south-western Sydney economy</p>		
Employment	South-western Sydney economy	<p>Generation of around 1,247 jobs (typical workforce) during construction of the IMEX terminal and warehousing and 275 jobs (typical workforce) during the construction for the interstate terminal.</p> <p>In addition, creation and support of indirect employment in broad range of industries that would service the IMT construction staff, including construction suppliers to retail, financial services, food outlets and health services.</p>	<p>Operation of the Project is expected to generate approximately 2,174 jobs.</p> <p>Creation and support of indirect employment in broad range of industries that would service the IMT operations staff, including construction suppliers to retail, financial services, food outlets and health services.</p>		<p>Consider procurement of staff and services from local businesses both during construction and operation to further realise some of the projected regional benefits within the local employment market.</p>

Aspect	Potential receptors	Impact		Notes	Mitigation
		Construction	Operation		
Businesses	<p>Small to medium sized businesses in Casula, Wattle Grove and Glenfield.</p> <p>Construction supply chain businesses within Liverpool and neighbouring LGAs.</p>	<p>Adverse effects from traffic disruption, road closures/diversions and amenity impacts (noise, air quality, visual).</p> <p>Beneficial effects from increase in daily workforce during construction resulting in a potentially expanded customer base.</p> <p>Potential for increase in demand for construction supply chain goods and services.</p>	<p>Increase in demand and sales at local food and retail outlets from personnel working at the Project site. Potential for encouragement of local businesses (such as cafés or convenience stores) to operate closer to the Moorebank IMT.</p> <p>Potential benefits for local warehouse operators and bulky goods retailers who may be able to use the Project facilities.</p>		<p>Consider procurement of staff and services from local businesses both during construction and operation to further realise some of the projected regional benefits within the supply chain.</p>

24.5 Management and mitigation

Mitigation measures to manage impacts on traffic, transport and access, visual, air quality and noise and vibration would be implemented as described in Chapter 11 – *Traffic, transport and access*, Chapter 12 – *Noise and vibration*, Chapter 17 – *Local air quality* and Chapter 22 – *Visual and urban design*. Additional measures designed to manage and mitigate social and economic impacts are described below.

24.5.1 Early Works, construction and operational phases

The following management and mitigation measures would be employed during the Early Works, construction and operational phases of the Project:

- A Project contact phone number and website would be maintained during construction and operation to enable the community, including local business owners and/or operators, to access information on the Project and receive responses to any concerns.
- An ongoing community consultation program would be developed before the start of construction, to establish and maintain good relationships with local residents and business owners.
- A complaints line and resolution process would be set up and maintained during construction and operation.

A Citizens' Jury is developing a public benefits package to provide a direct benefit to people living near the IMT. The jury has around 20 members who were 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.

In addition, where possible, consideration will also be given to procurement of staff and services from local businesses both during construction and operation to further realise some of the projected regional benefits within the local employment market and supply chain.

24.6 Summary

The key aspects of the social and economic impact assessment are summarised below:

- Socio-economic impacts associated with the Early Works phase are anticipated to be relatively minor in nature and would include minor adverse impacts related to traffic and amenity values, and positive impacts on job generation.
- The Project is anticipated to generate employment opportunities during construction and operation – many of which would suit the local skills base. Employment opportunities would be associated with wider socio-economic benefits, including financial security, and improvements in health and wellbeing.
- No substantial shift is expected in the local demographics or population during construction or operation. There may be some potential for increase in the demand for rental properties and social infrastructure/services in the Liverpool LGA during peak periods of construction; however no substantial impact on social and community infrastructure is expected.

- Minor recreation impacts are expected, including closure of the RAE Golf Club at the southern end of the Project site, and some potential disruption during construction to activities by the NSW Barefoot Water Ski Club on the Georges River (northern rail access option only). There is also potential for the northern rail access connection to increase the visual severance between the Casula Powerhouse Arts Centre and the surrounding environment.
- No direct impacts on local businesses are predicted, although some businesses in the area may experience temporary disruptions from vehicle access to the Project and other amenity impacts. On the whole, businesses are likely to benefit from construction demand and the influx of workers to the area.

A summary of the social and economic impacts of the Project during operation of the Project at Full Build is provided in Table 24.7 for each rail access option.

Table 24.7 Summary of social and economic impacts at Full Build, without mitigation, for each rail access option

Impact	IMT layout and associated rail access connection option		
	Northern	Central	Southern
Operation of the IMT			
Minor increase in population associated with the operational workforce	•	•	•
Recreational impacts resulting from the closure of the RAE Golf Club	•	•	•
Amenity impacts (noise, traffic, visual and air) to some residents within Casula, Wattle Grove and Glenfield	•	•	•
Increased employment opportunities leading to positive socio-economic impacts such as increased income, financial security and improvements in health and wellbeing	•	•	•
Positive economic impacts to local business (resulting from increase in demand and sales)	•	•	•
Improved freight transport efficiency leading to flow on benefits for regional and national economy	•	•	•
Operation of the rail access connection			
Recreational impacts resulting in the use of public recreation land (LCC land)	•	-	-
Increase in the visual severance between the Casula Powerhouse Arts Centre and the surrounding environment	•	-	-
Amenity impacts (noise, visual and air) to some residents in Casual, Wattle Grove and Glenfield	•	•	•
Visual impacts to public parks and residential properties, backing onto the SSFL	•	•	•

Key: • = impact, - = no impact

Key measures proposed to avoid, manage and/or mitigate property and infrastructure impacts include:

- a Project contact phone number and website during Early Works, construction and operation to enable the community (including businesses) to access information on the Project and receive responses to any concerns;
- an ongoing community consultation program to establish and maintain a good relationship with local residents and business owners; and
- a complaints line and resolution process during construction and operation.