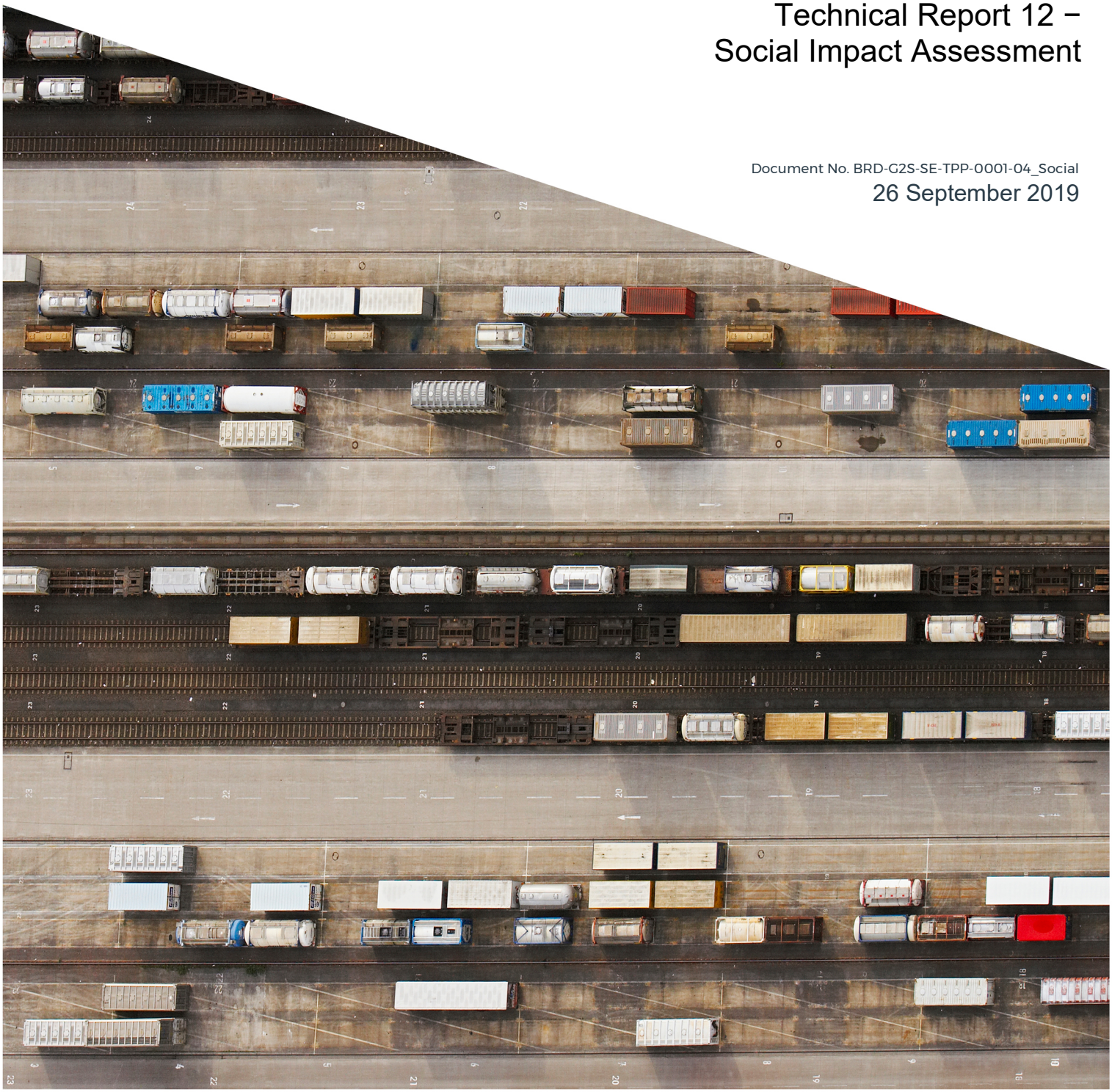
BOTANY RAIL DUPLICATION

TECHNICAL REPORT

Technical Report 12 –
Social Impact Assessment

Botany Rail Duplication - Environmental Impact Statement

Technical Report 12 – Social Impact Assessment



Document No. BRD-G2S-SE-TPP-0001-04_Social
26 September 2019

Document information

Client: Australian Rail Track Corporation
Title: Botany Rail Duplication – Environmental Impact Statement
Subtitle: Technical Report 12 – Social Impact Assessment
Document No: BRD-G2S-SE-TPP-0001-04_Social
Date: 26 September 2019

Rev	Date	Details
Final	26/09/2019	Final for exhibition

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Distribution

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Glossary

amenity and character	The noise, air quality, and visual amenity of the area provide for the enjoyment of residents and create a recognisable and distinctive character (Wood et al., 2008).
Botany Line	A dedicated freight rail line (operated by ARTC) that forms part of the Metropolitan Freight Network. The line extends from near Marrickville Station to Port Botany.
community cohesion	Social or community cohesion generally refers to the complex set of social characteristics that contribute to how well society functions, including people's trust in their fellow community members, their sense of belonging in the community and their willingness to help each other. While community cohesion is an outcome of the interaction of many social characteristics, the following facets have been considered in this social impact assessment: ▪ the presence of social order (such as lack of crime and conflict) ▪ feelings of safety and trust in the community ▪ equitable economic and social development (such as lack of disparities in socio-economic conditions and appropriate services for those who are socio-economically disadvantaged). Social networks and social capital (such as social interactions within the community and civic engagement).
community infrastructure	Community infrastructure are spaces that accommodate facilities and services, which support individuals, families and groups to meet their social needs, maximise their potential, and enhance community wellbeing. Within this report, the following community infrastructure facilities have been included: education and child care facilities, accommodation facilities, aged care, health centres and services, disability services, youth and community spaces, religious facilities, indoor and outdoor sport and recreation, and passive open space such as parks and gardens.
community values	Community values, or a sense of community, are generally accepted to be the social ties established within a community, in part based around the features and qualities of the built environment that encourage these social ties and contribute to quality of life and wellbeing (Maller & Nicholls, 2014; Paranagamage, Austin, Price, & Khandokar, 2010).
connectivity	People have the ability to move through their community and access a range of places in and outside their community safely and conveniently (Paranagamage et al., 2010).
construction compound	An area used as the base for construction activities, usually for the storage of plant, equipment and materials, and/or construction site offices and worker facilities.
demography	The range of different groups existing in a particular populace, as distinguished by factors such as age, ethnicity and social background.
existing rail corridor	The corridor within which the existing rail infrastructure is located. In the study area, the existing rail corridor is the Botany Line.
household	One or more persons usually resident in the same dwelling (ABS, 2016b).
impact	Influence or effect exerted by a project or other activity on the natural, built and community environment.
neighbourhood	In the context of this SIA, neighbourhood means an area that is considered to be within a comfortable walking distance (around 500 m) from a person's place of residence or work. What is defined as a neighbourhood would be subjective to each individual.

possession	A period of time during which a rail line is closed to train operations to permit work to be carried out on or near the line.
project site, the	The area that would be directly affected by construction. It includes the location of operational project infrastructure, the area that would be directly disturbed by the movement of construction plant and machinery, and the location of the storage areas/compounds etc that would be used to construct that infrastructure.
project, the	The construction and operation of the Botany Rail Duplication.
resident	In the context of this SIA, resident refers to people living in the area.
Secretary's environmental assessment requirements	Requirements and specifications for an environmental assessment prepared by the Secretary of the Department of Planning and Environment under section 115Y of the *Environmental Planning and Assessment Act 1979* (NSW).
stakeholder	Person or group affected by or concerned with an issue.
State significant infrastructure	Major transport and services infrastructure considered to have State significance as a result of size, economic value or potential impacts.
study area, the	The study area is defined as the wider area including and surrounding the project site, with the potential to be directly or indirectly affected by the project (e.g. by noise and vibration, visual or traffic impacts). The actual size and extent of the study area varies according to the nature and requirements of each assessment and the relative potential for impacts but which is sufficient to allow for a complete assessment of the proposed project impacts to be undertaken.
vulnerable group	The inability of people to withstand or adapt to change due to characteristics of the group they are a part of. This report considers the following groups: socio-economically disadvantaged persons as identified by the Index of Relative Socio-Economic Advantage and Disadvantage, the elderly and very young, culturally and linguistically diverse people, people who need assistance with core activities such as self-care, movement and communication due to a severe or profound disability.

Abbreviations

ABS	Australian Bureau of Statistics
ARTC	Australian Rail Track Corporation (the proponent)
CBD	Central business district
Council, the	Bayside Council
DDA	*Disability Discrimination Act 1992* (Commonwealth)
DPE	Department of Planning and Environment
EIS, the	Botany Rail Duplication environmental impact statement
EP&A Act	*Environmental Planning & Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
LGA	local government area
NSW	New South Wales
SEARs	Secretary's environmental assessment requirements
SIA	Social impact assessment

Executive summary

Australian Rail Track Corporation (ARTC) propose to construct and operate a new second track within the existing Botany Line rail corridor between Mascot and Botany, in the Bayside local government area (LGA). The Botany Rail Duplication ('the project') would increase freight rail capacity to Port Botany.

This Social Impact Assessment (SIA) has been prepared for the project. The purpose of this report is to assess the potential social impacts from the construction and operation of the project. This SIA addresses the relevant environmental assessment requirements of the Secretary of the Department of Planning and Environment (the SEARs) and agency recommendations. The report:

- identifies the social area of influence including local government area (LGA), suburbs, communities and community infrastructure likely to be affected by the project, as informed by engagement with the community and key stakeholders
- describes the existing social environment of the study area with particular reference to the project location and construction and operational activities of the project, to establish an existing social environment by which potential social impacts could be predicted
- identifies and predicts the potential benefits and impacts of the project on the study area communities and community infrastructure
- recommends mitigation measures to avoid or minimise potential adverse impacts and maximise benefits to the stakeholders and communities.

Existing social environment

The project is located in Bayside LGA. The LGA is one of the fastest growing areas of Sydney, with suburbs in the LGA experiencing significant recent population growth. Bayside LGA contains diverse land uses, including Botany Wetlands, Port Botany, and Sydney Airport. Residential areas in the LGA have developed around these dedicated land uses, resulting in the interface between residential and industrial areas in some parts of the LGA. This is particularly noticeable in the residential areas close to industries that require 24-hour access, such as Port Botany and Sydney Airport, and their supporting infrastructure.

Sydney Airport and Port Botany are also key employment areas for the wider Sydney region. To support this industry, the area features a number of key roads which provide important connectivity for commuter traffic, freight and airport related activity, as well as community and local resident access to destinations to other parts of Greater Sydney.

The closest suburbs to the project are Mascot, Pagewood and Botany. Mascot and Botany feature a mix of residential, commercial and industrial areas, whilst Pagewood is primarily residential. In recent years, Mascot has experienced increasing levels of high density development, particularly in areas close to Sydney Airport and Mascot Train Station.

Mascot has a high proportion of culturally and linguistically diverse people living in the suburb, where Pagewood has high levels of people living in social housing, as well as a slightly higher proportion of people who identify as needing assistance. Both Pagewood and Botany have a high proportion of households occupied by couples with children, and single parents with children.

Community infrastructure near the project is primarily pocket parks and larger recreation spaces, including golf courses. The area also contains a high number of accommodation facilities (hotels), due to the proximity of the project to Sydney Airport.

Stakeholder consultation

Engagement with community was undertaken between May and June 2019. The key issues raised by community members across the engagement activities focused on:

- increased noise as a result of construction activities and additional freight trains in operation
- increased vibration, with some residents indicating they currently experience vibration from passing freight trains
- land required for acquisition to accommodate the project.

Impact assessment

Key findings – construction

Social benefits that may result from the construction of the project include an increase in construction related employment opportunities. This increase in workforce in the local area may also lead to an increase in expenditure at local business.

Social impacts that may result from the construction of the project include:

- disturbance on day to day activities and sleep for nearby residences and local businesses due to an increase in noise and vibration from construction activities
- changes to the way of life for some residents, such as closing windows of houses or vehicles and spending less time outdoors, due to an increase in dust
- temporary increases in travel times for people's daily commutes as a result of construction traffic or access arrangements, which would likely reduce the time people can spend with families, undertake leisure activities and cause delays in getting to work or other appointments
- changes to pedestrian access routes, which may deter some people, particularly vulnerable groups such as people who need assistance, from taking usual routes or making certain trips
- impacts to the amenity, and in some cases use of, community facilities adjacent to the project site, which could reduce the enjoyment for some users particularly for passive and leisure activities.

Key findings – operation

Social benefits that may result from the operation of the project include:

- the indirect benefit to business owners and employees in the Greater Sydney region as a result of increased rail freight efficiency, which could lead to increased productivity and increased income generation
- less congestion on the road network due to reduced freight movements made by trucks, which may improve connectivity to various destinations for personal and business purposes.

The primary social impact from the operation of the project is the increased noise and vibration generated by train movements, which may be a nuisance and potentially lead to sleep disturbance for some local residents.

Key findings – cumulative

Social benefits from the concurrent construction of the project with other major projects, include the increased demand for construction workforce, as well as a potential increased expenditure from the additional workforce at local businesses in the area.

Should the construction of occur concurrently with other major developments in the local area, the local community may be experience the following construction impacts:

- increased noise and vibration on residential properties and accommodation (particularly for development associated with Sydney Airport and the Sydney Gateway road project, which are in close proximity to the project) which could lead to further nuisance and annoyance felt by these residents
- increased occurrence of delays on roads due to combined construction vehicle movements affecting road users on the local road network, which could lead to further inconvenience and require users to allow for more travel time for their trips through the local study area
- fatigue from concurrent construction activities in the area, which may lead to an increased feeling of inconvenience and nuisance.

Social benefits from the concurrent operation of the project with other major developments include:

- increased connectivity due to the improved local road network, as well as a decrease in traffic congestion due to reduced freight truck movements from Port Botany
- increased freight efficiency to both Sydney Airport and Port Botany, which would benefit industries across Greater Sydney.

1. Introduction

1.1 Overview

1.1.1 Background

Australian Rail Track Corporation (ARTC) propose to construct and operate a new second track within the existing Botany Line rail corridor between Mascot and Botany, in the Bayside local government area (LGA). The Botany Rail Duplication ('the project') would increase freight rail capacity to and from Port Botany. The location of the project is shown in Figure 1.1.

The project is State Significant Infrastructure in accordance with Division 5.2 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). As State significant infrastructure, the project needs approval from the NSW Minister for Planning and Public Spaces.

This report has been prepared to accompany the Environmental Impact Statement (EIS) to support the application for approval of the project, and address the of the Secretary of the Department of Planning and Environment's environmental assessment requirements (the SEARs), issued on 21 December 2018.

1.1.2 Overview of the project

The project would involve:

- Track duplication – constructing a new track predominantly within the rail corridor for a distance of about three kilometres.
- Track realignment (slewing) and upgrading – moving some sections of track sideways (slewing) and upgrading some sections of track to improve the alignment of both tracks and minimise impacts to adjoining land uses.
- New crossovers – constructing new rail crossovers to maintain and improve access at two locations (totalling four new crossovers).
- Bridge works – constructing new bridge structures at Mill Stream, Southern Cross Drive, O'Riordan Street and Robey Street (adjacent to the existing bridges), and re-constructing the existing bridge structures at Robey Street and O'Riordan Street.
- Embankment/retaining structures – construction of a new embankment and retaining structures adjacent to Qantas Drive between Robey and O'Riordan streets and a new embankment between the Mill Stream and Botany Road bridges.

Further information on the key elements of the project is provided in the EIS.

Ancillary work would include bi-directional signalling upgrades, drainage work and protecting/relocating utilities.

Subject to approval of the project, construction is planned to start at the end of 2020, and is expected to take about three years for the main construction works to be undertaken. Construction is expected to be completed in late 2023 with commissioning activities undertaken in early 2024.

It is anticipated that some features of the project would be constructed while the existing rail line continues to operate. Other features of the project would need to be constructed during programmed weekend rail possession periods when rail services along the line cease to operate.

The project would operate as part of the existing Botany Line and would continue to be managed by ARTC. ARTC is not responsible for the operation of rolling stock. Train services are currently, and would continue to be, provided by a variety of operators. Following the completion of works, the existing functionality of surrounding infrastructure would be restored.

Key features of the project are shown on Figure 1.2.

Figure 1.1 Botany Rail Duplication location

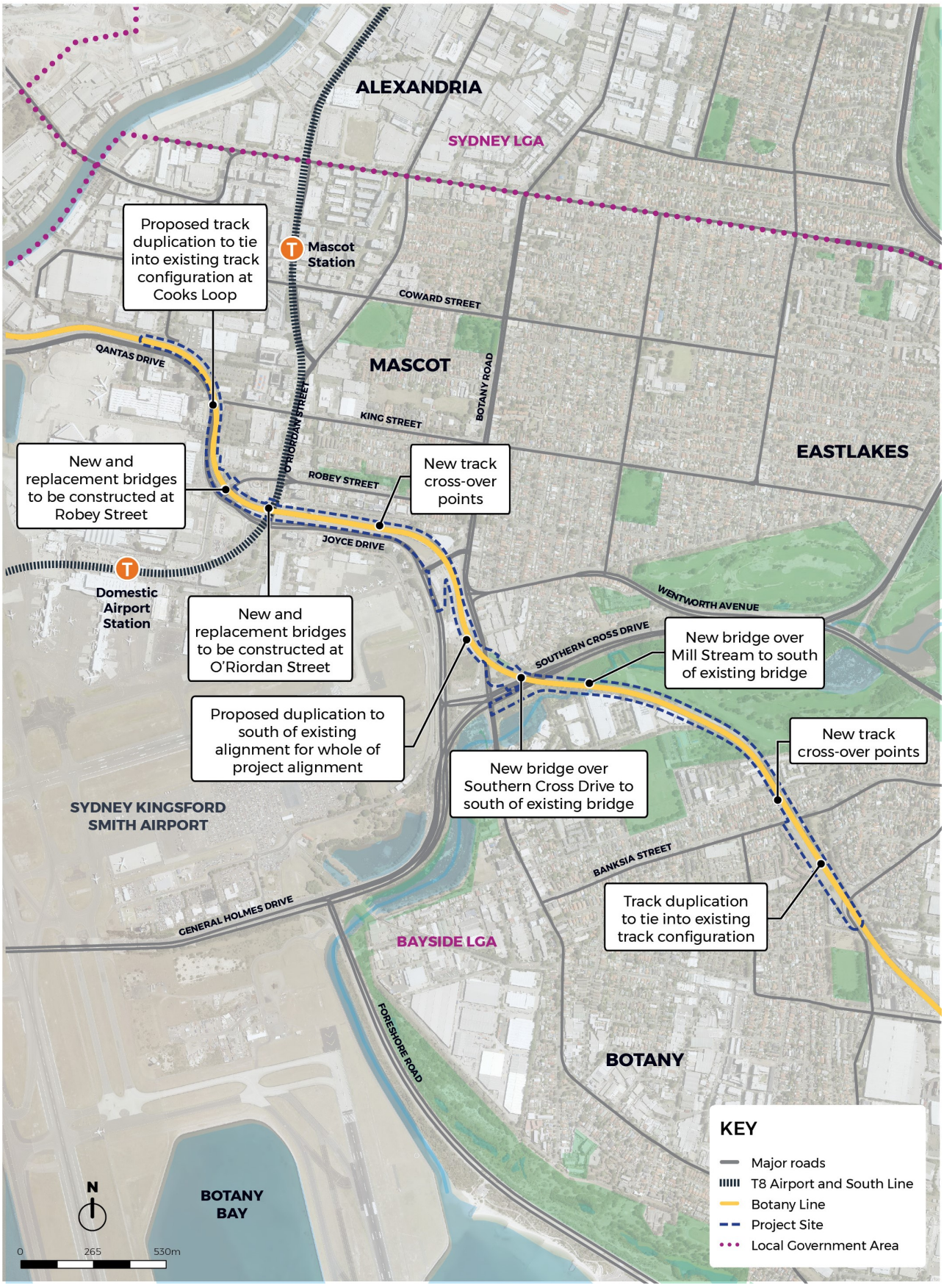

Figure 1.2 Botany Rail Duplication project overview

1.2 Purpose and scope of this report

The purpose of this report is to assess the potential social impacts from the operation and construction of the project. This Social Impact Assessment (SIA) addresses the relevant SEARs for the EIS, as outlined in Table 2.4. The Department of Planning and Environment's (DPE) *Social Impact Assessment Guideline for State significant mining, petroleum production and extractive industry development (2017)* has been considered throughout the preparation of this report.

This report documents the process, findings and outcomes of the SIA for design, construction and operation phases. This report:

- identifies the social area of influence including local government area (LGA), suburbs, communities and community infrastructure likely to be affected by the project, as informed by engagement with the community and key stakeholders (referred to as the 'study area' – refer Section 4.4)
- describes the existing social environment of the study area with particular reference to the project location and construction and operational activities of the project, to establish an existing social environment by which potential social impacts could be predicted
- identifies and predicts the potential benefits and impacts of the project on the study area communities and community infrastructure
- recommends mitigation measures to avoid or minimise potential adverse impacts and maximise benefits to the stakeholders and communities.

1.3 Structure of this report

The structure of the report is outlined below.

- Section 1 Introduction – provides an introduction to the report.
- Section 2 Legislative and policy context – describes the legislative and policy context for the assessment.
- Section 3 Methodology – describes the methodology for the assessment, including the relevant guidelines and principles.
- Section 4 Existing social environment – describes the existing social environment of the project location and surrounds.
- Section 5 Outcomes of consultation – summarises the outcomes from consultation relevant to this assessment.
- Section 6 Impact assessment – assesses the construction, operation and cumulative social impacts.
- Section 7 Management of impacts – provides recommended mitigation measures to manage potential social impacts.
- Section 8 Conclusion – provides a conclusion to the report.

2. Legislative and policy context

This section summarises the legislation, guidelines and policies driving the approach to the assessment.

2.1 Relevant legislation, policies and guidelines

2.1.1 Australian Government legislation and policies

Table 2.1 shows Australian Government legislation and policies that are relevant to the project area and this SIA.

Table 2.1 Australian Government legislation and policies relevant to this SIA

Legislation or policy	Relevance to this SIA
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Australian Government Department of the Environment and Energy and provides a legal framework to protect and manage nationally important flora, fauna, ecological communities and heritage places defined as 'matters of national environmental significance'. Under the EPBC Act, proposed actions (i.e. activities or projects) with the potential to significantly impact matters protected by the EPBC Act must be referred to the Australian Minister for the Environment to determine whether they are controlled actions, requiring approval from the Minister. The following matters are defined as protected matters by Part 3 of the EPBC Act: ■ matters of national environmental significance ■ the environment of Commonwealth land ■ the environment in general if they are being carried out by an Australian Government agency.
Disability Discrimination Act 1992 (Commonwealth)	The *Disability Discrimination Act 1992* (Commonwealth) is designed to protect people with disability from discrimination. This SIA considers the changes to the existing environment that may affect accessibility.
Infrastructure Priority List (Department of Infrastructure, 2019)	The project is categorised as a high priority initiative in the *Infrastructure Priority List*. The projects will aid in increasing national freight connectivity, as well as reducing urban congestion through Eastern Sydney and over other trade corridors. The Infrastructure Priority List identifies that the current, single-line freight network has the potential to cause congestion in the freight network, and reduce reliability across the national network. These potential changes to the economy and employment at a local and regional level are relevant to this SIA.
Australian Infrastructure Plan (Infrastructure Australia, 2016)	The *Australian Infrastructure Plan* makes recommendations about Australia's national infrastructure and connectivity. One of the challenges faced in Australian cities is population growth with increased demand on freight and transport infrastructure, resulting in delays and congestion to road users. Increased travel times for commuters results in lost productivity in work and social life. Recommendations made in the Plan highlight the need for increased efficiency and connectivity of Port Botany with the regional and national freight network. Infrastructure improvements can create opportunities for economic growth and development, and connect people to jobs, services and social opportunities. This SIA considers community connectivity.

2.1.2 NSW legislation and policies

Table 2.2 shows NSW legislation and policies relevant to this SIA.

Table 2.2 NSW legislation and policies relevant to this SIA

Legislation and policy	Relevance to this SIA
Greater Sydney Region Plan: A Metropolis of Three Cities – connecting people (Greater Sydney Commission, 2018)	Port Botany is located in the Eastern region of Greater Sydney, and is highlighted as a key trade centre within the eastern economic corridor. The Plan proposes to extend both Port Botany and Sydney Airport trade centres out to Greater Sydney through dedicated road and rail trade networks. The dedicated freight rail connection from Port Botany to the Western Parkland City will be key to the increase in proportion of freight moved by rail. This will likely increase the economic potential and development of surrounding industrial precincts in the Greater Sydney Region, providing community with increased access to job opportunities. This plan is used to provide context of the existing social environment in this SIA.
Eastern District Plan – connecting communities (Greater Sydney Commission, 2018)	The *Eastern District Plan* emphasises the importance of Port Botany as a trade gateway within the Eastern Economic Corridor. The plan states that the planning and design of communities should take a balanced approach to minimising the negative impacts of freight movements and support more efficient freight movements. The plan recognises that Port Botany is a significant tract of employment land, and provides local and regional job opportunities. The Botany Wetlands are also identified as an important open space corridor for flora and fauna. This plan is used to provide context of the existing social environment in this SIA.
Future Transport Strategy 2056 (2018)	The Strategy highlights the importance of the Sydney transport network to achieve a productive economy, particularly in relation to trade networks and the connection of land, air and sea. Increasing the efficiency and capacity of these intermodal networks is a strategic focus for the Sydney transport sector to continue to support large concentrations of workers. The Strategy also notes the importance of active transport networks to health, wellbeing and the environment. The Strategy notes improvements that can be made to improve these networks, such as the provision of safe and accessible footpaths, pedestrian crossing, separated cycling paths, and end of trip facilities. This SIA considers benefits related to employment and any changes to active transport networks as a result of the project.
'Navigating the Future' NSW Ports' 30 Year Master Plan (NSW Ports, 2015)	The *NSW Port's 30 Year Master Plan* outlines areas of growth and actions required to meet the needs of NSW over the next 30 years with a long-term sustainability focus. The plan notes that Port Botany operates in an urban environment, and that adjacent communities can be impacted by its operation. A priority of NSW Ports is to continue to involve the community in the Port's planning and operation in order to develop the best outcomes for both the community and NSW Ports. This commitment will be directly relevant to the outcomes of this SIA.
NSW Freight and Ports Plan 2018–2023 (Transport for NSW, 2018)	Port Botany is highlighted as a key centre for NSW's trade and economy. A key action will be to boost the efficiency of the rail network and trade gateway to Port Botany. Planning for freight and logistics uses and infrastructure will need to balance the needs of the freight industry with local communities, including aims to improve community amenity and ways to minimise negative impacts on local communities. The goal is to increase the share of rail freight connecting to Port Botany from 19 percent to 28 percent by 2021. This will reduce congestion on the roads, particularly surrounding the Port and Airport. A reduction in congestion could lead to positive social outcomes as a result reduced travel times for road users. This will be assessed as part of this SIA.
Building Momentum – NSW State Infrastructure Strategy 2018–2038 (	The State Infrastructure Strategy states that the project is key to reducing the freight related congestion on Sydney's Roads, and increasing the connectivity and speed of trade between the Eastern Harbour City, and Sydney's Western CBD. The Strategy notes the benefits that would be experienced by the local and regional road users, as well as the economic benefit of increased freight capacity. This SIA considers the overall economic benefits resulting from this project.

2.1.3 Local government policies

Table 2.3 outlines the local government policies that are relevant to this SIA.

Table 2.3 Local government policies relevant to this SIA

LGA	Policy	Relevance to this SIA
Bayside Council	*Bayside Council Community Strategic Plan 2018–2030*	The Plan highlights that maintaining the industrial centres of Port Botany and Sydney Airport are important for the future of the LGA. Ease of transport connectivity, both within the LGA and externally will be a primary focus for the council, who will work with Transport for NSW to make transport accessible for workers and residents of the area. The Plan states that efficient transport will attract diverse business and skilled employees. Growth in services to the local community will generate social benefits such as increased employment, a thriving community and livelihoods. The plan is used to understand the existing social environment and the values of the community, which are important for the baseline of this SIA.
Bayside Council	*Delivery Program 2018–2021 and Operational Plan 2018–2019*	The Plan highlights the employment opportunities and economic development through the Port Botany and Airport corridor. The Council aims to provide advocacy and representations on traffic issues in the local area, and freight movements associated with the development and operations of Port Botany and the Airport. These issues are considered as part of this SIA.
Former City of Botany Bay (now Bayside Council)	*The Botany Bay Planning Strategy 2031* (2009)	The Planning Strategy identifies principles relevant to this SIA, including: ■ enhance existing urban character, improve amenity and protect areas of cultural and environmental significance ■ contain and intensify Sydney Airport and Port related activities around these economic nodes ■ separate regional and local traffic, rail and road movements.

2.2 Secretary's environmental assessment requirements

The SEARs relevant to this SIA, together with a reference to where they are addressed in this report, are outlined in Table 2.4.

Table 2.4 SEARs relevant to this assessment

Requirements	Where addressed in this report
3. Assessment of Key Issues (2) For each key issue the Proponent must:	
a) describe the biophysical and socio-economic environment, as far as it is relevant to that issue;	Section 4
b) describe the legislative and policy context, as far as it is relevant to the issue;	Section 2.1 provides an overview of relevant legislation and policy.
c) identify, describe and quantify (if possible) the impacts associated with the issue, including the likelihood and consequence (including worst case scenario) of the impact (comprehensive risk assessment), and the cumulative impacts;	Section 6 assesses the social impacts associated with the project, including the likelihood and consequence of them occurring.
d) demonstrate how options within the project potentially affect the impacts relevant to the issue;	Section 6 assesses the social impacts associated with the different options within the project.
e) demonstrate how potential impacts have been avoided (through design, or construction or operation methodologies);	Section 7.1 identifies mitigation measures through construction and operation of the project
f) detail how likely impacts that have not been avoided through design will be minimised, and the predicted effectiveness of these measures (against performance criteria where relevant); and	Section 7 identifies mitigation measures.
g) detail how any residual impacts will be managed or offset, and the approach and effectiveness of these measures.	Section 7 identifies methods to manage residual impacts through mitigation measures.
13. Socio-economic, Land Use and Property (1) The Proponent must assess social and economic impacts in accordance with the current guidelines. (2) The Proponent must assess impacts from construction and operation on potentially affected properties, infrastructure, businesses, recreational users and land and water users, including utility operations, property acquisitions/adjustments, access, amenity and relevant statutory rights.	This document aims to assess the social impacts in accordance with the current guidelines. Section 2.1 outlines the approach to the SIA, including applicable guidelines that were used to inform the SIA process. Section 6.1.1 (construction) and Section 6.2.1 (operation) assess social impacts of changes to employment and economy as a result of impacts to businesses by the project. This has been informed through a review of the Port Botany Duplication Development Phase Project Proposal Report (ARTC, 2018). Section 6.1 (construction) and Section 6.2 (operation) assess the impacts on: residential properties and properties that provide a community use or function; employment, community infrastructure users, and residential and community user amenity and access. Refer to EIS Chapter 17 – Land Use and Property for assessment of impacts to land occupied by businesses, infrastructure, utility operations, property acquisitions/adjustments.

3. Methodology

This section describes the methodology used to undertake this SIA.

3.1 Approach to the SIA

The SIA has been prepared in accordance with the requirements of the SEARs and the following guidance:

- *Social Impact Assessment Guidelines for State significant mining, petroleum production, and extractive industry development* (Department of Planning and Environment (DPE), 2017)
- *Environmental Impact Assessment Practice Note: Socio-economic assessment* (Roads and Maritime Services, 2013)
- *Environmental Planning and Assessment Act 1979.*

Consideration has also been given to the SIA principles and methods endorsed by the International Association for Impact Assessment (Vanclay, 2003 and Vanclay F, et al, 2015).

3.1.1 Defining social impacts

Social impacts are defined by the NSW Department of Planning and Environment (2017) as a consequence experienced by people, due to changes associated with a State significant project. As per DPE's *Social Impact Assessment Guidelines for State significant mining, petroleum production, and extractive industry development* (2017), and the International Association for Impact Assessment's *International Principles for Social Impact Assessment* (Vanclay, F. 2003), social impacts can involve changes to how people experience and perceive:

- **way of life**, including:
  - how people live (e.g. how they get around)
  - how people work (e.g. access to adequate employment)
  - how people play (e.g. access to and use of community infrastructure facilities)
  - how people interact with each other day to day
- **community**, including its composition, character, cohesion, sense of place and how it functions
- **access to and use of community infrastructure, services and facilities**, whether provided by local, state or federal governments, or by for-profit or not-for-profit organisations or volunteer groups
- **culture**, including shared beliefs, customs, values and stories, and connections to land, places and buildings (including Indigenous culture and connection to country)
- **health and wellbeing**, including both physical and mental health
- **surroundings**, including access to and use of ecosystem services, public safety and security, access to and use of the natural and built environment and its aesthetic value and amenity
- **personal and property rights**, particularly whether people are economically affected, or experience personal disadvantage which may include violation of civil liberties
- **decision-making systems**, particularly the extent to which they can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms
- **fears and aspirations**, related to one or a combination of the above, or about the future of their community.

3.2 Key tasks

This section describes the key tasks that were undertaken to prepare the SIA.

3.2.1 Reviewing the project description

A thorough review of the project description was undertaken to determine the scope and extent of the potential social impacts with reference to potential changes to local amenity, access and connectivity, community infrastructure facilities and community values. The review was also informed by the outcomes of the various Technical Reports that have been prepared for the project (refer to Section 3.2.5).

3.2.2 Determining the study area

The project site and its surrounds were analysed to identify the study area for this SIA. The study area is based on consideration of the communities that live, work and visit this area are therefore considered most likely to be impacted by the project. The study area includes:

- the local government area of Bayside
- the local study area which comprises the following suburbs intersected by the project site:
  - Mascot
  - Pagewood
  - Botany.

The local study area is shown in Figure 3.1. Figure 3.2 shows the project site in relation to the study area.

0 500 1,000 m

Scale 1:26,000

Author: David Naiken
Date: 9/05/2019
Map no: PS109315_GIS_142_A4

- Major roads
- Rail Design
- Local Study Area
- Construction Footprint Boundary
- Commonwealth Land Boundaries
- Suburb
- Local Government Area

Construction Areas

- ACM Boundary
- Crane Pads
- Materials Storage
- Night Construction Area
- Parking
- Ramp
- Site Compound
- Temporary Crane Zone
- Turning Bay

Figure 3-1

Study Area Map

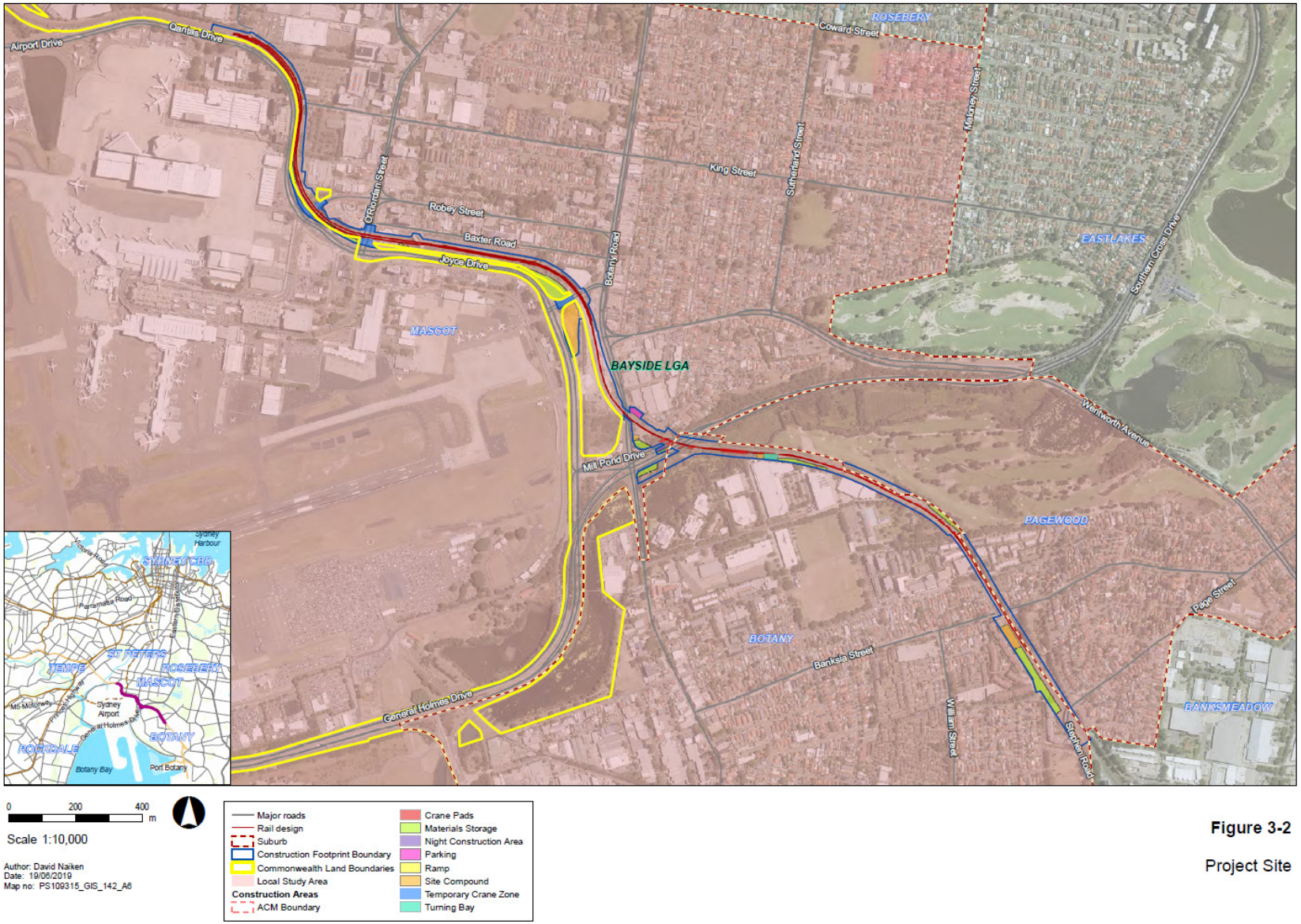

Figure 3-2

Project Site

3.2.3 Preparing a study of the existing social environment

A study of the existing social environment is required to understand the existing conditions of the communities in the study area that may be potentially affected by the project. This study provides the basis for predicting the likely social impacts of the project on these communities. The existing social environment is described with reference to:

- an overview of the Bayside LGA including description of the area, population characteristics and projects in the surrounding area
- the demographic profile of the local study area (Mascot, Pagewood and Botany) compared to Bayside LGA and Greater Sydney, including age profile, cultural diversity, income and employment and need for assistance for core daily activities
- community values including factors contributing to their quality of life and wellbeing, including physical elements such as the public domain, transport connectivity and journey times, and intangible qualities such as sense of place, community cohesion, and attachment to place
- community infrastructure facilities including both the physical infrastructure (such as community facilities) and the non-physical infrastructure (such as services, programs and networks) which help individuals and communities to meet their social needs and enhance community wellbeing, or have been identified as having social value or importance.

It is noted that Bayside LGA was formed in September 2016 following the amalgamation of the former Rockdale and Botany Bay LGAs. As this amalgamation occurred after the 2016 Census in August of that year, demographic data for Bayside LGA was not available from the Australian Bureau of Statistics at the time this report was prepared. As a result, the demographic data for the two former LGAs was aggregated for the purpose of this report.

Community infrastructure facilities within 500 metres of the project have been identified using online searches and are limited to those identified on Google maps. The following community infrastructure facilities are included in this report: education and child care facilities, aged care, accommodation facilities, health centres and services, disability services, youth and community spaces, religious facilities, indoor and outdoor sport and recreation, and passive open space such as parks and gardens. This SIA has assessed the potential social impacts to staff and users of community infrastructure facilities only.

A site visit of the study area was conducted by the SIA team on 16 October 2018 to confirm the location of residential and community uses within proximity of the project.

Information required to describe the existing environment was sourced from:

- Australian Bureau of Statistics Census 2016 (ABS 2016 Census)
- web sources such as Profile .id and Council's website
- Department of Planning and Environment population projections (2016)
- relevant council community plans, strategies and studies
- Geographical information system, Google maps and images.

Specific reference to desktop information sources can be found in Section 9.

3.2.4 Reviewing outcomes of relevant stakeholder consultation activities

The outcomes of stakeholder consultations detailed in Chapter 4 of the EIS have been reviewed and incorporated into this SIA. Consultation for the EIS was conducted by ARTC in June 2019. Section 5.1 outlines the consultation activities carried out and the issues raised that are relevant to a SIA and have been considered in this assessment.

In addition, outcomes of consultation for other projects in the study area have also been reviewed, including engagement conducted for the Sydney Airport Master Plan 2039 (Sydney Airport 2019). These are discussed in Section 5.2.

3.2.5 Impact identification and assessment

This SIA identifies and assesses the potential social benefits and impacts of the project. Social impacts have been identified and described based on the initial scoping of potential social issues from reviewing the project description, results of stakeholder consultation, and review of other technical studies and chapters prepared for the EIS including:

- *Technical Report 1 – Traffic and Transport Impact Assessment*
- *Technical Report 2 – Noise and Vibration Impact Assessment*
- *Technical Report 3 – Air Quality Impact Assessment*
- *Technical Report 11 – Landscape and Visual Impact Assessment*
- *Technical Report 13 – Health Impact Assessment.*

Social impacts as a result of construction and operation of the project have been assessed. In addition, cumulative impacts as a result of concurrent construction or operation with other major developments in the surrounding area have been assessed. The social impact categories used as the basis for the assessment are outlined in Table 3.1.

Table 3.1 Social impact categories

Social impact category	Relevance to the assessment
Employment and economy	Social impacts of changes to employment and economy as a result of impacts to businesses by the project.
Amenity	Changes to the acoustic, air quality or visual environment as a result of the project. Changes to amenity can impact people's way of life. This report has considered social impacts on residents, general community members and users of accommodation facilities.
Access	Changes to how people move about an area for personal or business purposes. Changes to access can impact people's way of life, access to and use of community services, facilities and social networks, community cohesion, and perceptions about safety.
Community infrastructure	Changes that relate to community infrastructure facilities in the study area, including changes to the types or availability of community services and facilities to users, and changes to access and amenity that may affect the function of the facility. This also considers changes to community wellbeing or social cohesion of the area as a result of impacts on community infrastructure and users.

The social impacts were assessed against a set of criteria relating to the nature, type, duration, and level of impact. These criteria are detailed in Table 3.2 and have been prepared by GHD according to the documents identified in the approach to this SIA (discussed in Section 3.1).

Table 3.2 Social impact assessment criteria

Criteria	Definition
Nature	**Positive** – Impacts that result in net benefits for the community. **Negative** – Impacts that result in detriments for the community or specific stakeholder groups. **Neutral** - A change that does not result in a positive or negative impact but allows continuation of the usual function.
Type of impact	**Direct** – Impacts resulting directly from socio-economic changes caused by the project. **Indirect –** Impacts which occur firstly in the biophysical environment caused by the project.
Duration	**Temporary** – less than one year. **Short-term** – one year or more and less than five years. **Medium-term** – five years or more and less than 10 years. **Long-term** – 10 years or more.

Criteria	Definition
Project phase	**Design** – detailed design **Enabling works construction** –refer to Section 7.2 of the EIS for details **Main works construction** – refer to Section 7.2 of the EIS for details. **Operation** – when project is in use.
Level of impact	**Negligible** – Marginal change from the baseline conditions so no discernible effect is expected and a function recovery occurs within several months. **Minor** – A small but measurable change from the baseline conditions. Changes are expected to be temporary and/or only affect a small number of people. Functional recovery is expected within two years. **Medium** – Noticeable and relatively substantial change from the baseline conditions. Changes may be longer term or temporary and affect a large number of people. A functional recovery is expected within five years. **Major** – A change fundamentally altering the baseline conditions in the community and affecting a large number of people, and/or a moderate number of people over the long-term. A functional recovery is expected to take more than 10 years, if at all.

The assessment of level of impact within this SIA has considered the implementation of recommended mitigation measures as outlined in Section 7, and those identified in other technical reports reviewed for this SIA as described in Section 3.2.6. Positive social impacts identified within this SIA have not been assigned a significance rating.

Health impacts as a result of the project are assessed in *Technical Report 13 – Health Impact Assessment*. References to this document have been provided within this SIA, where relevant.

3.2.6 Developing impact mitigation measures

Specific mitigation measures developed to avoid or minimise the social impacts are identified in Section 7. These were developed based on the findings of the existing social environment study and results of stakeholder consultation, and the outcomes of the impact assessment.

Other technical studies from the EIS are referenced to acknowledge mitigation measures developed under these technical disciplines that are also relevant to mitigating social impacts, related to:

- *Technical Report 1 – Traffic and Transport Impact Assessment*
- *Technical Report 2 – Noise and Vibration Impact Assessment*
- *Technical Report 3 – Air Quality Impact Assessment*
- *Technical Report 11 – Landscape and Visual Impact Assessment*
- *Technical Report 13 – Health Impact Assessment.*

4. Existing social environment

4.1 Introduction

This section analyses the existing social environment of the communities in the study area that may be potentially affected by the project. This review has been undertaken in accordance with the social baseline study requirements identified in *Social Impact Assessment Guidelines for State significant mining, petroleum production, and extractive industry development* (DPE 2017). This section provides an overview of the Bayside LGA and local study area as defined in Section 3.2.2, including description of the area, demographic characteristics, community values and summary of the community infrastructure facilities within 500 metres of the project site that have the potential to be directly or indirectly affected by the project.

The local communities' values are also discussed to provide an understanding of what the communities perceive as important contributors to their quality of life and wellbeing. These can include physical elements such as the public domain and the desire to spend time within it, parks, transport connectivity and journey times, and intangible qualities such as sense of place, community cohesion, and attachment to place.

4.2 Social context of Bayside local government area

4.2.1 Description of the area

Bayside LGA is located about seven kilometres south of Sydney CBD. It is about 50 square kilometres in size and comprises 31 suburbs. The LGA is bordered by Botany Bay to the south, the T8 Airport and South, and Southern Highlands train line to the north, Bunnerong Road to the east, and Rocky Point Road to the west. In 2016, the population of the LGA was 164,534 persons. The LGA is one of the fastest growing areas of Sydney, with suburbs in the LGA experiencing significant recent population growth. This growth is expected to continue to 228,150 people (22.64 per cent increase) in 2036 (Department of Planning and Environment, 2016).

Bayside LGA contains diverse land uses including Botany Wetlands, Port Botany, and Sydney Airport which make up large areas of the LGA. Residential areas to the north, east and west of the project alignment and in the surrounding residential communities have developed around these uses and resulted in the interface between residential and industrial uses in some parts. This has been most noticeable in areas which interact with heavy industry land uses, or uses that require 24-hour access by heavy vehicles and rail freight, such as the existing Botany Line corridor and concentrated freight operations at Port Botany.

Botany Wetlands are located to the north of Botany and Pagewood suburbs. They are not publicly accessible due to their occupation in part by Sydney Airport, Eastlake Golf Club, Bonnie Doon Golf Club and The Lakes Golf Club. The Wetlands act as a key flora and fauna corridor, and contain remnant vegetation communities that are of State significance. Sydney Water notes that the Wetlands are a cultural and historical landmark, contributing greatly to the local amenity and character of the area (Sydney Water, 2018).

The community living in Bayside LGA is culturally and linguistically diverse, with a large proportion of the population born in non-main English speaking countries (41.1 per cent). The most common non-main English speaking countries of birth were China (7.1 per cent), followed by Nepal and Greece (both 2.5 per cent) and Bangladesh (2.1 per cent). At the time of the 2016 census, 10 per cent of the community of Bayside LGA were living in social housing, which is a higher proportion of the population than Greater Sydney overall (4.2 per cent) (ABS, 2016).

4.2.2 Connectivity within the LGA

Bayside LGA currently experiences large volumes of traffic on local roads due to heavy vehicles transporting goods to and from the Port and Sydney Airport, as well as regional traffic, local area traffic, and airport related traffic. The residents of Bayside LGA (52.1 per cent), and the local worker population (47.3 per cent) largely rely on driving to get to work (.id, 2018). The suburbs of Mascot and Botany are divided by the Southern Cross Drive, which limits connectivity between these areas, and places added pressure on the major road connections such as Botany Road. There are several intersections near the project corridor where delays are currently experienced by road users, including General Holmes Drive and Mill Pond Drive, Joyce Drive and O'Riordan Street and Qantas Drive and Seventh Street.

Connectivity for local workers and freight movements to Port Botany is primarily provided by road. Key roads which provide this connectivity include Botany Road, Foreshore Road, Bunnerong Road, Southern Cross Drive and General Holmes Drive, as well as other local roads in and around the project area.

For regional freight movements and workers from the Greater Sydney region, key roads include the M5 Motorway, Hume Highway and the Princes Highway connecting the port to the south of NSW and ACT, the Cumberland Highway and the M4 connecting the port to the west of NSW, and the M7, M1 and M2 connecting the port to the north of NSW and Newcastle (Department of Infrastructure, Regional Development and Cities, 2018).

A total of 5.8 per cent of resident workers in the LGA travel to work by bus. The area is serviced by the 307, 309 and 310x bus routes, connecting residents to Sydney's eastern suburbs and CBD. All three bus routes stop along Botany Road, with the 307 and 310x also travelling along William Street and Banksia Street in Botany (Transport for NSW, 2018b).

27.1 per cent of the community use the train to get to work. Residents and commuters in the region are connected by rail services including:

- T4 Eastern Suburbs and Illawarra train line, which services regional passengers from the south of Sydney to the eastern suburbs with stops at Rockdale and Banksia
- T8 Airport and South Line, which services Mascot with connections to the CBD and south-western suburbs.

From a social perspective, active transport provides connectivity as well as physical activity and recreation. As noted in Section 2.1.2, improving active transport networks is a key focus area for Transport for NSW's *Future Transport 2056 Strategy* (Transport for NSW, 2018).

There are several cycleways identified by Roads and Maritime Services on the Cycleway Finder website (Roads and Maritime Services, 2018a) which travel through Mascot and Botany. These are identified as low difficulty, on-road cycle options for local residents, and provide access to city-bound cycle routes. The closest shared use paths are Alexandra Canal and Bourke Road Cycleway shared use path, both located in Mascot. Alexandra Canal is located about one kilometre to the west of the project site, and the Bourke Road Cycleway begins about 600 metres north of the project site (Roads and Maritime Services, 2018a).

In terms of the supply of goods to businesses, the existing freight and passenger rail system connects Port Botany to the trade network for Greater Sydney and further to nationally significant freight corridors to the north and south (Department of Infrastructure, Regional Development and Cities, 2018). There are several projects currently underway to improve the connectivity of the national freight network including different modes of freight. These include the intermodal terminal at Moorebank and ARTC's Inland Rail project.

4.2.3 Economic centres within the LGA

Port Botany is a major trade centre for NSW and is key to the economy of Sydney and broader NSW (NSW Ports, 2015). From a social perspective, the port is a major source of employment supporting 21,000 jobs (NSW Ports, 2015) and supplies goods to businesses in metropolitan Sydney and the Greater Sydney Region (Transport for NSW, 2018a, ARTC, 2018) which also support employment. Over 4,000 people are employed at the port itself (.id, 2016). The port operates 24 hours per day, seven days a week.

Sydney Airport is located in the suburb of Mascot within Bayside LGA. Sydney Airport is the only public international terminal in NSW. From a social perspective, the airport provides people with access to domestic and international air travel to take personal and business trips, and opportunities to maintain personal connections including with friends and family. In 2017 Sydney Airport was used by over 43.3 million passengers, including around 8.6 million international passengers (Deloitte Access Economics, 2018). According to the Final Business Case, passenger trips to and from Sydney Airport are expected to grow to 66 million trips by 2039. A number of billboards are located near Sydney Airport between Qantas Drive and Joyce Drive which benefit advertising agencies and Sydney Airport Corporation Limited through leasing arrangements.

Sydney Airport, Port Botany and their associated industries support a significant workforce. Based on worker data for Bayside LGA, the LGA employs around 74,000 workers, with 23.9 per cent who are also residents in the area. The transport, postal and warehousing industry is the largest employer in Bayside LGA (30.5 per cent) representing almost a third of all jobs reflective of the airport and port industries. This was followed by retail trade (9.8 per cent) and construction (7.4 per cent). A larger proportion of workers travelled to work by car (63.5 per cent compared to 56 per cent in Greater Sydney), while 0.7 per cent travelled by bicycle, which is consistent with Greater Sydney (.id, 2018).

4.2.4 Community values

Community values refer to characteristics and aspects of a community that contribute to their quality of life and wellbeing. These can include physical elements such as the public domain and the desire to spend time within it, parks, transport connectivity and journey times, and intangible qualities such as sense of place, community cohesion, and attachment to place. A project may impact on these aspects of a community through changes in noise and air quality levels, visual amenity, traffic and access, barriers to movement across the community, use and enjoyment of community spaces and relocation of local population due to property acquisition.

Values of the Bayside community that are relevant to this SIA have been identified through a review of relevant consultation outcomes and documents. This includes consultations to inform the EIS (Section 5) and review of the *Botany Bay Planning Strategy 2031* (City of Botany Bay, 2009), *Community Strategy Plan 2030* (Bayside Council 2018), *Disability Inclusion Action Plan* (Bayside Council, 2017b), and *Bayside Crime Prevention Strategy* (Bayside Council, 2017a).

Local amenity and character

According to the *Botany Bay Planning Strategy 2031* (City of Botany Bay, 2009), the local community value the heritage character, good quality urban design, and amenity of local residential areas. The strategy recognises the potential challenge presented to residential amenity by future expansion of airport and port activities, and the resulting truck and rail freight.

Consultation with Bayside communities to inform the *Community Strategic Plan 2030* (Bayside Council, 2018) highlighted that communities aspire to have places that are focused on people and reflect what is meaningful to local communities, such as incorporating open space.

Access, connectivity and community cohesion

Outcomes from community consultation on the *Community Strategic Plan 2030* (Bayside Council, 2018) indicate that Bayside communities are seeking improved connectivity, places that are accessible and create a sense of belonging, and integrated transport. The community aspires to have more walking paths, cycling routes and transport corridors throughout the LGA to support local connectivity. Currently, Bayside Council do not have any active transport plans or strategies publicly available. However, the active transport network, which includes both cycling and pedestrian facilities, has been recently updated, building upon the existing infrastructure to improve connections across the study area.

Bayside Council has focused service provision on disability and access, children's services and services for seniors, indicating the importance that is placed on inclusion by both Council and LGA. The *Disability Inclusion Action Plan* (2017b) highlights the promotion of health and equality, supported by accessible spaces and transport options across the LGA.

4.3 Social context of the local study area

As described in Section 3.2.2, the local study area comprises the suburbs of Mascot, Pagewood and Botany, which would be intersected by the project. This section provides a description of the local communities in each suburb.

4.3.1 Mascot

Mascot is the northern-most suburb along the project alignment. Mascot is located seven kilometres south of the Sydney CBD, and is about nine square kilometres in size. The suburb is dominated by Sydney Airport, and airport related businesses and operations, including airline services, freight and trade centres and passenger services such as car parks and accommodation facilities.

Mascot is characterised by a large commercial and industrial sector, driven mainly by its proximity to Sydney Airport. Mascot's business precincts are primarily located to the north of the suburb. However, there are some commercial and industrial businesses located adjacent to the project site along Botany Road and Joyce Drive. There are localised town centres near Mascot Station and along Botany Road. Botany Road and O'Riordan Street provide the local community with key community and commercial services.

In recent years, medium density redevelopment has predominantly occurred on former industrial lands in locations closer to the freight rail corridor and Sydney Airport.

Demographic profile

According to the ABS 2016 Census data, compared to Greater Sydney and the Bayside LGA community, Mascot is characterised by:

- a younger median age (32 years) compared to both Bayside LGA (35 years) and Greater Sydney (36 years)
- a higher proportion of the population who were born in non-main English speaking countries (46.3 per cent) than in the LGA (41.1 per cent) and Sydney overall (29.3 per cent)
- a higher proportion of the population who have completed Year 12 or equivalent (69.3 per cent) than both Bayside LGA (61.7 per cent) and Greater Sydney (60 per cent)
- lower unemployment rates (5.2 per cent) on average than Greater Sydney (6 per cent)
- residents working in industries such as professional, scientific and technical services (10.6 per cent), followed by accommodation and food services (10.3 per cent), and transport, postal and warehousing industry (9.3 per cent)
- couples with children as the predominant family type (41.7 per cent) although this was lower than Bayside LGA (46.2 per cent) and higher than Greater Sydney (35.3 per cent)
- couples without children form 29.7 per cent of family households, which was higher than Bayside LGA (23 per cent) but lower than Greater Sydney (33.4 per cent)
- lower level of need for assistance with core daily activities due to disability (3.4 per cent) compared to Bayside LGA (5.3 per cent) and Greater Sydney (4.9 per cent)
- a higher proportion of people who travelled to work by public transport (32.7 per cent by train and 7.7 per cent by bus) compared to Bayside LGA (27.1 per cent and 5.8 per cent respectively) and Greater Sydney (16.3 per cent and 6.1 per cent respectively) reflecting a lower level of car reliance
- a higher proportion of the Mascot community walk to work (7.4 per cent) than Bayside LGA (3.7 per cent) and Greater Sydney (4 per cent).

A summary of the demographic characteristics of Mascot is provided in Appendix A.

4.3.2 Botany

Botany is located 11 kilometres south of Sydney's CBD. The suburb is seven square kilometres in size, and is characterised by low density and medium density housing. Botany contains the industrial port precinct of Sydney, and is adjacent to Sydney Airport. Botany has become less industrial over time, however is still characterised by its large commercial industry that is centred on shipping and freight, as well as industries to support the large chemical plant, owned by Orica Australia, located in Botany.

Botany Road is the suburb's town centre. Much of the suburb's community infrastructure, local shops and commercial centres are located along Botany Road corridor. A business precinct is located to the north of the suburb, adjacent to the project site. Businesses within the precinct vary between offices, commercial and industrial business types.

The project is located along the eastern border of Botany, about 500 metres to the east of Botany Road, and in close proximity to residential areas. The nearby streets are relatively quiet, accessed predominantly by local traffic, and there are scattered coffee shops and local parks throughout the area.

Demographic profile

The suburb of Botany can be characterised by the following factors:

- a larger proportion of the population who identify as Indigenous (2.7 per cent) than Bayside LGA (1 per cent) and Greater Sydney (1.5 per cent)
- lower proportion of the population of Botany speak another language and English not very well or not at all (3.1 per cent) compared to Bayside LGA (8.5 per cent) and Greater Sydney (6.5 per cent)
- a lower proportion of the population (23.1 per cent) of Botany were born in non-main English speaking countries than Bayside LGA (41.1 per cent) and Greater Sydney overall (29.3 per cent)
- lower unemployment rates in Botany (3.9 per cent of the population) than in Bayside LGA and Greater Sydney (6 per cent of the population)
- the top industry of employment is health care and social assistance (10.4 per cent), followed by construction (9.4 per cent), transport, postal and warehousing (9.1 per cent), and education (8.6 per cent)
- a higher proportion of households in Botany are occupied by couple with children (52.6 per cent) or one parent families (15.8 per cent) than the proportion of households in Greater Sydney that are occupied by couples with children (35.3 per cent) and one parent families (10.4 per cent)
- less people living in low income households in Botany (10.9 per cent) than Greater Sydney (15.1 per cent), however the rates of the population of Botany living in social housing is similar to that of Greater Sydney (4.7 per cent and 4.6 per cent respectively)
- less people use the train to get to work in Botany (7.8 per cent) compared to Bayside LGA (27.1 per cent) and Greater Sydney (16.3 per cent), while greater proportion of the population of Botany use the bus to get to work (10.5 per cent) than Bayside LGA and Greater Sydney (5.8 per cent and 6.1 per cent respectively).

A summary of the demographic characteristics of Botany is provided in Appendix A.

4.3.3 Pagewood

Pagewood is a predominantly a residential area characterised by traditional grid patterns, wide tree-lined streets and a scattering of local open space. Since 2016, high and medium density development has been increasing across the suburb, including new apartment blocks near the Eastgardens town centre (Taylor, 2018).

Pagewood consists of large portions of open space due to multiple golf courses and wetlands located in the suburb. It is also located adjacent to the major town centre of Eastgardens Westfield, which provides surrounding areas with access to commercial services and shops, and is the Botany Grove Business Park, which provides medium density office and commercial spaces. Pagewood has a small town centre located on Dalley Avenue, which provides the community with limited commercial and community infrastructure. Residents are likely to travel to Eastgardens Westfield or Botany Road for the majority of shops and services.

Demographic profile

The characteristics of Pagewood, in comparison to Greater Sydney and the community of Bayside LGA, can be defined by:

- a median age of 42 years old, which is higher than Bayside LGA (35 years old) and Greater Sydney (36 years old)
- a lower proportion of the population who were both in non-main English speaking countries (27.9 per cent) compared to Bayside LGA (41.1 per cent) and Greater Sydney overall (29.3 per cent)
- a lower proportion of the population who speak another language at home, and English not well or not at all (4.3 per cent) compared to Bayside LGA (8.5 per cent) and Greater Sydney (6.5 per cent)
- lower rates of unemployment in Pagewood (3.9 per cent) than in both Bayside LGA and Greater Sydney (both 6 per cent)
- higher rates of households with couples with children (54.5 per cent) and one parent households (16.5 per cent) than Greater Sydney (35.3 per cent and 10.4 per cent respectively)
- a higher proportion of the population of Pagewood live in social housing (8.8 per cent) than Greater Sydney on average (4.6 per cent)
- a higher proportion of the population identify as needing assistance in Pagewood (5.5 per cent) compared to Bayside LGA (5.3 per cent) and Greater Sydney overall (4.9 per cent)
- a lower proportion of the population of Pagewood use the train for their journey to work (5.3 per cent) compared to Bayside LGA (27.1 per cent) and greater Sydney (16.3 per cent)
- a higher proportion of the population of Pagewood who use the bus for their journey to work (14.1 per cent) than Bayside LGA (5.8 per cent) and Greater Sydney (6.1 per cent)
- a higher proportion of the population drive a car to work in Pagewood (62.9 per cent) compared to Bayside LGA (52.1 per cent) and Greater Sydney (52.8 per cent).

A summary of the demographic profile of Pagewood is found in Appendix A.

4.4 Community infrastructure

Table 4.1 summarises the community infrastructure located near the project corridor. Community infrastructure facilities including both the physical infrastructure (such as community facilities) and the non-physical infrastructure (such as services, programs and networks) which help individuals and communities to meet their social needs and enhance community wellbeing, or have been identified as having social value or importance. These are both built and natural assets that have been identified as having social value. Given the proximity of the project area to the residential suburbs of Mascot, Pagewood and Botany, there are several community and social facilities in the area.

The Eastlake Golf Club, Lakes Golf Club and Botany Aquatic Centre are prominent recreation facilities in the area, and would attract local and regional users. The Lakes Golf Course also hosts international events. The Botany Aquatic Centre and numerous accommodation facilities are located adjacent to the project corridor.

Table 4.1, Figure 4.1 and Figure 4.2 identify the community infrastructure facilities located within 500 metres of the project.

Table 4.1 Summary of community infrastructure

Facility type	Facility name	Description	Map reference
Emergency services	Fire and Rescue NSW Botany Fire Station	Located on the corner of Botany Road and Banksia Street, this fire station provides services to the local region and requires complete road and foot access at all times.	25
Recreation facilities	Botany Aquatic Club	The Club is a community and recreation facility in the area. In addition to its aquatic facilities, it has a café and an outdoor function area with barbeques, picnic tables and chairs. It in operation between 6am and 6pm each day from October through to April. The Aquatic Club is closed from May through to September.	26
	Eastlake Golf Club	Eastlake Golf Club is situated amongst three of Sydney's private sand belt courses. It is the only golf course in the area open to the public and general community. Tee off times vary, from the earliest at 6.30 am, to the latest start at 12 pm on a Saturday. The course includes a rest stop facility half way along the course, immediately adjacent to the rail corridor.	27
	The Lakes Golf Club	A private golf course that occupies part of Botany Wetlands, and is located both to the east and west of Southern Cross Drive. The golf course also offers private function facilities open to both members and the public.	1
Open space	Dransfield Avenue Reserve	This reserve is managed by Council, and is described as a pocket park. The park provides local users with open green space and seating facilities.	3
	Gaiarine Gardens	This park was built in recognition of the City of Botany's sister relationship with Gaiarine Italy. The gardens are a popular spot for off-leash dog walking and provide community with seating facilities and walking paths through the gardens.	28
	Booralee Park	Two playgrounds, soccer, and rugby sports fields, cricket pitches, as well as barbeque and toilet facilities. This park is located adjacent to the Botany Aquatic Centre, and also contains the Botany War Memorial.	29
	Coleman Reserve	Coleman Reserve is a small, passive open space located adjacent to Robey Street. The area contains some seating space and shade. It is located within Commonwealth land.	4
	L'Estrange Park	The park is designed to cater for two age groups in order to be suitable for a variety of family groups. The park contains play equipment, basketball court, and public toilets.	2
	John Curtin Memorial Park	John Curtin Reserve is names after Australia's former Prime Minister. This park is a linear park, with local access from both High Street and Robey Street in Mascot. The reserve accommodates a plant nursery.	6
	McBurney Avenue Reserve	A pocket park connecting McBurney Avenue and Botany Road. The park contains walkways and passive green space.	5
	Botany Wetlands	Botany Wetlands are located across parts of Pagewood, Eastlakes and Mascot. See Section 4.2.1 for more information on Botany Wetlands.	30
	Garnet Jackson Reserve	This reserve is located in Botany, and provides the local community with a large open space containing a barbecue, cycle paths, basketball courts, outdoor exercise equipment, picnic tables, play equipment and public amenities.	31

Facility type	Facility name	Description	Map reference
	Robey Street Reserve	Robey Street Reserve is a small pocket park, adjacent to John Curtin Memorial Reserve. The park provides local users with open green space.	7
Community centres	Komuniteti Shqiptar Ne Sydney	This community facility is home to the Albanian Australian Community of NSW.	8
	Mascot Library	The library is open from Monday to Friday between 10 am and 6 pm, and on Saturday between 10 am and 1 pm. The library hosts community programs for families with babies and toddlers, school holiday programs, book clubs and Justice of the Peace services.	9
Education and child care services	Botany Public School	A co-educational local area primary school, kindergarten to year six. As of 2016 there were 268 students at the school. The school catchment is the suburb of Botany. The school operates from Monday to Friday, with school commencing at 9.00 am and concluding at 3.00 pm.	32
	Hippo's Friends Child Care Centre	Provides long day care, pre-school and before and after school care. The centre cares for children ages six weeks to 12 years old. Currently the centre has a total of 43 approved places. The centre is open from 7.00 am until 6.00 pm Monday to Friday.	33
	Botany Bay Pre-School	Botany Bay pre-school provides care for children ages two to five years. Botany Bay pre-school is licensed for 38 children per day. The school is open from 8.00 am until 5.30 pm Monday to Friday.	34
	All Star Early Learners	A pre-school and early years centre. The centre is open from 7.00 am until 5.30 pm Monday to Friday, and is open during school holidays. The centre offers places for children aged zero to five years.	35
	John Brotchie Memorial Nursery School	A NSW Department of Education operated school, which provides part-time care and education to children the year before they attend primary school. The school day starts at 9.00 am and concludes at 3.00 pm Monday to Friday, and runs to the four public school terms.	36
	Pagewood Kindergarten	Pagewood Kindergarten is a pre-school and day care centre for children. The school day starts from 7.30 in the morning until 6.00 in the evening from Monday through to Friday.	37
	Pagewood Public School	Pagewood Public School is a primary school for years Kindergarten through to six. School day starts from 8.00 am till 3.00 pm Monday through to Friday.	38
	Toybox Early Learning	The centre cares for children aged from 6 weeks to 6 years old. The centre is open from 7 am until 6 pm from Monday to Friday.	22
Places of Worship	Life Passion Church	The Life Passion church was originally founded in Peru. It attracts people from a wide area for its services, which are delivered in both English and Spanish. Services are on Wednesday and Friday from 7.30 pm until 9.00 pm and Sunday form 10.00 am until 1.00 pm.	39
	St Matthew's Anglican in Botany	St Matthew's is a church in Botany, which acts as a place of worship, a community gathering space, and a facility for hire and events. There are several guest talks and organised speeches, meaning that the church is active throughout the week, with peak visitation on Sunday.	40

Facility type	Facility name	Description	Map reference
	Citygate Fellowship Church	This church is a dedicated space for the Indonesian community living in Sydney. Services are offered on Sunday at 10 am. The church is part of the wider CityGate services.	21
Accommodation facilities	Stamford Plaza Sydney Airport	The hotel is located on the corner of O'Riordan and Robey Streets, and is open 24 hours a day. Access to the hotel via O'Riordan Street. The hotel is also accessible by foot from T2/T3.	10
	8Hotels – Felix Hotel	This hotel has 150 rooms, and is located on Baxter Road in Mascot. It services incoming and outgoing passengers from Sydney Airport, and is open 24 hours a day.	11
	Ibis budget Sydney Airport	Located on O'Riordan Street, Ibis Sydney Airport provides 200 hotel suites. The hotel is located within Commonwealth land.	12
	Mantra Hotel and Sydney Airport	Located on 3 Ross Smith Avenue, Mantra Hotel provides hotel suites, onsite parking and 24 hour reception services. The hotel is located within Commonwealth land.	13
	Quest Mascot	Quest Mascot is located on Robey Street, and is a serviced apartment style hotel for short or long term stays.	14
	Holiday Inn Sydney Airport	This hotel has 250 rooms and is located on O'Riordan Street. The hotel also has conference centre facilities, with six meeting rooms available.	15
	Ibis Sydney Airport	Ibis Sydney Airport is located on O'Riordan Street. It provides 200 rooms and is a short distance from both T1 and T2/T3. The hotel has a reception available 24 hours a day, seven days a week.	16
	Adina Apartments	Located on Bourke Road, this hotel has 123 rooms, with 24 hour reception services. The hotel also has conference centre facilities.	17
	Travelodge Hotel Sydney Airport	Travelodge Sydney Airport has 210 rooms, and is located on King Street.	18
	Pullman Hotel Sydney Airport	Pullman Sydney Airport has 230 rooms, a restaurant and conference facilities, and is located on O'Riordan Street.	19
	The Branksome Hotel	This hotel offers suites for short term stay, as well as fitness and dining facilities. This hotel also has meeting and conference room facilities.	20
Health services	Mascot Medical and Dental Services	This practice has been operating since 1989 and is a bulk-billing family practice. The centre is open from Monday to Friday, and Saturday by appointment only.	24

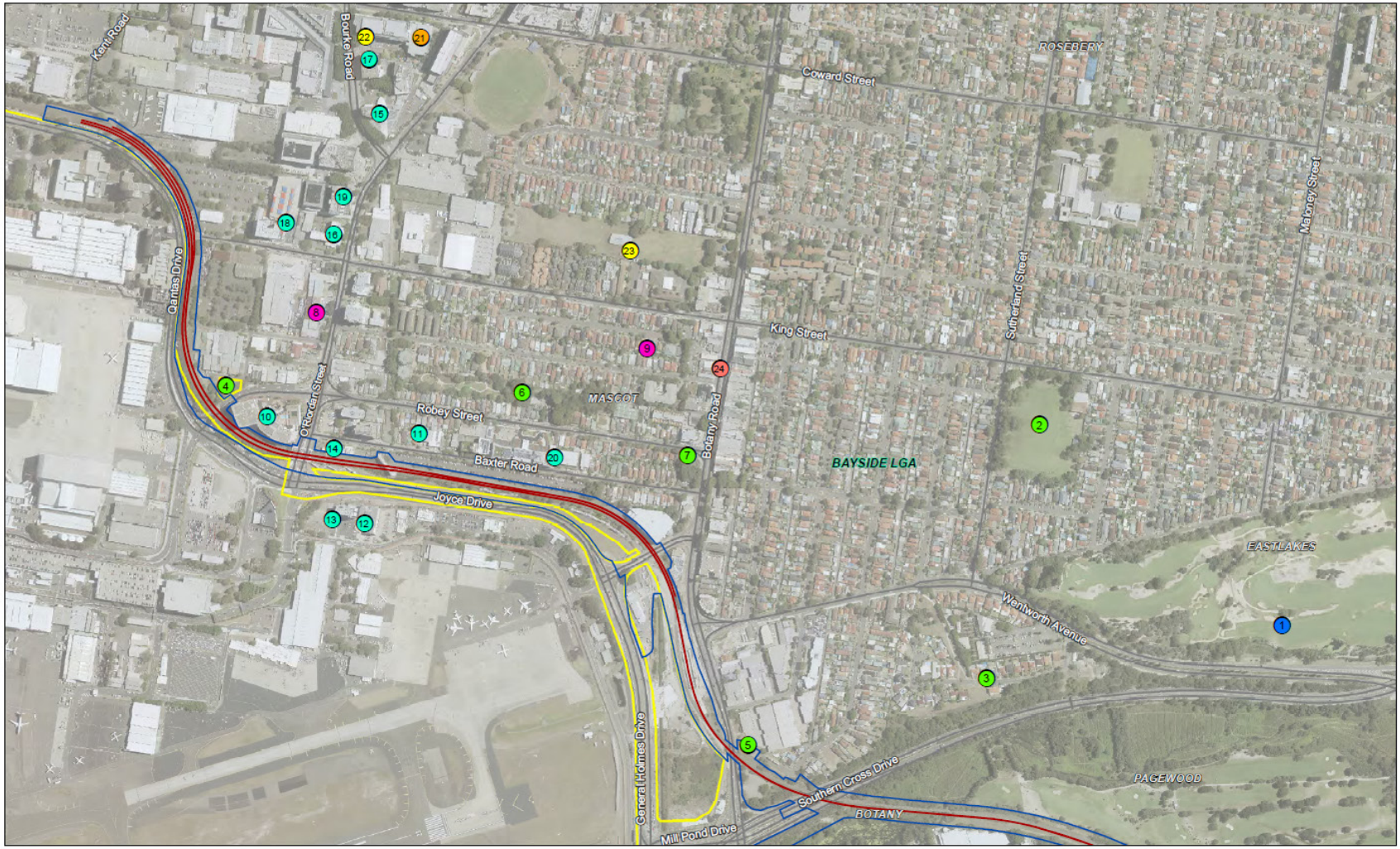

Figure 4-1

Community Infrastructure located in Mascot

Figure 4-2

Community Infrastructure located in Botany and Pagewood

5. Outcomes of consultation

This section provides a summary of the consultation undertaken by ARTC to inform the EIS and this SIA. This includes community consultation undertaken for the project, and targeted consultation with key stakeholders. Consultation outcomes from other projects in the study area are also provided. Further details on the consultation process and outcomes are provided in Chapter 4 of the EIS.

5.1 Consultation to inform the EIS

5.1.1 Community engagement

Community engagement was undertaken between May and June 2019. Consultation activities included:

- pop-up information booths
- community information sessions
- door knocks
- newsletters.

Issues considered relevant to a SIA relate to concerns about amenity and peoples way of life. These are discussed in Section 3.1.1 and consider:

- way of life
- community
- access to and use of community infrastructure, services and facilities
- culture
- health and wellbeing
- surroundings
- personal and property rights
- decision-making systems
- fears and aspirations.

The key issues raised by community members relevant to this SIA, across the engagement activities focused on:

- increased noise as a result of construction activities and additional freight trains during operation. This issue is discussed in Section 6.1.2
- increased vibration, with some residents indicating they currently experience vibration from passing freight trains. This issue is discussed in Section 6.1.2 and Section 6.2.2
- land required to accommodate the project. This issue is discussed in Section 6.1.4
- access and traffic changes as a result of construction activities. This issue is discussed in Section 6.1.3 and 6.2.3.

Concerns about potential changes to local amenity and access reflect the value that communities place on local amenity and character, and access and connectivity, is discussed in Section 4.2.4.

5.2 Outcomes of other relevant stakeholder consultations

Outcomes of consultation for recent projects in the local study area are summarised below.

5.2.1 Sydney Airport Master Plan 2039

General community consultation undertaken by Sydney Airport in 2018 to inform the *Sydney Airport Master Plan 2039* (Sydney Airport 2019) indicated the following general issues which are relevant to this project:

- concern over the future of the Alexandra Canal cycleway and how it may be impacted by any future development of Sydney Airport
- concern about the forecast increase in flights, and the associated aircraft noise which may affect local amenity.

6. Impact assessment

This section presents an assessment of the potential social impacts and opportunities that may result from the construction and operation of the project. Impacts associated with the construction of the project and with its operation have been assessed separately for each impact category. This SIA is based on the social impact categories and assessment criteria provided in Section 3. The significance of social impacts is based on the assumption that mitigation measures recommended in other EIS technical studies will be implemented, as outlined in Section 7.1.

6.1 Impacts during construction

6.1.1 Employment and economy

As discussed in Chapter 7 of the EIS, the peak construction workforce is estimated to be about 270 people during non-possession work and about 405 people during possession work. This would result in direct employment opportunities for skilled workers across Greater Sydney including roles such as engineers, designers and construction workers in the short term. Skilled workers in the local study area may benefit from these employment opportunities. As identified in the existing environment (Section 4), there are skilled workers living in the local study area including professional, scientific and technical services (10.6 per cent in Mascot) and construction (9.2 per cent in both Botany and Pagewood.

As an indirect result of the increase in construction workers in the local study area, there may be increased expenditure at local businesses, such as food, beverage and retail services close to the project site. An increase in patronage has the potential to provide increased income generation opportunities to these types of local businesses, benefitting business owners in the short term.

As discussed in Chapter 6 of the EIS some billboards may be required to be relocated to a different location than their current positions during construction. Following completion of the construction for the project, all of the impacted billboards would be reinstated generally in the same location as they are currently positioned. No social impact is expected as a result of this change is expected.

As noted in *Technical Report 1 – Traffic and Transport Impact Assessment* and Section 6.1.3, the additional workforce in the local study area would place pressure on availability of existing parking spaces. This may affect some local business owners and workers who drive to work (see Section 4.2.3). This may also reduce availability of street parking for customers of some businesses that do not have dedicated parking spaces, which could reduce income for business owners. Additional off-site parking for the construction workforce will be made available to reduce these impacts.

Based on the assessment of social impacts and considering the implementation of mitigation measures as outlined in Section 7.1, this may lead to a negligible to minor impact on local business owners and workers.

6.1.2 Amenity

This section discusses the potential social impacts that may occur due to changes to amenity within the social study area, which may affect the quality of life of those who live, work and visit these areas. Changes to amenity relate to noise, vibration, visual, and air quality impacts. Amenity changes and resulting social impacts on users of affected community facilities are discussed in Section 6.1.4.

Noise and vibration

The assessment of social impacts resulting from potential changes to the acoustic environment has been made based on a review of *Technical Report 2 – Noise and Vibration Impact Assessment*. The assessment made in *Technical Report 2 – Noise and Vibration Impact Assessment* was for 'realistic worst case' scenarios. Given the sporadic nature of the work, it is expected that there would be relatively long periods when construction noise would be lower than the realistic worst case scenarios assessed, as well as times when no additional noise or vibration from construction would be expected at all.

As discussed in *Technical Report 2 – Noise and Vibration Impact Assessment* and Section 4.2.1, local residents are exposed to existing noise levels from Sydney Airport and freight rail movements along the existing Botany Rail corridor. This is particularly noticeable during the day time, and becomes less noticeable during the evening.

Changes to noise levels are expected along the existing rail corridor as a result of construction activities. Construction during the day would lead to noticeable increased noise levels at:

- residential properties adjacent to the rail corridor in Botany and Pagewood
- residential properties in close proximity to the rail corridor in Mascot along Baxter Road, Robey Street and Botany Road
- accommodation facilities in Mascot, including: Stamford Plaza Hotel; Mantra Hotel; Ibis Budget Sydney; Quest Mascot; and Felix Hotel. Although these facilities are expected to have high performance facades and glazing to mitigate airport-related noise, it is possible that some construction noise may be noticeable to some users at times
- local businesses along Lord Street in Botany and along Botany Road and Joyce Drive in Mascot.

Construction related traffic has the potential to temporarily increase road traffic noise, particularly along haulage routes. *Technical Report 2 – Noise and Vibration Impact Assessment* found that this would not be a noticeable increase on major roads due to the noise generated by existing traffic, however there would be a noticeable increase on local roads. These local roads include Myrtle Street, Bay Street, William Street and Ocean Street. Residential properties along these streets may experience increases in noise from construction vehicles (further details are provided in *Technical Report 2 – Noise and Vibration Impact Assessment*).

Vibration that exceeds levels of human comfort may be noticeable for short durations when rockbreakers or vibratory rollers are in use nearby. Vibration may be felt at residences, local businesses and accommodation facilities along the project alignment such as Baxter Road, Botany Road, Lord Street, Myrtle Street, May Street, and Ellis Street.

Increased noise and vibration from construction may be a nuisance for residential areas adjacent to the rail corridor in Mascot, Botany and Pagewood. During the day, this could potentially lead to some people spending less time outdoors in backyards or on balconies, engaging in recreational activities or relaxation, or closing windows while indoors. Daytime noise also has the potential to interfere with day to day activities such as conversations, reading, listening to the radio or watching television.

Noise and vibration from construction may impact the users of the accommodation facilities identified above. Although accommodation facilities are expected to have high performance facades and glazing to mitigate airport-related noise, it is possible that some construction noise may be noticeable to some users at times. This could potentially lead to some people spending less time outdoors or engaging in recreational activities or relaxation. It also has the potential to disturb or interfere with day to day activities. Users of accommodation facilities are considered to be less sensitive to the noise and vibration impacts, due to the expected high performance facades and glazing of the infrastructure, as well as the temporary nature of the use of these facilities.

The residential areas and accommodation facilities discussed above may also be affected by night works. Disturbance to people's night-time peacefulness, relaxation or sleep can lead to tiredness which can affect people's moods, ability to concentrate on work and other activities, increase irritation and therefore potentially add to strain of personal or other communication and relationships. As most businesses usually operate during the day, it is unlikely that local businesses will be impacted by night works.

There is potential for the social impacts from increased noise and vibration to be greater on vulnerable groups, who may be more sensitive to some amenity changes, and have less capacity to adapt. This may include the large proportion of couples with children living in Mascot, Botany and Pagewood, single parents with children in Botany and Pagewood, as well as the high proportion of people who need assistance living in Pagewood (as noted in Section 4.3).

It is noted that peoples' perception of changes in noise levels is subjective and varies from person to person. Generally construction activities and equipment are likely to move within the construction sites and along the linear project area, and therefore associated increased noise levels are expected to be temporary in duration and sporadic in frequency. As the distance between the receiver and construction activities increases, noise is expected to decrease and be less noticeable. However as noted in Section 4.2.4, the local community value the amenity of the area, which may result in some community members perceiving a greater impact than others.

Based on the assessment of social impacts above and the implementation of recommended mitigation measures outlined in Section 7.1, daytime increased noise would result in:

- a minor impact for residents and employees of local businesses adjacent to the project site in Mascot, Botany and Pagewood
- a medium-minor impact on vulnerable groups
- a negligible impact for users of accommodation facilities in Mascot.

Night time works are expected to result in a medium – minor impact for residents and users of accommodation facilities, and a medium impact for vulnerable groups.

Visual and landscape

According to *Technical Report 11 – Landscape and Visual Assessment*, residents of Robey Street, Baxter Road, Myrtle Street, Bay Street and Ellis Street would experience changes to the visual amenity of their local area as a result of construction activities. In addition, accommodation facilities and local businesses located near the intersection of Joyce Drive and O'Riordan Street would also experience visual changes as a result of construction. Changes to visual amenity would result from direct views of construction activities, equipment and compounds, and the removal of vegetation within the existing rail corridor which may currently screen some of these views from residences. Vegetation would also be removed along nearby streets on Ellis Street, Myrtle Street, Botany Road, O'Riordan Street and Robey Street. It is noted that residents likely experience current views of the rail corridor and passing trains, and therefore may not be as sensitive to the visual changes. For residents whose views would be altered due to removal of screening trees and vegetation, these visual changes would be more obvious. This may affect the values of some of these residents and diminish their sense of pride in their local area.

As noted in *Technical Report 11 – Landscape and Visual Assessment*, the change to landscape and visual character will be most noticeable in Botany and Pagewood, where construction characteristics are being introduced into residential areas. These visual impacts may not be as noticeable for residents of Mascot where the local character is more influenced by commercial and industrial land uses.

Based on the assessment of social impacts above and implementation of recommended mitigation measures outlined in Section 7.1, the above changes would result in a minor impact for residents and vulnerable groups. Visual changes are not expected to result in social impacts on users of accommodation facilities or employees or owners of local businesses.

Air quality

There is potential for dust to be generated by construction activities and heavy vehicle movements. The air quality assessment found that there may be short term impacts from dust within six metres of general construction activities. Longer term impacts from dust may occur within seven metres of construction activities that occur in the same location for over a year. Dust is expected to only occur during dry weather with the wind blowing towards a receptor when dust is being generated. Implementation of mitigation and management measures to minimise dust is expected to reduce impacts (see *Technical Report 3 – Air Quality Impact Assessment*).

Dust may likely affect residents, employees of local businesses, and community members within the six metre proximity to construction activities, and along haulage routes. Increased dust may lead to some of these residents altering their way of life, such as closing windows of houses or vehicles, or spending limited time in backyards or on balconies. People may also need to spend more time cleaning indoor or outdoor surfaces due to settling dust. This may lead to temporary nuisance to residents or employees of local businesses. People who may be more sensitive to dust include older people, children and people with medical conditions such as asthma. Refer to *Technical Report 13 – Health Impact Assessment*, for more detail.

Based on the assessment of social impacts above and implementation of recommended mitigation measures outlined in Section 7.1, the above changes would result in a minor impact on residents and employees of local businesses and a medium-minor impact on vulnerable groups.

6.1.3 Access

This section assesses the changes to the access and connectivity on roads, public and active transport, freight, parking and private property. It assesses the social impacts resulting from these changes on residents and general community members.

Road network

Construction would result in changes to access, including increased construction traffic, road or lane closures, and changes to access arrangements near construction compounds. Increased construction traffic is expected along haulage routes including Airport Drive, Qantas Drive, O'Riordan Street, Joyce Drive, General Holmes Drive, Botany Road, Wentworth Avenue, Bay Street and Banksia Street. Other roads that would be required for construction vehicle access for light vehicles and low volume heavy vehicle movements include:

- King Street, High Street, Robey Street and Baxter Road in Mascot
- Myrtle Street, William Street, Victoria Street and Ellis Street in Botany
- Ocean Street, Stephen Road and Swinbourne Street in Pagewood.

These routes have been identified to minimise impacts on residential streets as far as possible, while providing the most direct route to the arterial road network and meeting specific road requirements. There would be the largest increase in vehicle movements from the compound located off General Holmes Drive. However, in general, most vehicle movements would be scheduled outside of peak periods. See Chapter 7 of the EIS for indicative construction traffic volumes.

Temporary lane closures on Southern Cross Drive, Robey Street and O'Riordan Street may be required for some bridge construction work. According to *Technical Report 1 – Traffic and Transport Impact Assessment*, lane closures may result in an increase in travel times and reduce the road capacity, which would result in queuing. The assessment notes that conducting this work during off-peak periods would reduce these impacts.

These access changes are likely to temporarily increase travel times for people's daily commutes or usual trips they make using the local road network. As noted in the existing environment (Section 4.2.2), both residents from the local study area and workers that travel to Bayside LGA for work have a higher reliance on private vehicle usage than Greater Sydney averages. Additional time spent travelling is likely to reduce the time people can spend with families, undertaking leisure and social activities, and cause delays in getting to work and other appointments. This could cause inconvenience for road users. These changes may also result in delays to airport passengers

and workers travelling to and from Sydney Airport. While people may need to allow for more travel time for their trips through the local study area, they are expected to be able to continue to travel to their usual destinations.

Based on the assessment of social impacts above and implementation of recommended mitigation measures outlined in Section 7.1, the above changes would result in a minor impact on residents, employees of local businesses, general community members and vulnerable groups.

Public and active transport network

As discussed in the existing environment (Section 4.2.2), residents from the local study area have higher rates of bus use and cycling to work compared to Bayside LGA and Greater Sydney. The changes to the road network discussed above would affect bus passengers and on-road cyclists. Construction activities related to this project would not impact the use of existing shared use paths at Alexandra Canal or Bourke Road. The on-road cycle routes through Pagewood and Botany may be impacted during construction due to increased construction traffic or detours around construction works. This would lead to social impacts such as reduced amenity for active transport and as reduced time people can spend undertaking activities that are important to them due to detours extending travel times or use of alternative modes of transport.

Temporary closures of footpaths along the northern side of Qantas Drive, Robey Street and O'Riordan Street would change accessibility for pedestrians. Appropriate diversions would be provided to maintain pedestrian access along these roads.

At times, changed traffic and pedestrian conditions could deter some people, particularly vulnerable groups, from taking usual routes or making some trips at certain times. Vulnerable groups such as children, older people and people with a need for assistance may have less capacity to adapt to or navigate the changes. The existing environment in Section 4.3 indicated there are higher proportions of couples with children in Pagewood and Botany, and elderly residents in Pagewood. These changes may lead to reduced social interaction, which could result in risk of social isolation for some of those groups that rely more on their social networks for their wellbeing.

Based on the assessment of social impacts above and implementation of recommended mitigation measures outlined in Section 7.1, the above changes would result in a minor impact on residents, employees of local businesses and general community members, with potential for these impacts to be medium-minor for vulnerable groups.

Parking

As noted in *Technical Report 1 – Traffic and Transport Impact Assessment*, on-street parking in the local study area is limited as streets are narrow, and available street parking is often restricted to residential permit holders.

As described in Chapter 7 of the EIS, some parking would be available for construction workers within the main construction compounds within the existing rail corridor, with shuttle transportation moving workers to the smaller compounds and work areas.

Where space is available, some parking would be provided within the construction compounds and/or work areas within the existing rail corridor. Sufficient off-street parking would be provided for all workers and contractors, which is expected to reduce the use of on-street parking by the construction workforce. Based on the assessment of social impacts above and implementation of recommended mitigation measures outlined in Section 7.1, the above changes would result in a generally negligible impact on road users, and local residents in Mascot, Botany and Pagewood. Impacts to local businesses as a result of parking changes are assessed in Section 6.1.1.

6.1.4 Community infrastructure

This section considers the potential construction impacts on the use and function of community infrastructure facilities discussed in Section 4.4. Potential amenity and access changes identified in other technical studies and chapters prepared for the EIS (discussed in Section 3.2.3) are discussed below. This section assesses the social impacts resulting from these changes on users of the affected community facilities.

Open space and recreation facilities

Several open spaces and recreation facilities are located adjacent to or in proximity to the project site, including: Coleman Reserve; McBurney Avenue Reserve at Botany Road; Botany Wetlands; Booralee Park; Garnet Jackson Reserve; Gaiarine Gardens; Eastlake Golf Club; and Botany Aquatic Centre. Construction activities would likely affect the amenity of these facilities including temporary increased noise, vibration and dust as well as changes to the visual environment such as views of construction activities and removal of vegetation within the existing rail corridor (as discussed in Section 6.1.2). This may cause nuisance and reduce some people's ability to utilise the outdoor spaces at optimum function or enjoyment.

McBurney Avenue Reserve is a small passive open space which provides connectivity between McBurney Avenue and Botany Road. The reserve is likely to be used as a pedestrian thoroughfare, and may also be used by local residents and workers for passive recreation. The reserve is being considered as a material storage area (discussed in Section 6.1.3). If the reserve is utilised as a storage area, public access would be restricted to the existing walking paths only. Users may not be able use the park for passive recreation, and may choose to visit an alternate park.

McBurney Avenue Reserve, as well as Coleman Reserve, and the Botany Wetlands are already affected by airport, rail and road-related noise. It is noted that there are limited formal public access routes through the Botany Wetlands. Coleman Reserve, similar to McBurney Avenue, is a small passive open space which provides pedestrian connectivity between the roads on either side. These open spaces may be used by nearby workers during their breaks. It is considered unlikely that local residents would regularly utilise these open spaces for active or passive recreation, given that there are other nearby areas that offer greater amenity and features (for example, John Curtin Memorial Reserve (High Street), open space at 55 McBurney Avenue and Booralee Park). Temporary amenity changes during construction may cause some nuisance and reduced enjoyment for pedestrians and users of these open spaces and reserves. Overall, given the existing amenity of these open spaces, the above changes are expected to result in a minor social impact for users of the reserves.

There are a number of open spaces and recreational facilities that would be more highly utilised by the local and regional community due to their size, amenity and features. Booralee Park and Garnet Jackson Reserve are large open spaces that serve local Botany residents. Gaiarine Gardens is one of the limited open spaces available to the local Pagewood community. Botany Aquatic Centre and Eastlake Golf Club are regional facilities that likely serve both local residents as well as people from outside of the local study area. Generally views of the existing rail corridor from these facilities are covered by trees and vegetation however noise generated by the rail operations may be noticeable from parts of the facilities. Temporary amenity changes as a result of construction may cause nuisance to users in areas that are in proximity to the construction activities. Loss of vegetation within the existing rail corridor would result in direct views of construction activities from some parts of these facilities. These changes could reduce the enjoyment of these areas for some users particularly for passive and leisure activities however it is generally considered that most users would be able to continue to enjoy most areas.

As discussed in Section 6.1.3, construction would result in increased travel times for road users using the local road network. This could inconvenience people visiting Booralee Park, Garnet Jackson Reserve, Gaiarine Gardens and Botany Aquatic Centre by private vehicle, public or active transport. It is noted that access to Eastlake Golf Club is via Gardeners Road so access changes are not expected to affect their users, however users may experience an increase in travel time if they approach Eastlake Golf Club from the south-east. Increased travel times could potentially deter some local users, particularly vulnerable users such as children, older people and people with need for assistance, from accessing some of these facilities. This may occur due to real or perceived barriers to travel generated by increased construction traffic particularly near residential areas

within the local study area. For vulnerable residents living in Botany and Pagewood, this could potentially reduce their social interactions and lead to risk of social isolation.

Based on the assessment of social impacts above and implementation of recommended mitigation measures outlined in Section 7.1, the project would result in a minor impact to users within some areas of Booralee Park, Garnet Jackson Reserve, Gaiarine Gardens, Botany Aquatic Centre and Eastlake Golf Club. Impacts to users of Coleman Reserve, McBurney Avenue Reserve and Botany Wetlands are generally expected to be negligible.

Education and child care services

Several education and child care services are located along proposed haulage routes identified in Section 6.1.3 which would experience increased heavy vehicle movements. These include Botany Public School, Hippo's Friends Child Care Centre, Botany Bay Pre-School, All Star Early Learners and John Brotchie Memorial Nursery School. As these facilities are located either adjacent to or in proximity to these routes, there is potential for concerns about actual or perceived safety risks to students and children at these facilities.

Based on the assessment of social impacts above and the implementation of mitigation measures outlined in Section 7.1, the project would result in a minor impact to users and their families of the education and child care services mentioned above.

Table 6.1 Summary of social impacts during construction

Social impact category	Source of impact	Potential social impact	Nature, type and duration of impact	Level of impact
Employment and economy	Construction workforce required for the project (about 270 people during non-possession work and about 405 people during possession work).	Direct employment opportunities for skilled workers across Greater Sydney.	Positive Direct Short term	N/A
Employment and economy	Spending by construction workforce at local businesses, such as food, beverage and retail services close to the project site.	Increased income generation for local businesses.	Positive Indirect Short term	N/A
Employment and economy	Parking restrictions for local business owners, employees, and customers of the business.	Potential increase in time it takes to park, and added nuisance for local business owners' employees and customers to the business, which could reduce income.	Negative Direct Short term	Negligible to Minor.
Amenity	Temporary and sporadic increased noise at residential properties and local businesses near Joyce Drive and Botany Road, as well as in Botany and Pagewood, from construction activities within the existing rail corridor and construction compounds.as well as heavy vehicles along haulage routes on local roads.	Reduced amenity of nearby residential properties and local businesses could reduce the enjoyment of outdoor areas, including backyards and balconies, as well as indoor areas if people need to close windows and doors which can also reduce fresh air internally.	Negative Direct Temporary	Minor impact on residents, owners and employees of local businesses, with potential for medium-minor impact on vulnerable groups.
Amenity	Temporary and sporadic increased noise at some accommodation facilities in Mascot, from construction activities within the existing rail corridor.	Reduced amenity for users of accommodation facilities could reduce the enjoyment of outdoor areas and result in people closing windows whilst indoors.	Negative Direct Temporary	Negligible intermittent impact on users of accommodation facilities.
Amenity	Temporary and sporadic vibration that exceeds human comfort in residential areas adjacent to the project corridor.	Reduced amenity of nearby residential properties, local businesses and accommodation facilities which may result in the interruption of day to day activities, such as conversation, listening to the radio, or watching television.	Negative Direct Temporary	Minor and intermittent, with potential for medium-minor impact on vulnerable groups.

Social impact category	Source of impact	Potential social impact	Nature, type and duration of impact	Level of impact
Amenity	Temporary and sporadic noise and vibration at residential areas adjacent to the rail corridor, as well as accommodation facilities, due to construction works during the night time.	Potential sleep disturbance for some residents and hotel guest can lead to tiredness which can affect people's moods, ability to concentrate on work and other activities, increase irritation and therefore potentially add to strain on personal or other communication and relationships.	Negative Direct Temporary	Medium-minor on residents and hotel users, with potential for medium impact on vulnerable groups.
Amenity	Nearby residential areas would experience changes to visual amenity as a result of direct views of construction activities, equipment and compounds, and the removal of vegetation within the existing rail corridor which may currently screen some of these views from residences.	It is likely that residents currently experience views of the rail corridor and passing trains and therefore may not be as sensitive to visual changes during construction such as views of construction infrastructure. However the removal of screening trees and vegetation may be a more obvious change. This may affect the values of some of these residents, in particular residents of Botany and Pagewood where the character change will be most noticeable, and diminish their sense of pride in their local area.	Negative Direct Short term	Minor impact.
Amenity	Dust may be generated by construction activities and heavy vehicle movements.	Increased dust may lead to some residents altering their way of life, such as closing windows of houses or vehicles, or spending limited time in backyards or on balconies. Residents and employees of local businesses may also need to spend more time cleaning indoor or outdoor surfaces due to settling dust. This may lead to a temporary nuisance.	Negative Direct Temporary	Minor impact with potential for medium-minor impact on vulnerable groups.
Access	Construction would result in increased construction traffic, road or lane closures, and changes to access arrangements near construction compounds.	Access changes are likely to temporarily increase travel times for people's daily commutes or usual trips. Additional time spent travelling is likely to reduce the time people can spend with families, undertaking leisure and social activities, and cause delays in getting to work or other appointments.	Negative Direct Temporary	Minor impact.
Access	Construction would result in changes to increased construction traffic, road or lane closures, and changes to access arrangements near construction compounds.	Access changes are likely to temporarily increase travel times for people's commutes and trips by bus and cycling. Increased travel times may reduce time that people can spend undertaking activities that are important to them.	Negative Direct Temporary	Minor impact.

Social impact category	Source of impact	Potential social impact	Nature, type and duration of impact	Level of impact
Access	Construction would result temporary footpath closures/diversions, as well as road traffic changes.	Appropriate diversions would be provided to maintain pedestrian access along roads affected by the project. At times, changed traffic conditions could deter some people, particularly vulnerable groups, from taking usual routes or making some trips at certain times. Vulnerable groups such as children, older people and people with a need for assistance may have less capacity to adapt to or navigate the changes.	Negative Direct Temporary	Minor impact on residents, employees of local businesses and community members, with potential for medium-minor impact on vulnerable groups.
Access	Sufficient parking for construction workers would be provided within the project site.	Alternate parking sites would decrease the demand for street parking by construction workers near the project site and reduce the potential for nuisance to local Mascot, Botany and Pagewood residents who utilise street parking.	Negative Direct Temporary	Negligible
Community infrastructure	McBurney Avenue Reserve potentially utilised for alternative parking and staff facilities for construction workforce.	Restricted or loss of public access which may lead to reduced access for users of the reserve.	Negative Direct Temporary	Negligible
Community infrastructure	Increased construction traffic along haulage routes located adjacent or near education and childcare facilities.	Potential for concerns about actual or perceived safety risks to students and children at education and childcare facilities located along haulage routes due to increased heavy vehicle movements.	Negative Direct Temporary	Minor
Community infrastructure	Construction activities would likely affect the amenity of open space and recreation facilities including temporary increased noise, vibration and dust as well as changes to the visual environment. Construction would also result in changes to access for road users visiting Booralee Park, Garnet Jackson Reserve, Gaiarine Gardens and Botany Aquatic Centre, including increased construction traffic, road or lane closures, and changes to access arrangements near construction compounds.	Temporary amenity changes could reduce the enjoyment for some users particularly for passive and leisure activities. Increased travel times could inconvenience people visiting some facilities by private vehicle, public or active transport. This could potentially deter some local users, particularly vulnerable users living in Botany and Pagewood, from accessing some facilities due to real or perceived barriers to travel generated by increased construction traffic.	Negative Direct Temporary	Minor impact to users within some areas of Booralee Park, Garnet Jackson Reserve, Gaiarine Gardens, Botany Aquatic Centre and Eastlake Golf Club.

6.2 Impacts during operation

6.2.1 Employment and economy

The project would ultimately lead to increased freight rail efficiency, due to increased train movements and increased capacity for potential extended container and interstate trains. It would provide for more efficient distribution of freight to and from Port Botany and logistic centres in Western Sydney. It is also expected to reduce the number of container movements transported by heavy vehicles and reduce congestion on the local road network.

Based on the above, the project is expected to result in employment and economic benefits to Greater Sydney communities (ARTC, 2018). According to the Port Botany Duplication Development Phase Project Proposal Report (ARTC, 2018), the resulting efficiency to the freight network would streamline costs in the supply chains for businesses across NSW.

Less congestion on the local road network would benefit the many workers who currently travel by road through the local study area, including those employed in airport and port-related industries, surrounding employment areas as well as passengers travelling via the airport for business purposes. The removal of trucks from the road network also leads to economic benefits, saving on accident costs and reducing local pollution (ARTC, 2018).

The project would integrate with the Sydney Freight Network and contribute to improved efficiency of Sydney's economic supply chain and movement of goods to businesses in Greater Sydney. This could indirectly benefit business owners and employees through increased productivity, which could increase income generation. This could also support the development of businesses and employment opportunities around logistic centres in Western Sydney, which would benefit communities in Greater Sydney.

6.2.2 Amenity

Noise and vibration

According to *Technical Report 2 – Noise and Vibration Impact Assessment*, despite the high existing noise levels from the operation of the freight rail line, the project would lead to noticeably increased noise levels on residential areas and accommodation facilities adjacent to the rail corridor due to:

- increased train speed through the project site
- a higher volume of trains through the project site
- the new second track would be located closer to some residential properties near Myrtle Street.

Noise mitigation would be considered where feasible and reasonable, and could include architectural modifications to residences which qualify for treatment, as well as noise walls. Noise mitigation measures will be determined during detailed design.

The current number of freight train movements is dependent on demand. Current operational train movements are 20 per day in each direction. Based on typical train movements, the project could result in an increase to an expected 38 daily movements by 2025 and 45 daily movements by 2030 in each direction (see Chapter 6 of the EIS for more detail). This would increase the number of occurrences of noise and vibration generated by train movements that are experienced by nearby residential areas. It is expected that the type of trains that would be used for operation would be similar to those that currently use the Botany Line, therefore the duration of noise and vibration when a train passes would be similar to what is currently experienced. It is noted that residents already experience noise and vibration from the existing rail operations and may not be as sensitive to the amenity change from additional train movements during the day time. For some residents and employees of local businesses, the gradual increase in the number of occurrences could be noticeable and cause nuisance.

Currently, there are times where freight trains are required to idle on the tracks to allow for overtaking on the section of single track. Freight trains typically leave their engines running while waiting to be overtaken, resulting in

the generation of noise. The project would remove the requirement for trains to dwell in passing loops, which may reduce currently levels of noise from the operation of the freight rail. However, this is not likely to be noticeable to the local community as there will be an increase in noise associated with the increase in number of freight trains.

An increase in train movements during the night time has the potential for sleep disturbance at some properties and accommodation facilities adjacent to the rail corridor, and in particular at locations where there are rail points and crossovers. This could lead to similar social impacts of sleep disturbance as discussed in Section 6.2.2. Due to standard business operating hours, employees of local businesses are not likely to be impacted by increased noise at night time.

Implementation of mitigation measures to address noise impacts will be considered during detailed design. Mitigation measures may include architectural modifications to residences in close proximity to the project site, with additional noise walls or barriers also possible in some locations. Based on the assessment of social impacts above and implementation of recommended mitigation measures outlined in Section 7.1, operational noise during the day time would result in a minor impact on residents and general community members in proximity to the project. Noise from additional train movements at night time may result in a medium-minor impact on residents. There is potential for noise impacts during both the day and night to be medium on vulnerable groups in close proximity to the project.

Noise as a result of operation from the project may result in a negligible impact on users of accommodation facilities during both the day and night.

Visual and landscape

Operation would result in a new second track within the rail corridor and increased number of trains that may be visible to nearby residential areas and accommodation facilities. As noted in the construction impact assessment (Section 6.1), some residents directly adjacent to the corridor would have existing views of the rail corridor and passing trains, therefore views of additional rail infrastructure would unlikely affect their day to day activities.

Where reasonable and feasible, the project would reinstate vegetation at appropriate locations to provide screening for adjacent residential properties. For residents whose views were altered due to the removal of trees and vegetation within the rail corridor during construction, new or reinstated vegetation may screen the rail infrastructure reducing the visual change experienced by these residents. As the vegetation matures, it is expected that the visual change would be lessened over time.

According to *Technical Report 11 – Landscape and Visual Impact Assessment*, where reinstated vegetation would not be possible, some residents' views overlooking the rail corridor would be permanently altered. This would be a minor change to their views, which may affect the values of these residents and diminish their sense of pride in their local area. However, generally it is considered unlikely that this visual change would affect their day to day activities.

Based on the assessment of social impacts above and implementation of recommended mitigation measures outlined in Section 7.1, visual change would result in a generally negligible impact on most residents, employees and owners of local businesses, general community members and vulnerable groups in proximity to the project.

Air quality

Changes to air quality during the operation of this project are not anticipated (see *Technical Report 3 – Air Quality Impact Assessment*). The operational air quality assessment concluded that air quality impacts are not anticipated for any pollutants. Operational air quality impacts from the Project were not deemed to be significant, and therefore are unlikely to change people's day to day activities.

6.2.3 Access

Given that the project would be within the existing rail corridor, changes to access and connectivity of residents, employees of local businesses and general community members are not expected.

Changes to the road network and on-road cycle routes that occur during construction would be restored to their condition prior to the construction of the project. There would be no permanent impact to existing active transport routes and the project would not preclude future links within the study area.

As discussed in Section 6.1.3, as the project improves efficiency for rail freight movements from Port Botany, an increase in the rail modal share for container freight movement is expected. As such the number of container movements transported by heavy vehicles is expected to reduce leading to less congestion on the local road network. This could improve traffic flow and travel times for road users benefitting local residents, commuters and general community members moving through the local study area. This may increase their connectivity to various destinations in the local study area for personal and business purposes, including visiting their social networks, Sydney Airport, Port Botany, employment areas and community infrastructure.

6.2.4 Community infrastructure

As discussed in the construction impact assessment (Section 6.1), community infrastructure within proximity of the rail corridor are influenced by noise generated by the existing rail operations. Noise generated by additional train movements during operation (discussed in Section 6.2.2) is unlikely to affect users of the facilities discussed in the construction impact assessment (Section 6.1) and therefore a negligible social impact is expected.

Table 6.2 Summary of social impacts during operation

Social impact category	Source of impact	Potential social impact	Nature, type and duration of impact	Level of impact
Employment and economy	Increased freight rail efficiency and improved efficiency of Sydney's and the wider economic supply chain and movements of goods to businesses in Greater Sydney and the wider region.	Indirect benefit to business owners and employees in the Greater Sydney region through increased productivity, which could increase income generation.	Positive Indirect Long term	N/A
Amenity	Increased noise and vibration generated by train movements during the daytime.	Nearby residents and employees of local businesses already experience noise and vibration from the existing rail operations and may not be as sensitive to the amenity change from additional train movements during the day time. For some residents and employees of local businesses, the gradual increase in the number of occurrences could be noticeable and cause nuisance.	Negative Direct Long term	Minor impact.
Amenity	Increased noise and vibration generated by train movements during the night time.	Potential sleep disturbance for some residents and users of accommodation facilities can lead to tiredness. This can affect people's moods, ability to concentrate on work and other activities, increase irritation and therefore potentially add to strain of personal or other communication and relationships.	Negative Direct Long term	Medium-minor impact, with the potential for medium impact on vulnerable groups.
Amenity	Decrease in noise associated with idling locomotives during day and night.	Potential improvement to the noise levels associated with freight movements, due to the lack of idling freight trains. However, this is not likely to be noticeable to the local community as there will be an increase in noise associated with the increase in number of freight trains.	Positive Indirect Long term	N/A
Amenity	Visual changes resulting from the new second track within the rail corridor, and increased number of trains that may be visible to nearby residential areas and accommodation facilities.	Where reinstated vegetation is not possible, some residents' views overlooking the rail corridor would be permanently altered, which may affect the values of these residents and diminish their sense of pride in their local area.	Negative Direct Long term	Negligible impact.
Amenity	Operational impacts to air quality are not expected as a result of the project.	Negligible social impacts to residents and vulnerable groups as a result of the operation of the project.		Negligible impact.

Social impact category	Source of impact	Potential social impact	Nature, type and duration of impact	Level of impact
Access	Container movements transported by heavy vehicles is expected to reduce due to a shift in rail modal share over time, leading to less congestion on the local road network.	Less congestion could improve traffic flow and increase people's connectivity to various destinations in the local study area for personal and business purposes, including visiting the airport, port, employment areas, community infrastructure and social networks.	Positive Indirect N/A	N/A
Community infrastructure	Amenity of community infrastructure, located adjacent to the project site as a result of noise generated by additional train movements during operation.	Increased number of noise occurrences due to additional train movements is unlikely to affect users of local community facilities.	Negative Direct Long term	Negligible impact.

6.3 Cumulative impacts

This section assesses the cumulative impacts of the construction and operation of the project with other proposed major developments in the surrounding area (described in Section 6.3.1).

6.3.1 Other proposed major developments in the surrounding area

There are several major developments proposed in the vicinity of the project that may result in concurrent construction and operation with the project. These are described in Table 6.3.

Table 6.3 Summary of other proposed major projects in the area

Proposed major development	Description
Airport East	This project is currently in construction, and involves the upgrade of roads east of Sydney Airport, and the removal of the rail level crossing at General Holmes Drive through the construction of an underpass. The construction of this project is likely to be completed prior to the construction of Botany Rail Duplication project.
Airport North	The project is currently in construction, and is immediately adjacent to the Botany Rail Duplication project site. This project involves upgrading of roads north of Sydney Airport in order to improve traffic flow and connections to Sydney Airport and Port Botany. The construction of this project is likely to be completed prior to the construction of Botany Rail Duplication project.
F6 Extension Stage 1	The F6 extension is a new M5 Motorway from Arncliffe to President Avenue at Kogarah. The targeted date for opening is 2024, meaning that construction will likely occur concurrently with Botany Rail Duplication.
Sydney Airport T2/T3 Ground Access Solutions and Hotel	This project involves the improvements to the ground access for T2/T3 terminals at Sydney Airport. It also involves the construction of the new Sydney Airport hotel. The project aims to improve connectivity for vehicles, public transport, cyclists and pedestrians in and around the entrance to Sydney Airport's T2/T3 terminal. The project will be developed in seven stages. The project is still in construction, with no confirmation of estimated completion date. It is possible that this project would be in construction phase concurrently with the Botany Rail Duplication project.
Sydney Gateway	Roads and Maritime Services will be delivering the Sydney Gateway road project which is located adjacent to the Sydney Airport Terminal T2/T3, and extending into Tempe. The project alignment is directly adjacent to Botany Rail Duplication and the north of the project corridor. Sydney Gateway is proposed to improve road connectivity for passenger and freight traffic travelling in and around Sydney Airport. Sydney Gateway is due to begin construction in 2020, and will likely be constructed concurrently with Botany Rail Duplication project.
Qantas Flight Training Centre	The flight training facility is proposed to be relocated 150 metres east of the existing site. This is immediately adjacent to the project site. Construction is expected to begin in September 2019, and may occur concurrently with the construction of Botany Rail Duplication project.

Proposed major development	Description
WestConnex M4-M5 Link	This new underground tunnel project includes the proposed multi-lane road link between M4 East project at Haberfield and the New M5 project at St Peters. Construction is currently underway and expected to be completed in early 2023. This project is located to the north-west of the Botany Rail Duplication project, and construction will likely occur concurrently.
WestConnex New M5	The WestConnex New M5 project includes new multi-lane twin motorway tunnels between the M5 East Motorway and St Peters interchange, a new road interchange, and upgrade of local roads at St Peters to Mascot. The St Peters interchange will provide motorists with connections to Alexandria and Mascot. It also includes connections to M4-M5 Link, and underground connection points for the M4-M5 Link and the proposed F6 Extension. The project is due to be operational by 2020, however there still may be some concurrent construction with Botany Rail Duplication project.

6.3.2 Construction

Should the construction of the project occur concurrently with other major developments, there is potential for several cumulative social impacts to occur:

- increased demand for construction workforce due to resourcing across projects, which would lead to more job and income generation opportunities available to residents across Greater Sydney
- further demand for services and increased expenditure at local and regional businesses through purchases made by the combined construction workforce and procurement of local goods and services for construction, which would benefit business owners
- increased noise and vibration on residential properties and accommodation facilities near O'Riordan Street, Baxter Road and Joyce Drive from the concurrent construction with Sydney Airport developments and Sydney Gateway road project, which could lead to further nuisance and annoyance felt by these residents
- increased occurrence of delays on roads due to combined construction vehicle movements affecting road users on the local road network, which could lead to further inconvenience and require users to allow for more travel time for their trips through the local study area including:
  - Qantas Drive, Robey Street and Seventh Street
  - General Holmes drive and Wentworth Avenue
  - Botany Road and Wentworth Avenue.

In the event the construction of the project occurs after construction of other major developments in the vicinity have completed construction, there is a potential for the affected community to experience construction fatigue. This is likely to impact the residents and workers in Mascot, who may have the highest exposure to construction related activities from consecutive or concurrent projects in their area. This may lead to an increase in annoyance from construction related activities, such as noise and vibration, or changes to road or pedestrian access. Affected community members may experience diminished sense of pride and enjoyment in their properties and surroundings. These impacts may affect peoples' way of life, including their capacity to participate in work and community activities, affect personal and social relationships, and reduce social interactions. There is potential for these social impacts to be greater on vulnerable groups, who may be more sensitive to changes. This includes cultural and linguistically diverse people living and working in Mascot, as well as couples living with children.

6.3.3 Operation

Operation of the Botany Rail Duplication project together with Sydney Gateway road project would lead to increased freight efficiency to both Sydney Airport and Port Botany, which would likely increase the economic benefits for Greater Sydney. This includes indirect economic benefits for supporting industries, such as intermodal terminals and logistics businesses, through the increase in rail freight efficiency.

Residences and accommodation facilities located near the Joyce Drive and O'Riordan Street intersection would potentially be affected by operational noise from both Botany Rail Duplication and Sydney Gateway road project. However a cumulative assessment is not possible due to the difference in noise characteristics between rail and road transportation, so the significance of this impact is not known (see *Technical Report 2 – Noise and Vibration Impact Assessment*). Despite this, community members may perceive noise impacts, which can affect people's sense of pride and enjoyment of their properties and surroundings.

The operation of the Botany Rail Duplication project and other developments in the local area would result in increased local and regional connectivity due to new road connections and extensions, combined with the increase in rail modal share for freight movements. Reduced traffic congestion and improved connectivity on the local road network due to decreased freight truck movements may lead to shorter travel times for local residents and community.

Local businesses, in particular those located in town centres such as Mascot, and businesses along Botany Road may benefit from improved amenity as a result of reduced freight truck movements and the remaining freight trucks taking an alternate route and bypassing the Mascot town centre. This may benefit owners, employers and customers by creating a more pleasant environment in the area.

Table 6.4 Summary of cumulative social impacts during construction and operation

Social impact category	Source of impact	Potential social impact	Nature, type and duration of impact	Level of impact
Cumulative impacts – construction				
Employment and economy	Increased demand for construction workforce due to resourcing across projects.	More jobs available to workers across Greater Sydney.	Positive Indirect Short term	N/A
Employment and economy	Further demand for services and increased expenditure at local and regional businesses through purchases made by the combined construction workforce and procurement of local goods and services for construction.	Increased income generation for local businesses	Positive Indirect Short term	N/A
Amenity	Increased occurrence of periods of increased noise, and at times an increase in noise levels at residences and accommodation facilities near O'Riordan Street, Baxter Road, Joyce Drive and Robey Street, when construction of Botany Rail Duplication, Sydney Airport developments or Sydney Gateway road project occur concurrently.	Increased noise could lead to further nuisance and annoyance felt by these residents. This may lead users of these facilities to spend less time outdoors, or close windows whilst indoors.	Negative Direct Temporary	Minor impact with the potential for moderate impacts on vulnerable groups.
Amenity	Reduced freight truck movements due to increase in freight rail capacity, as well as alternate routes for freight trucks to take.	Improved amenity in Mascot town centre for owners and employees of local businesses.	Positive Indirect Long term	N/A
Access	Increased occurrence of delays on roads due to combined construction vehicle movements affecting road users on the local road network.	More delays could lead to further inconvenience to road users and require users to allow for more travel time for their trips through the local study area.	Negative Indirect Temporary	Minor impact.
Construction fatigue	Cumulative and consecutive construction activities occurring where Botany Rail Duplication overlaps with construction of other major developments.	Construction fatigue leading to annoyance, inconvenience, diminished sense of pride, reduced capacity to participate in work and community activities, affect personal relationships, reduce social interactions.	Negative Indirect Short terms	Minor impact, with potential for these impacts to be medium for vulnerable groups.

Social impact category	Source of impact	Potential social impact	Nature, type and duration of impact	Level of impact
Cumulative impacts – operation				
Employment and economy	Increased freight efficiency on Sydney's road and rail networks and improved efficiency of Sydney's economic supply chain and movements of goods to businesses in Greater Sydney.	Indirect benefit to business owners and employees through increased productivity, which could increase income generation.	Positive Indirect N/A	N/A
Amenity	Potential for cumulative noise near the Joyce Drive and O'Riordan Street intersection from the operation of Botany Rail Duplication and Sydney Gateway road project.	Community members may perceive a change in noise, which may affect sense of pride and enjoyment of their properties and surroundings.	Negative	Amenity
Access	Increased road connectivity due to upgrades to local and regional road network, as well as reduced traffic congestion as a result of less freight being moved by road.	Benefit to local residents and employees of local businesses, as reduced travel times can lead some people to spend more time engaging in activities they enjoy, or spending time with families.	Positive Indirect Long-term	N/A

7. Management of impacts

7.1 Approach

As described in the EIS Chapter 6 (Project features and operation) and Chapter 7 (Construction), design development and construction planning has focused on avoiding and/or minimising the potential for environmental impacts during all key phases of the process.

The project site is primarily located in a semi-industrial and commercial area of Sydney, with few urban residential areas and community uses nearby. The project's social impacts are therefore less than would be associated with a densely populated residential project area. The project has purposely been designed to avoid or minimise socio-economic impacts through:

- limiting land required by the project
- maximising use of the existing rail corridor for construction compounds and activities.

Based on the outcomes of the impact assessment, most impacts generated by the project are expected to result from construction activities. Construction impacts would mainly relate to reduced amenity due to noise and vibration changes near residential properties and community infrastructure facilities, as well as access changes leading to inconvenience for road users on the local road network. It is anticipated that construction-related amenity and access impacts would be managed through the mitigation measures recommended in the following technical reports:

- *Technical Report 1 – Traffic and Transport Impact Assessment*
- *Technical Report 2 – Noise and Vibration Impact Assessment*
- *Technical Report 3 – Air Quality Impact Assessment*
- *Technical Report 11 – Landscape and Visual Impact Assessment*
- *Technical Report 13 – Health Impact Assessment.*

Mitigation measures would be managed through the following:

- ARTC's Site environmental management plans (EMP(s)) for enabling works
- project specific CEMP for main construction works
- community and stakeholder engagement plan
- ARTC's environmental management system for operation of the project.

Even with the approach to avoid and minimise impacts and the mitigation measures recommended in Table 7.1, there is still potential for residual social impacts to affect local residents and community members although these are anticipated to be minor. These may include:

- the feeling of being inconvenienced by construction activities (e.g. increased travel times, construction noise and dust, views of construction activities)
- potential for construction fatigue to those most exposed to construction related activities from consecutive or concurrent projects in their area leading to increased annoyance, such as noise and vibration, or changes to road or pedestrian access
- reduced access to McBurney Avenue Reserve during construction.

A robust stakeholder engagement plan should be developed and implemented prior to and during construction to communicate with key stakeholders and the community about the project and expected changes, and outline opportunities to provide feedback on the project. This may allow residents and community members to anticipate the changes and plan for these changes, such as close windows and doors when there are nearby construction activities, or allow for more travel time for their trips through the local study area.

7.2 List of mitigation measures

Additional mitigation measures that would be implemented to address potential social impacts are listed in Table 7.1 and would be incorporated into the relevant management plans.

Table 7.1 Mitigation measures

Stage	Impact	Measure
Construction	Amenity and access changes due to construction	The community will be informed about changes to amenity and access through the community and stakeholder engagement plan. The plan will include: ■ communication with residents to provide an overview of the project, and the likely nature, extent and duration of amenity and access changes as a result of construction. Particular attention will be given to ensuring any vulnerable groups are appropriately targeted. These will include families with children, people with need for assistance, older people, people with disability, people with mobility difficulties or medical conditions, and culturally and linguistically diverse people in Mascot ■ communication of measures to minimise construction fatigue experienced by residents, businesses and general community members such as construction respite periods associated with out of standard construction hours works ■ communication of the complaints and enquiry procedure through which community members can contact the project to raise any concerns regarding amenity and access changes such as the ARTC Enviroline.
	Amenity and access changes affecting community infrastructure facilities and users due to construction	Targeted communication will be carried out with the following stakeholders: ■ Bayside Council about timing of the most noise intensive works and changed traffic conditions that may affect public open space areas and active transport routes within the LGA ■ community infrastructure and accommodation facilities (hotels) if direct impacts are identified such as temporary changes to access or utility services.
Operation	Amenity change (noise) due to operation	The operational noise and vibration report (ONVR) will include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures. This would the use of the Enviroline mechanism for communication with local residents and businesses impacted by at-property noise mitigation measures.

8. Conclusion

This report has assessed the potential social benefits and impacts resulting from the construction and operation of the project, as well as cumulative impacts from other major developments in the surrounding area.

During construction, social benefits of the project mainly relate to increased construction jobs and income generation opportunities available to residents and workers from the Greater Sydney area in the short term. Construction may lead to increased expenditure at local and regional businesses, which would benefit business owners and employees.

Project construction activities however are expected to result in temporary to short term social impacts, generally limited to local residents and the general community passing through or near the project site. These are described below:

- amenity changes (from increased noise, vibration and dust) for nearby residences, accommodation facilities and local businesses, which may lead to interruption of daily activities or sleep disturbance
- increases in travel times for people's daily commutes as a result of construction traffic or access arrangements, which would likely to reduce the time people can spend with families, undertaking leisure activities and cause delays in getting to work or other appointments
- changes to pedestrian access routes, which may deter some people, particularly vulnerable groups such as people who need assistance, from taking usual routes or making certain trips
- impacts to the amenity, and in some cases use of, community facilities in the area adjacent to the project site, in particular Botany Aquatic Centre, Eastlake golf club and users of Booralee Park and Gaiarine Gardens, which could reduce the enjoyment for some users, particular for passive and leisure activities.

These social changes may cause nuisance, reduce some people's ability to enjoy their usual social activities and likely affect the values of local residents, such as their sense of pride and enjoyment of their local area. The above changes to community infrastructure could lead to impact on the established social networks or sense of community for some local users. Generally, these impacts would be greater on vulnerable groups living in the area, who may have less capacity to adapt to changes. This includes families with young children, people who need assistance, older people, people with disability, people with mobility difficulties or medical conditions, or culturally and linguistically diverse people.

In addition to the general environmental management measures recommended in other Technical Reports (identified in Section 3.2.6), it is recommended that a community and stakeholder engagement strategy are implemented. These strategies will assist with the management and monitoring of social impacts. In particular, communication with residents and the general community prior to and during construction about the project and expected changes, and targeted consultation with affected stakeholders is expected to help groups understand and adapt to potential impacts.

Subject to detailed design, operation of the project may lead to some ongoing amenity impacts as a result of noise and vibration. These would primarily impact residences in close proximity to the existing rail corridor, including along Robey Street, Baxter Street, Botany Road, Myrtle Street, Bay Street and Ellis Street. There also may be some reduced amenity for users of Botany Aquatic Centre and Eastlake Golf Club, as well as some accommodation facilities adjacent to the rail corridor.

Overall, the project is expected to result in long term benefits to local and Greater Sydney communities. These mainly relate to:

- increased rail freight efficiency across the regional and national freight network, which could lead to increased productivity and increased income generation for some businesses and industries
- less congestion on the road due to reduced freight movements made by trucks and increased capacity for freight rail, which may improve connectivity to various destinations for local residents, business owners and workers, and users of community infrastructure in the area.

Consecutive and cumulative construction of Botany Rail Duplication project with other major projects in the area may lead to further reduced amenity and increased travel times for some residents, business owners and local workers. Considering the number of other projects in the area, particularly in Mascot, some residents may experience construction fatigue. A construction fatigue protocol which provides methods for community members to raise issues with projects is expected to help manage this.

Together with other major projects, Botany Rail Duplication is expected to improve freight connectivity, improve the local road network connectivity, and enhance economic productivity.

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Appendix A
Demographic profiles

A1. Demographic profile of Bayside LGA and suburbs in local study area

Demographic indicator	Pagewood Suburb	Botany Suburb	Mascot Suburb	Bayside LGA	Greater Sydney
Total population	3,805	10,817	14,772	156,058	4,823,991
Population density (person per hectare)	18.4	18	14.19	34.07	4.15
Age profile					
Median age	42	36	32	35	36
Under 18 years	22.8%	23.5%	15.7%	19.1%	
85 years and older	2.7%	1.7%	0.9%	2.3%	2%
Cultural diversity					
Aboriginal and Torres Strait Islander	1.8%	2.7%	1.2%	1%	1.5%
People born in non-main English speaking countries	27.9%	23.1%	46.3%	41.1%	29.3%
People that spoke another language, and English not well or not at all	4.3%	3.1%	7.5%	8.5%	6.5%
Educational and employment					
No tertiary qualification	40%	36.8%	35.9%	39.1%	37.7%
Completed Year 12 or equivalent	60.1%	58.2%	69.3%	61.7%	60%
Unemployment	3.9%	3.9%	5.2%	6%	6%

Demographic indicator	Pagewood Suburb	Botany Suburb	Mascot Suburb	Bayside LGA	Greater Sydney
Top industries of employment	Health care and social assistance (11.6%)	Health care and social assistance (10.4%)	Professional, scientific and technical services (10.6%)	Health care and social assistance (10.9%)	Health care and social assistance (11.6%)
	Education and training (10.3%)	Construction (9.2%)	Accommodation and food services (10.3%)	Retail trade (9.9%)	Professional, scientific and technical services (9.8%)
	Professional, scientific and technical services (9.4%)	Transport, postal and warehousing (9.1%)	Transport, postal and warehousing (9.3%)	Accommodation and food services (9.1%)	Retail trade (9.3%)
	Retail trade (9.4%)	Education and training (8.6%)	Health care and social assistance (8.9%)	Transport, postal and warehousing (8.6%)	Construction (8.2%)
Top occupations of employment	Professionals (26.5%)	Professionals (21.4%)	Professionals (25.6%)	Professionals (22.5%)	Professionals (26.3%)
	Clerical and administrative (15.8%)	Clerical and administrative (17.3%)	Clerical and administrative (14.8%)	Clerical and administrative workers (15.1%)	Clerical and administrative workers (14.6%)
	Managers (15.5%)	Managers (14.6%)	Managers (14%)	Managers (12%)	Managers (13.7%)
	Technicians and trades workers (11.5%)	Technicians and trades workers (12.7%)	Technicians and trades workers (12.7%)	Technicians and trades workers (12%)	Technicians and trades workers (11.7%)
Households					
Average household size	2.9	2.8	2.7	2.7	2.72
Couples with children	54.8%	52.6%	41.7%	46.2%	35.3%
One parent families	16.5%	15.8%	12.4%	15.3%	10.4%
Lone person households	22%	20.4%	20%	23%	20.4%
Social housing	8.8%	4.7%	1.2%	10%	4.6%
Low income households (earning less than $650 per week)	15.7%	10.9%	9.9%	17.1%	15.1%

Demographic indicator	Pagewood Suburb	Botany Suburb	Mascot Suburb	Bayside LGA	Greater Sydney
Households without motor vehicles	11.6%	8.0%	16.3%	14.6%	10.7%
Need for assistance					
Need for assistance	5.5%	4.8%	3.4%	5.3%	4.9%
Journey to work					
Train	5.3%	7.8%	32.7%	27.1%	16.3%
Bus	14.1%	10.5%	7.7%	5.8%	6.1%
Car as driver	62.9%	65.5%	41.1%	52.1%	52.8%
Car as passenger	5.8%	5.6%	4.5%	5.0%	3.9%
Cycling	1.1%	1.1%	1.1%	0.7%	0.7%
Walked only	3.0%	3.1%	7.4%	3.7%	4%

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