

Prepared for  
Transport for NSW  
ABN: 18 804 239 602 0

# Elizabeth Drive West Upgrade

## Socio-economic Impact Assessment

08-Sep-2023  
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Client: Transport for NSW

ABN: 18 804 239 602 0

### Prepared by

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## Glossary and abbreviations

Term / Acronym	Description
ABS	Australian Bureau of Statistics
Active transport	Transport that requires individual physical effort to provide mobility. For personal travel, this includes walking, use of a wheelchair or mobility aid, cycling using a bicycle (without power assistance) and power-assisted micromobility (see below). Active forms of transport for freight delivery include both pedal-powered and electric power-assisted cargo bikes
Amenity	Amenity refers to the quality of a place, its appearance, feel and sound, and the way its community experiences the place. Amenity contributes to a community's identity and its sense of place.
CEMP	Construction Environmental Management Plan
Community cohesion	Community cohesion refers to the connections and relationships between individuals and their neighbourhoods.
Construction ancillary facilities	Dedicated areas of land required for construction amenities, parking, materials/equipment storage, mobile asphalt batch plants and stockpiling.
Construction fatigue	Construction fatigue relates to receivers that experience construction impacts from a variety of projects over an extended period of time with few or no breaks between construction periods.
Construction footprint	The area needed to construct the proposal, including for example construction ancillary facilities, access roads, haulage and water quality basins.
Consultation	Inviting feedback from the community and stakeholders to inform a proposal.
CP	Communication Plan
Cumulative impacts	Impacts that, when considered together, have different and/or more substantial impacts than a single impact assessed on its own.
Detailed design	Detailed design broadly refers to the process that the Construction Contractor undertakes (should the proposal proceed) to refine the concept design to a design suitable for construction (subject to Transport for NSW acceptance).
Heavy vehicle	A heavy vehicle is classified as a Class 3 vehicle (a two axle truck) or larger, in accordance with the Austroads Vehicle Classification System.
IER	Index of Economic Resources
Impact	Influence or effect exerted by a project or other activity on the natural, built and community environment.
IRSAD	Index of Relative Socio-economic Advantage and Disadvantage
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
Magnitude of impacts	Severity or scale and intensity, spatial extent and duration of the impact.
Operational footprint	The area needed for the operation of the proposal including the concept design.
Passing trade	Passing trade refers to customers who choose to visit a business because they see it when walking or driving past, or as a matter of convenience when on route to another destination, rather than an intentional trip with that business as the desired destination.
Practice Note	<i>Environmental Impact Assessment Practice Note – Socio-economic assessment (EIA-N05) (Transport for NSW, 2020) (Practice Note).</i>

Term / Acronym	Description
Property	Anything that is owned by a person or entity. Land property can contain more than one lot and Deposited Plan (DP)
Proponent	Transport for NSW ("Transport")
Proposal	The upgrade of about 3.6 kilometres of Elizabeth Drive from The Northern Road at Luddenham to near Badgerys Creek Road at Badgerys Creek where it would connect with the future M12 Motorway.
Public transport	Includes train and bus (government and private) services
REF	Review of Environmental Factors
Roads and Maritime	NSW Roads and Maritime Services, now known as Transport for NSW
SA2	Statistical Area Level 2
Search area	Area reviewed under a database search (varies depending on database and search criteria).
SEIA	Socio-economic Impact Assessment
SEIFA	Socio-economic Indices for Areas
Sensitive receiver	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres, passive recreation areas (including outdoor grounds used for teaching), active recreation areas (including parks and sports grounds), commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation such as caravan parks and camping grounds, restaurants, office premises, retail spaces and industrial premises).
Social infrastructure	Social infrastructure facilities generally operate at a local, district and/or regional level and are defined by the scale of the population catchment they serve.
Socio-economic	Involving combination of social and economic matters
Statistical Area Level 2	Statistical Area Level 2 (SA2), defined by the ABS, are medium-sized general purpose areas built up from whole Statistical Areas Level 1. Their purpose is to represent a community that interacts together socially and economically.
Social locality	Austral – Greendale SA2, Badgerys Creek SA2, Horsley Park – Kemps Creek SA2 and Mulgoa – Luddenham – Orchard Hills SA2.
TMP	Traffic Management Plan
Transport	Transport for NSW
WSA	Western Sydney Airport

## Executive summary

### Purpose

Elizabeth Drive is the main east-west corridor between Liverpool and surrounding suburbs. Currently, between The Northern Road and Badgerys Creek, Elizabeth Drive is predominantly a two lane undivided road with no footpath and no median.

Future projected and planned growth in this region of Western Sydney is expected with the planned development of the Western Sydney Airport (WSA) precinct, as well as related planned land releases for residential precincts and employment zones in the area. This projected growth would require the upgrade of Elizabeth Drive to provide increased capacity between the existing and planned road corridors in the surrounding area, and to support the projected and planned development of the Western Sydney Aerotropolis.

Transport for NSW (Transport) proposes to upgrade about 3.6 kilometres of Elizabeth Drive from The Northern Road at Luddenham to near Badgerys Creek Road at Badgerys Creek, where it would connect with the future M12 Motorway (the proposal).

The purpose of this Socio-economic Impact Assessment (SEIA) is to assess the potential socio-economic impacts that may occur as a result of the construction and operation of the proposal and recommend appropriate safeguards and management measures to manage these impacts. It has been prepared to inform the Review of Environmental Factors (REF) for the proposal.

### Existing socio-economic environment

#### Social locality

The social locality for the SEIA has been defined using the Australian Bureau of Statistics (ABS) geographic boundaries of 'Statistical Area Level 2' (SA2). The following SA2s were chosen as they overlapped with the Proposal:

- Austral – Greendale
- Badgerys Creek
- Horsley Park – Kemps Creek
- Mulgoa – Luddenham – Orchard Hills.

The social locality has been developed with view to the likely direct and indirect areas of influence associated with the construction and operation of the proposal.

#### Economic characteristics

The social locality has a variety of local businesses. To the west in Luddenham there is a local centre with a few stores which provide for the everyday needs of residents. To the north and south of the construction footprint and along Elizabeth Drive, there are various commercial and industrial businesses. A duck farm is located within the construction footprint immediately south of Elizabeth Drive.

The gross regional product of Liverpool, Penrith and Fairfield local government areas (LGAs) have had an overall increasing (positive) trend over the past two decades, which tracks the trend of NSW generally. With the development of the WSA, Western Sydney Aerotropolis and associated land zoning changes, there is likely to be substantial investment in a broad range of industries, including logistics and warehousing and agri-business. The region's population is subsequently expected to double from 740,000 in 2016 to over 1.5 million by 2056. The gross regional product in the local and wider region is, therefore, expected to increase as a result of the planned development and population growth.

#### Access and connectivity

Elizabeth Drive is a State road spanning multiple LGAs, servicing both residents and businesses as well as the Greater Sydney community. Elizabeth Drive spans over 24 kilometres and is the main east-west road connection between The Northern Road, Luddenham (at its western extent) and Elizabeth Street, Liverpool

(at its eastern extent). A major node of connectivity on Elizabeth Drive is the interchange with the M7 Motorway at Cecil Hills.

There are no existing public transport facilities and limited walking and cycling infrastructure within the construction footprint.

## Potential impacts

### Property

The proposal has been designed to minimise the need for land acquisition, as far as practical, and to limit potential for severance and sterilisation of private properties. Subject to detailed design and construction planning, construction of the proposal would require the partial acquisition of 18 privately owned properties. Properties to be partially acquired generally accommodate agricultural, commercial, residential or unknown land uses.

Partial acquisition of properties may require the demolition of some structures such as sheds, where they are within the operational footprint for the proposal. Property adjustments would also be required at these properties, such as adjustments to fencing and farm dams, relocation of sheds, driveways and letterboxes, and a loss of vegetation and grassed areas.

Sufficient notice and fair market compensation would be provided to landowners affected by partial property acquisition. Land acquisition would be carried out in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the Land Acquisition Information Guide (Transport for NSW, 2014).

### Amenity

Construction of the proposal would temporarily increase additional traffic volumes on Elizabeth Drive and local roads and may affect travel times, resulting in minor traffic disruptions and road safety changes. This may also disrupt a residents' and the community's ability to access their homes, workplace, local businesses and community facilities in the local area. The operation of the proposal would, however, greatly increase accessibility and decrease congestion. The ease of access could lead to people feeling more connected to their community and improve health and wellbeing of the community.

The assessment of noise associated with the construction of the proposal indicated that there would be noise exceedances during the daytime and night time. These exceedances were attributed to the close proximity of the construction works to residences. The operational noise impact assessment identified 60 residential receivers along Elizabeth Drive who would experience noise exceedances. Of those, seven would be eligible for the consideration of at-receiver noise treatment. Treatment at each receptor location for affected receivers would be considered further at detailed design.

The construction of the proposal would affect visual amenity by the removal of vegetation, establishment of construction ancillary facilities, installation of construction hoardings and the visual appearance of construction sites, equipment, materials and site sheds. However, these changes would be experienced in the short term and would be reversible to some extent. Once operational, there would be visually prominent change from the baseline. Elizabeth Drive would change from a more informal but busy rural road to an upgraded transport corridor with formalised kerb and gutters and pedestrian / cycle infrastructure. However, considering the ongoing development of the surrounding landscape in response to the construction of the M12 Motorway, WSA and Western Sydney Aerotropolis, these changes are considered appropriate. The proposed tree planting would potentially increase tree cover within the road corridor, which would offset adverse visual effects of the road widening. The landscaping within the road corridor (particularly the planting of shrubs and trees within the central median) would reduce the visual prominence of the widened road corridor within most of the views.

During construction, activities such as demolition, earthworks and road construction have the potential to generate dust, odour and emissions. The real or perceived impact to air quality as a result of construction activities can affect residents and visitors to the area by increasing anxiety and reducing their capacity to enjoy their local environment. The operation of the proposal is predicted to result in an increase in air quality due to anticipated changes in vehicle fleets, with expected increased uptake in vehicles with more stringent emissions standards (or no emissions such as electric vehicles) and reduced number of aging vehicles with lower emission standards.

## **Access and connectivity**

The construction of the proposal would affect the accessibility and connectivity of the social locality. Property access may be temporarily disrupted, the performance of the road network would decrease, loss of connectivity would affect business practices and active transport routes would be impacted.

Once operational, the road network and connectivity would improve. The proposal would provide active transport facilities and infrastructure to enable public transport. This would contribute to a number of direct and indirect social and health benefits such as community cohesion and connectivity. This could potentially improve the mental health of residents and the physical health of those in the social locality, due to the utilisation of available and safe infrastructure.

## **Community identity, values, aspirations and cohesion**

During construction, the proposal would facilitate employment opportunities that would arise through labour hire or the provision of goods and services from local businesses. However, the proposal may not directly align with some goals outlined in the Liverpool, Penrith and Fairfield community strategic plans, such as the transport and access goals due to temporary disruptions to traffic and accessibility.

The operation of the proposal would meet relevant goals in Liverpool, Penrith and Fairfield community strategic plans, and community aspirations outlined during consultation events. These aspirations included, decreased congestion, improved employment opportunities and improved active transport.

## **Cultural heritage**

A Stage 3 PACHCI assessment has been undertaken to assess the impact of the proposal on Aboriginal cultural heritage. Construction activities would result in partial impact to one Aboriginal site, which is considered to be of moderate significance.

There are four items of non-Aboriginal heritage within the construction footprint: Luddenham Road Alignment, McGarvie Smith Farm, McMaster Field Station and Badgerys Creek post office. With the implementation of appropriate management measures, construction or operation of the proposal is not anticipated to directly impact the heritage items.

## **Demographic changes**

The proposal is not expected to affect the overall demographic profile of the social locality as a whole. The workforce for construction of the proposal would be expected to be sourced locally, where appropriate skill sets are available. Given the duration of the construction program (expected to take around 48 months), there is a possibility that some of the construction workforce may choose to relocate to the study area to be close to work. However, this trend is expected to be very limited given the accessibility of the proposal site by private vehicle and location within Greater Sydney, in proximity to existing centres such as Liverpool. As such, it is expected that the construction of the proposal would have a negligible effect on the local residential population and demographics.

As with construction, operation of the proposal is not anticipated to result in a change to the demographic profile of the social locality in its own right.

## **Businesses and the economy**

During construction, businesses may be affected due to delayed or hindered access to workplaces or servicing areas owing to local construction traffic constraints and congestion. This could affect the attendance of customers, impact deliveries, and affect employee productivity. Further, construction activities may impact business amenity and the ability of customers, employees or business owners to enjoy their workplace and daily activities. Construction activity would, however, directly inject economic stimulus benefits into the local, regional and state economies. Some local businesses are likely to benefit from the construction of the proposal through employment opportunities.

During operation, the proposal would provide an increase in transport amenity and improve access and connectivity in the social locality, which would facilitate and encourage increased economic productivity.

## **Cumulative impacts**

Several projects were identified nearby the proposal. Potential cumulative social impacts during construction could include safety risks arising from increased traffic, increased amenity impacts as a result of noise, visual change, dust emissions, and health and wellbeing impacts from construction fatigue.

Cumulative traffic and access impacts leading to delays in travel time could also lead to indirect social impacts such as anxiety, stress and frustration during the construction period. Nearby projects would also provide employment opportunities to the local area through labour for trades people, and business opportunities from supplying materials or renting construction equipment.

The cumulative benefit of the proposal with other projects during operation is expected to result in a substantial net benefit for the community. These benefits may include improved accessibility and connectivity within the social locality. Improved access and connectivity to employment areas would enable economic activity, businesses and employment opportunities.

### **Safeguard and management measures**

Safeguard and management measures would be put in place to minimise impacts and disruptions to local residents and businesses. This would include on-going consultation throughout the construction period.



## 1.0 Introduction

Elizabeth Drive is the main east-west corridor between Liverpool and suburbs to the west. The road runs between The Northern Road at Luddenham and Liverpool city centre. Between The Northern Road at Luddenham and Badgerys Creek Road at Badgerys Creek, Elizabeth Drive is predominantly a two lane undivided road, with no footpath or median.

Future projected and planned growth in Western Sydney is anticipated with the planned development of the Western Sydney Aerotropolis (already underway) and opening of Western Sydney Airport (WSA) in 2026. This has already resulted in an expansion of land zoned to support agribusiness, industrial and commercial purposes within the Western Sydney Aerotropolis, and is expected to generate substantial traffic volumes and place pressure on the local road network.

This projected growth in the region is anticipated to increase the traffic volume on and off Elizabeth Drive.

### 1.1 Proposal overview

Transport for NSW (Transport) proposes to upgrade about 3.6 kilometres of Elizabeth Drive between The Northern Road, Luddenham to near Badgerys Creek Road, Badgerys Creek where it would connect with the future M12 Motorway (the proposal). The proposal is one of two adjacent planned upgrades of Elizabeth Drive between The Northern Road, Luddenham and Duff Road, Cecil Hills (refer to **Figure 1-1**). This includes the following proposals (referred to collectively as the Elizabeth Drive upgrades):

- Elizabeth Drive West Upgrade (the proposal), which is the subject of this Socio-Economic Impact Assessment (SEIA). The proposal is shown on Figure 1-2
- Elizabeth Drive East Upgrade, which includes the upgrade about 7.8 kilometres of Elizabeth Drive between Badgerys Creek Road near the future M12 Motorway and about 600 metres east of Duff Road at Cecil Hills.



**FIGURE 1-1:  
ELIZABETH DRIVE UPGRADE  
OVERVIEW**



- Legend**
- Proposed M12 Motorway
  - Road
  - Watercourse
- Construction Footprint**
- █ East
  - █ West
- Operational Footprint**
- █ East
  - █ West

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**FIGURE 1-2:  
LOCATION OF THE PROPOSAL**



**Legend**

- Construction footprint
- Operational footprint
- LGA boundary
- Road design
- Primary road
- Local road

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## 1.2 Purpose of this technical report

This technical report provides an assessment of the socio-economic impacts associated with the proposal and has been prepared to inform the Review of Environmental Factors (REF). This report contributes to fulfilling the requirements of Section 5.5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which requires that Transport examines and takes into account, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

This SEIA considers the direct, indirect and cumulative socio-economic impacts (where relevant) of the proposal on the following groups/communities:

- Residents (local and regional)
- Businesses including rural enterprises
- Users of social infrastructure, including education facilities, health care facilities, places of worship, and other community services, including open space and recreational facilities
- Commercial road users including freight transport operators
- Private road users.

## 2.0 Proposal description

Transport proposes to upgrade about 3.6 kilometres of Elizabeth Drive from The Northern Road at Luddenham to near Badgerys Creek Road at Badgerys Creek, where it would connect with the future M12 Motorway. The proposal would be carried out within the Penrith and Liverpool local government areas (LGAs). **Figure 1-2** shows the construction footprint, which captures both the construction operational footprints required for the proposal.

Key features of the proposal (subject to detailed design) would include:

- Upgrade of Elizabeth Drive from a two-lane rural road, to a four-lane road (two lanes in each direction) with provision of a central median to allow for future upgrade to six lanes
- A new culvert at Cosgroves Creek to carry eastbound and westbound traffic
- Upgrades to two intersections along Elizabeth Drive: Luddenham Road and Adams Road
- Active transport provision along the full corridor with the inclusion of shared paths along both sides of Elizabeth Drive corridor
- Inclusion of public transport infrastructure with bus priority at intersection and bus stops facilities
- New stormwater drainage infrastructure
- Property acquisitions and adjustments on both sides of Elizabeth Drive and some side roads.
- Relocation/adjustment of existing utilities.

Subject to detailed design and construction planning, construction of the proposal is anticipated to take about 48 months to complete.

The following three temporary construction ancillary facilities would be established to support construction of the proposal:

- The Northern Road (construction ancillary facility 1) – located at the north-eastern corner of the Elizabeth Drive and The Northern Road intersection
- Luddenham Road (construction ancillary facility 2) – located at the north-western corner of the Elizabeth Drive and Luddenham Road intersection
- M12 Motorway tie in (construction ancillary facility 3) – located west of Badgerys Creek Road on the northern side of Elizabeth Drive. Subject to detailed design and construction planning, it is anticipated that the site offices at this construction ancillary facility would operate as the main site office during construction of the proposal.

Each construction ancillary facility may include the following:

- Establishment of site office/s, amenities, and temporary infrastructure, such as fencing and car parking areas
- Laydown and storage areas, and delivery of plant, equipment and materials
- Secure and bunded storage areas for re-fuelling and chemical storage
- Concrete batching plant
- Material crushing
- Stockpiling areas and spoil management (topsoil, excavated natural material, contaminated material). Stockpile locations would be determined during subsequent design stages using the criteria set out in the Stockpile Management Guideline (RMS, 2015).

Construction of the proposal would involve the following general activities:

- Site establishment including set up of construction ancillary facilities and installation of environmental protection controls, including around creek areas
- Utility adjustments, relocations and replacements, where required

- Demolition of existing buildings/structures
- Property adjustments (eg adjustments to fencing)
- Vegetation removal
- Earthworks and drainage work
- Adjustments to existing farm dams within the construction footprint, including dewatering and re-shaping where required
- Culvert work over Cosgroves Creek, including installation of temporary diversion (if required) and temporary creek crossing, construction of new culvert and demolition/removal of the existing culvert
- Elizabeth Drive upgrade roadwork, including intersections with local roads and walking and cycling infrastructure
- Landscaping and finishing work.

A detailed description of the proposal is provided in **Chapter 3** (Description of the proposal) of the REF.

## 3.0 Methodology

### 3.1 Overview

This SEIA assesses the impacts of the proposal in accordance with Environmental Impact Assessment Practice Note – Socio-economic assessment (EIA-N05) (Transport for NSW, 2020) (the Practice Note). The Practice Note outlines the requirements for establishing the socio-economic baseline and guides the process for assessing socio-economic impacts of the proposal.

In developing the SEIA the following methodology has been employed:

- Definition of the social locality
- Review of relevant local, regional and state policies and plans, and the outcomes of consultation activities undertaken for the proposal
- Identification of the appropriate level of assessment for the SEIA according to the Practice Note. The appropriate level of assessment identified for this assessment was 'moderate'
- Identification and consultation with the local community and other stakeholders who have an interest or could be affected by the proposal
- Development of a baseline profile of the existing socio-economic environment based on information available from the Australian Bureau of Statistics (ABS)
- Identification and assessment of the potential construction, operation and cumulative impacts of the proposal on socio-economic matters, including an assessment of the significance of these impacts. These impacts have been informed by other technical assessments and sections within the REF including air quality, traffic and transport, noise and vibration, property and land use, and landscape and visual impacts
- Identification of measures for managing and monitoring the potential socio-economic impacts of the proposal.

The above elements of the methodology are outlined in further detail below.

### 3.2 Social locality

The social locality (or study area) for the assessment of socio-economic impacts has been chosen based on the proposal's likely area of social influence. The social locality considers both local community impacts and those impacts likely to occur on a broader or more regional scale, such as economic and employment opportunities created by the proposal. The social locality for the SEIA considers both the regional and local boundaries as described below.

The social locality, shown on **Figure 3-1**, is bounded by the following geographic areas, each defined by the ABS as a 'Statistical Area Level 2' (SA2):

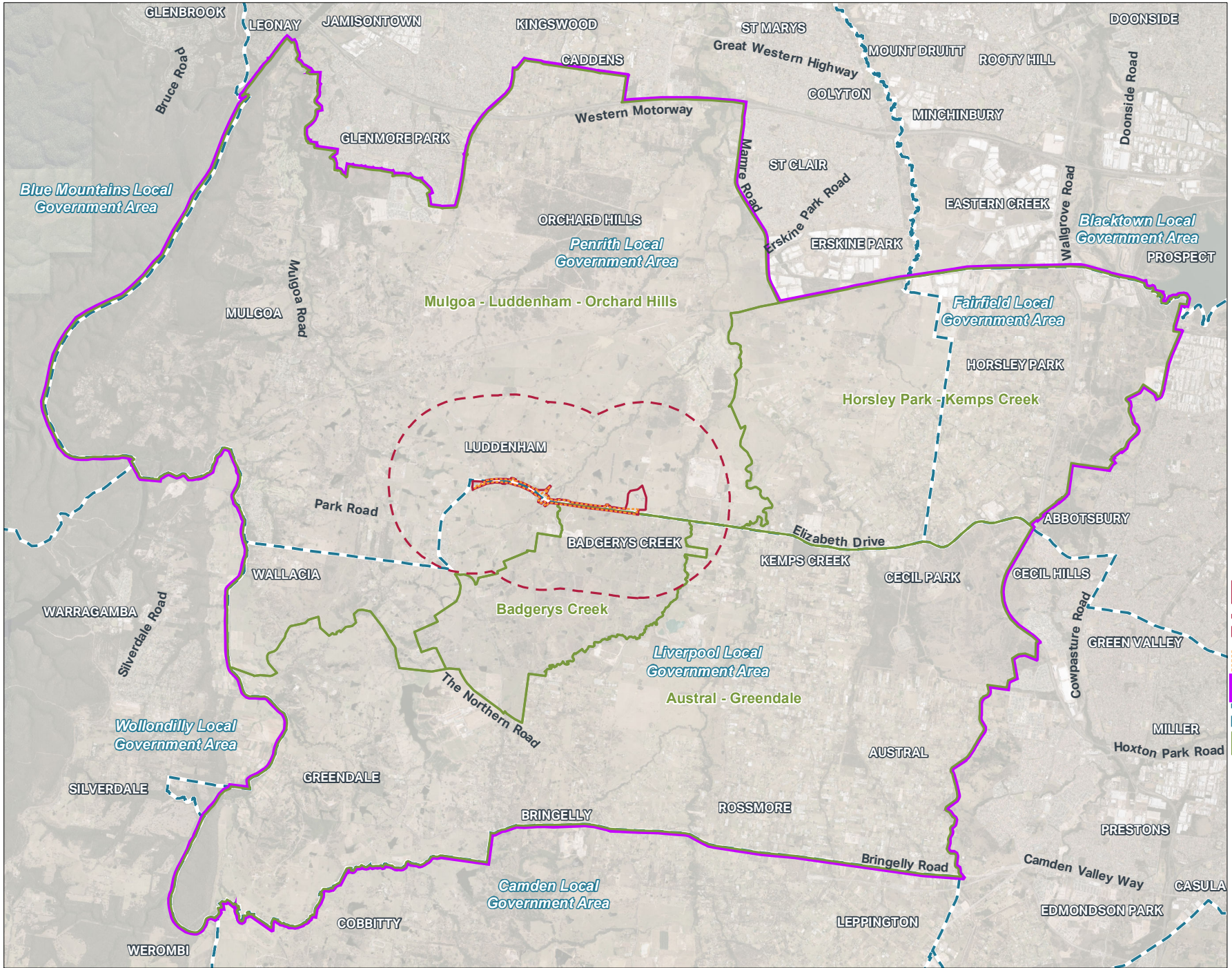
- Austral – Greendale
- Badgerys Creek
- Horsley Park – Kemps Creek
- Mulgoa – Luddenham – Orchard Hills.

The social locality is in Fairfield, Liverpool and Penrith local government areas (LGA)s, however the construction footprint itself is within Liverpool and Penrith LGAs.

Demographic data for the whole of NSW has been provided for context and comparison against the above social locality, where relevant. The social locality is shown on **Figure 3-1** and socio-economic data are provided in **Section 4.0** and **Appendix A** (Socio-economic data tables).



**FIGURE 3-1:**  
**SOCIAL LOCALITY**



- Legend**
- Construction footprint
  - 2km radius for social infrastructure consideration
  - Operational footprint
  - Social locality
  - LGA boundary
  - SA2 boundary

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### 3.3 Relevant legislation, guidelines and policy

#### 3.3.1 Legislative and policy context

The assessment of social impacts is intrinsic to the assessment of broader environmental impacts under both Commonwealth and NSW environmental planning legislation, whereby 'environment' is defined to include the social environment.

The statutory definition of the environment at both Commonwealth and State level is provided in the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the NSW EP&A Act, respectively. Section 528 of the EPBC Act defines the environment as including (with emphasis on sections relevant to the SEIA):

- a. *ecosystems and their constituent parts, including people and communities; and*
- b. *natural and physical resources; and*
- c. *the qualities and characteristics of locations, places and areas; and*
- d. *heritage values of places; and*
- e. *the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).*

Similarly, Part 1 of Section 1.4 of the NSW EP&A Act defines the environment as "*all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings.*" In addition, the *Environmental Planning and Assessment Regulation 2021*, Section 171, requires the consideration of environmental issues that comprise both direct and indirect social impacts (refer to **Section 4.1** for the strategic context of the proposal).

All relevant direct and indirect social impacts of the proposal are assessed in **Section 6.0** (construction impact assessment) and **Section 7.0** (operational impact assessment) of this report.

#### 3.3.2 Environmental Impact Assessment Practice Note – Socio-economic assessment (EIA-N05)

The Practice Note outlines requirements for establishing a socio-economic baseline and guides the process for assessing socio-economic impacts of projects undertaken by Transport.

This SEIA has considered the Practice Note in developing the assessment methodology and during the assessment of socio-economic impacts. This has included consideration of the sensitivity of receivers to potential social impacts and the magnitude of potential impacts.

### 3.4 Scoping

Scoping for the proposal was carried out in accordance with the Practice Note to identify the appropriate level of SEIA required.

Based on review of the Practice Note it was determined that the 'moderate' level of assessment would most appropriate. This is defined as applying to "*...projects with several impacts, medium duration impacts or impacts on groups of people. Moderate level assessments would usually require project specific mitigation measures to ensure impacts are acceptable to the community.*"

The proposal would have several impacts such as changes to property, loss of amenity, changes in access arrangements, loss of connectivity, impact on community identity, values and aspirations and cumulative impacts. The proposal is likely to affect residents and businesses along the proposal alignment and those who utilise Elizabeth Drive.

Refer to **Section 6.0** and **Section 7.0** for the assessment of socio-economic impacts likely to occur from the proposal.

### 3.5 Consultation

The SEIA has been informed by stakeholder and community consultation carried out for the proposal (refer further to **Chapter 5** (Consultation) of the REF).

Additional consultation was undertaken specifically to inform the SEIA, as outlined in **Section 5.0**.

### 3.6 Description of the socio-economic environment

The socio-economic characteristics of the social locality were determined by reference to its demographic profile, social infrastructure and business and transport services. This profile was also informed by community values and relevant local plans and strategies relevant to the social locality (refer to **Section 4.1**). Data to inform this profile was largely drawn from the ABS website, using information collected as part of the 2021 Census (refer to **Appendix A** (Socio-economic data tables)).

The above profile was also informed by the following plans, policies and strategies discussed in **Section 4.0**:

- State Infrastructure Strategy 2018-2038 (Infrastructure NSW, 2018)
- Greater Sydney Region Plan (Greater Sydney Commission, 2018a)
- Western City District Plan (Greater Sydney Commission, 2018b)
- Western Sydney Aerotropolis Plan (Western Sydney Planning Partnership, 2020)
- Western Sydney Aerotropolis Precinct Plan (Department of Planning and Environment, 2022)
- 2022 – 2032 Fairfield City Plan, Community Strategic Plan (Fairfield City Council, 2022)
- Liverpool City Council Community Strategic Plan (Liverpool City Council, 2032)
- Penrith 2036+ (Penrith City Council, 2022).

### 3.7 Assessment of impacts

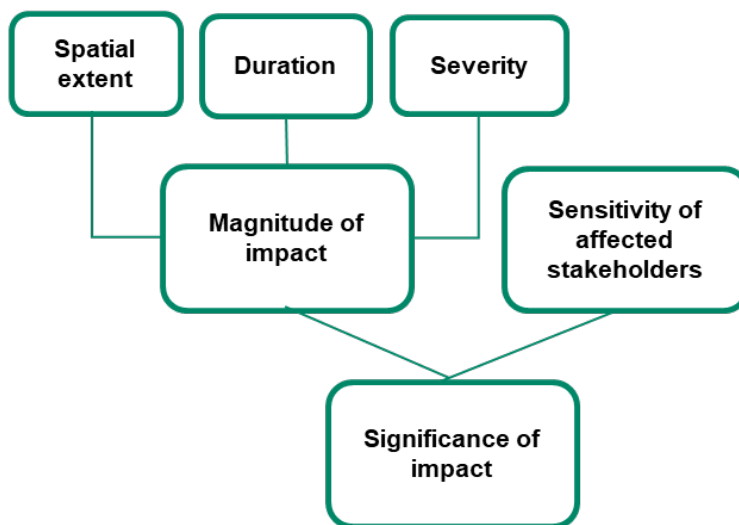
The socio-economic impacts of the proposal are likely to vary broadly depending on the characteristics of the receptor and the nature of impact. These impacts may be both adverse (eg reduction or loss of local economic activity) as well as beneficial (eg improving the local amenity and road safety). Where relevant both types of impacts have been presented throughout this report.

This SEIA considers the socio-economic consequences during construction and operation of the proposal on:

- Private property (boundary adjustment and encroachment)
- Amenity (noise, air quality and the visual environment)
- Access and connectivity
- Community identity, values and aspirations
- Social infrastructure
- Demography and social make up of an area
- Business and economy.

**Figure 3-2** outlines the assessment framework that was used to determine the significance of socio-economic impacts.

The significance of each potential socio-economic impact arising from the construction and operation of the proposal was assessed as a function of the magnitude of the impact and sensitivity of the receiver. This approach is aligned with the Practice Note.



**Figure 3-2 Assessment framework for determining significance of socio-economic impacts**

The criteria for assessing each impact was based on the following:

- Magnitude of impact, which is made up of:
  - Scale and intensity – the types of works, operational uses and built form
  - Spatial extent – the geographical area affected, which may be local, suburb, regional, state, national or international
  - Duration – short, medium or long-term, hours of work, frequency etc
- Sensitivity of affected stakeholders, which is defined by the susceptibility or vulnerability of receivers or receiving environments to adverse changes caused by the impact, or the importance placed on the matter being affected. This is based on the ability of stakeholders to adapt to change, their vulnerability, the level of concern raised in feedback during community and stakeholder consultation or change to community identity, values, or goals.

The above methodology is not applied to positive impacts; however, these are assessed and discussed as appropriate.

The definitions in **Table 3-1** were used to identify the magnitude of an impact, with regard to its spatial extent, duration and severity. This was informed by background data as well as professional judgement.

**Table 3-1 Magnitude levels and their constituent factors (Transport for NSW, 2020)**

Magnitude	Example
Negligible	No discernible positive or negative changes caused by the impact. Change from the baseline remains within the range commonly experienced by receptors.
Low	A discernible change from baseline conditions. The impact is experienced by a small proportion of receptors over a limited geographical area and mainly within the vicinity of the proposal. The impact is generally short term or some impacts may extend over the life of the proposal.
Moderate	A clearly noticeable difference from baseline conditions. The impact may be to a small or large proportion of receptors and may be over an area beyond the vicinity of the proposal. Duration is generally short to medium term, though some impacts may extend over the life of the proposal.
High	A change over existing baseline conditions that is substantial. The change is transformational or widespread and persists over many years or is effectively permanent.

**Table 3-2** was used to identify the sensitivity level of potentially affected stakeholders.

**Table 3-2 Sensitivity levels and their constituent factors (Transport for NSW, 2020)**

Sensitivity	Example
Negligible	No vulnerability and/or able to absorb or adapt to change. Issues not raised in feedback during community and stakeholder consultation, or would not result in change to community identity, values, or goals.
Low	Minimal vulnerabilities and a high ability to absorb or adapt to change. Issues rarely raised in feedback during community and stakeholder consultation, or minor change to community identity, values, or goals.
Moderate	A number of vulnerabilities but retains some ability to absorb or adapt to change. Issues raised in feedback during community and stakeholder consultation, or moderate change to community identity, values, or goals.
High	Multiple vulnerabilities and/or very little capacity to absorb or adapt to change. Issues raised in feedback from a number of community members and stakeholders during consultation or significant change to community identity, values, or goals.

The assessment matrix provided in **Table 3-3** has been used to determine the significance of each social impact as a function of the magnitude of the impact and the sensitivity of the relevant receiver.

**Table 3-3 Grading matrix to assess the significance of socio-economic impacts (Transport for NSW, 2020)**

		Magnitude			
		High	Moderate	Low	Negligible
Sensitivity	High	High	High-Moderate	Moderate	Negligible
	Moderate	High-Moderate	Moderate	Moderate-Low	Negligible
	Low	Moderate	Moderate-Low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

### 3.7.1 Cumulative impact assessment

A screening of other nearby projects was undertaken to determine projects that have the potential to result in cumulative impacts alongside the proposal. The screening took into account projects that have been approved but where construction has not commenced and projects that have commenced construction. Refer to **Section 6.8** and **Section 7.8** for the construction and operation cumulative impacts, respectively.

### 3.7.2 Limitations

While the 2021 Census data was available when compiling this report, some 2016 Census data was used where required. This included data relating to Socio-Economic Indices for Areas (SEIFA) (**Section 4.2.2**). Due to the small number of residents living in Badgerys Creek SA2 at the time of the 2021 Census (25 persons), there is limited data available from the ABS for this area.

Some changes in the local area are expected to have occurred since 2021. This has been aided by the release of several planning documents which provide the planning frameworks for infrastructure planning and development in the area (see **Section 4.1**).

It is noted that the changes in land use as a consequence of State Environmental Planning Policy (Precincts-Western Parkland City) 2021 may limit the accuracy of the predictions in this report. This is because the change in land use may affect the current landowner's intent for existing property use.

The socio-economic specific survey distribution carried out between 2 August 2022 and 10 August 2022 was limited to 364 surveys distributed via email or letterbox drop. Thirty-seven responses were received combined across both Elizabeth Drive East and Elizabeth Drive West (refer to **Section 3.5**). This may be indicative of consultation fatigue relating to several other transport and development projects which are underway in the region, or a lack of interest in the proposal.

Due to the limited number of responses, the sentiment of all those who may be impacted by the proposal may not be captured in this report. Notwithstanding, the socio-economic consultation captured a sample of relevant views from within the community and has been considered in the SEIA alongside consultation for the broader proposal (documented in Chapter 5 (Consultation) of the REF) as well as recent census data for the social locality. There are opportunities for further community and stakeholder engagement throughout design and construction of the proposal.

Consultation with affected landowners as part of the property acquisition and temporary leasing process had not commenced at the time of the SEIA surveys, and as such the results do not affect people's specific views on this matter.

Information about the land use of properties affected by temporary leasing or partial acquisition (e.g residential, business, farming), and the infrastructure within properties that may be affected has been based on desktop-based research (i.e. based on aerial imagery, zoning and land ownership information). This would be confirmed during detailed design and construction planning. Notwithstanding, the likely impacts of property acquisition have been assessed in this SEIA. Transport will consult with affected landowners individually prior to determination of the REF. All land acquisition would be carried out in accordance with the *Land Acquisition Information Guide* (Transport for NSW, 2014) and the *Land Acquisition (Just Terms Compensation) Act 1991*.

Social infrastructure providers that may be directly affected by the proposal have not been directly engaged in regard to site-specific impacts as part of the SEIA, however Transport would consult with these stakeholders prior to the determination of the REF, and throughout detailed design and construction planning.

## 4.0 Existing environment

### 4.1 Strategic context

This section describes the compatibility of the proposal with strategic planning policy documents.

#### 4.1.1 State and national strategic setting

##### State Infrastructure Strategy 2018-2038

The State Infrastructure Strategy 2018 – 2038: Building Momentum (SIS Strategy) (Infrastructure NSW, 2018) is a 20-year infrastructure plan for the NSW Government. The strategy assesses the infrastructure problems faced by the state and investigates solutions. Using the outcomes of these assessments, it provides recommendations to grow the State's economy, enhance productivity and improve living standards for NSW communities.

The strategy recognises that different regions of NSW face different opportunities and needs, and sets geographic directions for infrastructure planning, investment and policy. In the Greater Sydney and outer metropolitan area, it identifies the Western Parkland City (as identified in The Greater Sydney Region Plan – A Metropolis of Three Cities described below) as a key economic district, realising the growth potential of the WSA and Aerotropolis. The infrastructure response identified for the Western Parkland City includes the following priorities which would be supported by the proposal:

- Prioritise intercity road connections to support access from all directions
- Prioritise sustainable transport connections, particularly walking and cycling infrastructure within the city
- Deliver a freight network to support a growing city, and the next tranche of container imports into Sydney.

The strategy recognises the need for an improved road network with enhanced east-west connections to the surrounding road network facilitating better access to growth centres and employment areas. The proposal would support this by providing critical infrastructure to facilitate the growing needs of Greater Sydney, and its east-west connections.

#### 4.1.2 Local and regional strategic setting

##### Greater Sydney Region Plan

The Greater Sydney Region Plan (the Region Plan) (Greater Sydney Commission, 2018a) establishes Sydney as a 'metropolis of three cities' and seeks to set the direction of urban development and for each.

The proposal would be located within the Western Parkland City, which is planned to include expansive industrial and urban services to the north and east of the WSA and coupled with planned neighbourhoods would result in significant population growth and employment opportunities in this area.

The proposal is consistent with the Regional Plan, as it would substantially improve a key transport link in this part of the Western Parkland City. It would also help support projected and planned development in the region by connecting people and freight movement between strategic centres in western Sydney, the wider Sydney Region and beyond.

##### Western City District Plan

The Western City District Plan (the District Plan) (Greater Sydney Commission, 2018b) outlines a range of planning priorities for managing growth in the context of economic, social and environmental matters in order to achieve the 40-year vision for Greater Sydney.

The District Plan places a distinct emphasis on the positive development of the social and economic aspects of the Western Parkland City. It leverages the transformative and economic stimulus provided by the WSA and considers the transport, infrastructure, services, affordable housing, and open spaces that will be required as the population grows.

A selection of relevant community actions from the plan include:

- The provision of adequate and accessible social facilities and services as the area grows

- The use of public land to encourage connection and inclusion
- Consideration of the needs of the community's full age spectrum
- The promotion of active and healthy lifestyles
- Growing investment, business opportunities and jobs in strategic centres.

The proposal would contribute to the management of growth in Western Sydney as it would support much of the future development in this area through the provision of reliable and accessible transport infrastructure. The proposal would provide a new active and public transport link that would promote connection, independence and an active and healthy lifestyle for residents. The increase in accessibility would connect the social locality with Greater Sydney which would promote the growth of local businesses.

### **Western Sydney Aerotropolis Plan**

The Western Sydney Aerotropolis Plan (Western Sydney Planning Partnership, 2020) (the plan) is a planning framework for the Western Sydney Aerotropolis, which was previously known as the Western Sydney Airport Growth Area. The Western Sydney Aerotropolis would establish a new high-skill jobs hub for aerospace and defence, manufacturing, healthcare, freight and logistics, agribusiness, education and research industries all centred around the airport. The plan defines how the Aerotropolis would be created, and how its precincts would integrate with growth areas and be consistent with the Greater Sydney Region Plan. The plan gives effect to four themes, 11 objectives and 50 principles. The relevant themes and objectives the proposal would support in this plan include:

- Accessible and well-connected
- Job growth is enabled
- Infrastructure that connects and services the Western Parkland City as it grows
- A collaborative approach to planning and delivery
- Social infrastructure that strengthens communities.

The Western Sydney Aerotropolis is located within the Liverpool and Penrith LGAs and would eventually contain the following ten precincts: Aerotropolis Core, Agribusiness, Badgerys Creek, Dwyer Road, Kemps Creek, Mamre Road, North Luddenham, Northern Gateway, Rossmore and Wianamatta-South Creek.

The precincts would comprise a mix of land uses including employment and business, airport related industries, mixed use, residential/urban land use and significant open space corridors along the primary drainage corridors, notably the South Creek catchment.

Six precincts have been identified in the Western Sydney Aerotropolis Plan which would be subject to accelerated planning through the precinct planning process. The Northern Gateway and Agribusiness precincts bordering Elizabeth Drive are expected to generate significant job opportunities, noting that job prospects in these precincts would attract people not only from the surrounding area but from Greater Sydney.

The Northern Road would serve the Agribusiness Precinct and the Airport Freight and Logistics Precinct and the M12 Motorway would be the major access route to the WSA, and connect to Sydney's motorway network.

Elizabeth Drive also forms part of the planned road corridor upgrades (key network upgrade) and would provide supporting road access to the Northern Gateway and Agribusiness precincts playing a crucial role in connecting people travelling to the Western Sydney Aerotropolis and surrounding precincts. The Western Sydney Aerotropolis Plan also identifies Elizabeth Drive as a Rapid Bus Corridor. The proposal aligns with the plan by providing bus jump facilities at each signalised intersection on both directions of Elizabeth Drive.

Land use zoning and other provisions relating to development in the Western Parkland City are governed by State Environmental Planning Policy (Precincts-Western Parkland City) 2021.

### **Western Sydney Aerotropolis Precinct Plan**

The Western Sydney Aerotropolis Precinct Plan (Department of Planning and Environment, 2022) (precinct plan) provides place-based objectives, performance criteria and structure planning for five precincts within the Western Sydney Aerotropolis including:

- Aerotropolis Core
- Badgerys Creek
- Wianamatta-South Creek
- Northern Gateway
- Agribusiness (excluding Luddenham Village).

The precinct plan outlines a movement framework and related transport objectives for the development of the above five precincts. One of the objectives is to ‘create a road network for private vehicles and freight which can provide efficient links and integration to the broader regional network while also supporting local accessibility in centres and between places.’ This objective would be consistent with the proposal.

In this precinct plan, Elizabeth Drive is designated as a primary arterial road, with signalised intersections to other primary and sub-arterial roads that traverse each of the precincts.

The construction footprint resides within Northern Gateway and Agribusiness precincts, both of which adjoin Elizabeth Drive and provide direct access. Elizabeth Drive would provide indirect access to the other three precincts.

### **Fairfield City Plan, Community Strategic Plan**

The Fairfield City Plan (the Community Strategic Plan) (Fairfield City Council, 2022) was developed through community engagement with a view to defining the goals and vision for the community of the Fairfield LGA.

The five themes of the plan include:

- Community wellbeing
- Places and infrastructure
- Environmental sustainability
- Local economy and employment
- Good governance and leadership.

Key goals of the plan that align with the proposal are:

- Healthy and active community
- An accessible and liveable city
- Environmental compliance standards are met
- Diverse employment and job opportunities
- A well engaged and informed community.

The proposal directly aligns with the Community Strategic Plan by providing accessible active transport connections with beneficial health outcomes for the community. The proposal would provide employment opportunities during construction and an improved link to employment opportunities in the growing social locality. The design of the proposal and construction practices would comply to relevant environmental standards. Community engagement has been an integral part of the development of the proposal and the results have been used to inform this technical assessment. Transport would continue to work with stakeholders and the community to ensure they are informed of the proposal and have opportunities to provide feedback.



## Liverpool City Council Community Strategic Plan 2022-2032

The Liverpool City Council Community Plan 2022-2032 (Liverpool City Council, 2022) is built on four strategic objectives:

- Social – healthy, inclusive, engaging
- Environmental – liveable, sustainable, resilient
- Economic – evolving, prosperous, innovative
- Civic leadership – visionary, leading, responsible.

Key strategies outlined under these objectives that align with the proposal include:

- Social: Support active and healthy lifestyles by improving footpaths, cycleways and walkways and other infrastructure that promotes and supports active transport
- Environmental: promote and advocate for an integrated transport network with improved transport options and connectivity
- Economic: continue to invest in improving and maintaining Liverpool's road networks and infrastructure
- Economic: Develop the economic capacity of local businesses and industries.

The proposal would include the provision of shared walking and cycling paths along Elizabeth Drive, which would support active and healthy lifestyles and promote the use of active transport as envisaged in the Community Strategic Plan. The plan also recognises that forecast growth in the Liverpool LGA is set to put pressure on already congested roads and ageing transport connections. The proposal would provide additional capacity on Elizabeth Drive to manage and avoid potential congestion. The proposal would also provide employment opportunities during construction and would be key in supporting employment and business development in the area once operational.

### Penrith 2036+

Penrith 2036+ (Penrith City Council, 2022) is Penrith City Council's community strategic plan, which outlines the community's vision, aspirations and values. The plan identifies a vision for a regional city that is inclusive and prosperous and offers the best in urban living and a sustainable rural environment. Five community outcomes are identified in this plan.

The proposal would support Outcome 4 'we manage and improve our built environment', and its associated strategy to 'plan and manage sustainable transport infrastructure and networks to meet current and future community needs.' The proposal would support this as an upgraded Elizabeth Drive would enable the growth of the region, and new shared walking and cycling paths would satisfy the community need for sustainable transport infrastructure.

## 4.2 Socio-economic profile

### 4.2.1 Key demographic data

Key demographic indicators of relevance to the proposal, as derived from ABS 2021 Census data, are provided in **Table 4-1**. Demographic data for the Greater Sydney metropolitan area and NSW as a whole has also been provided to allow for comparison with the selected demographic indicators within the social locality.

### 4.2.2 Socio-economic Indices for Areas

The SEIFA (ABS, 2023) defines relative socio-economic advantage and/or disadvantage in terms of people's access to material and social resources, and their ability to participate in society. SEIFA aids in providing an assessment of the welfare of Australian communities and helps in determining and prioritising areas that require funding and services.

The SEIFA publication consists of four indexes. The Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) and the Index of Economic Resources (IER) have been used for this assessment in accordance with guidance presented in the Practice Note.

The SEIFA data is based on the 2021 census data. The data packets used are the SA2 areas that make up the social locality as discussed in **Section 3.2** and shown on **Figure 3-1**.

### **Index of Relative Socio-Economic Advantage and Disadvantage**

The IRSAD assesses the socio-economic conditions of people and households within an area, including both relative advantage and disadvantage measures. A low score indicates disadvantage. For example, an area could have a low score if there are many households with low incomes or few houses with high incomes. An index score of 1,000 represents the median score across Australia.

#### *Austral – Greendale*

The IRSAD statistics identify Austral – Greendale as scoring 1,009 indicating a level of advantage close to the Australian median, with a slight relative advantage. Austral – Greendale had a decile of six for both Australian and NSW rankings. This shows that 60 per cent of SA2 areas within Australia and NSW are more disadvantaged<sup>1</sup>. The IRSAD ranking, measuring both advantage and disadvantage, also indicates that Austral – Greendale has a slightly higher socio-economic advantage to other SA2 areas within NSW.

#### *Badgerys Creek*

Badgerys Creek scored 1,072 indicating slight relative advantage compared to the Australian median. Badgerys Creek had a decile of eight for both Australian and NSW rankings, indicating that 80 per cent of SA2 areas within Australia and NSW are more disadvantaged<sup>1</sup>. The IRSAD ranking, measuring both advantage and disadvantage also indicates that Badgerys Creek has a socio-economic advantage to other SA2 areas within NSW.

#### *Horsley Park – Kemps Creek*

The IRSAD statistics identify Horsley Park – Kemps Creek as scoring 1,036 indicating slight relative advantage compared to the Australian median. Horsley Park – Kemps Creek had a decile of seven for both Australian and NSW State rankings, indicating that 70 per cent of SA2 areas within Australia and NSW are more disadvantaged<sup>1</sup>. When measuring both advantage and disadvantage, Horsley Park – Kemps Creek has a higher socio-economic advantage to other SA2 areas within NSW.

#### *Mulgoa – Luddenham – Orchard Hills*

Similarly Mulgoa-Luddenham-Orchard Hills with a score of 1,071 has a slight relative advantage compared to the Australian median. Mulgoa-Luddenham-Orchard Hills had a decile of eight for both Australian and NSW State rankings. This indicates that 80 per cent of SA2 areas with Australia and NSW are more disadvantaged<sup>1</sup>. Mulgoa-Luddenham-Orchard Hills also has a higher socio-economic advantage to most SA2 areas within Australia.

### **Index of Economic Resources**

The IER summarises variables relating to the financial aspects of socio-economic advantage and disadvantage such as income and wealth. Areas with higher scores generally have relatively greater access to economic resources, with higher incomes and/or wealth, compared to areas with lower scores. This index excludes education and occupation variables because they are not direct measures of economic resources. The IER interactive map provided by the ABS (ABS, 2023) was referenced to determine socio-economic advantages or disadvantages for SA2 areas. In summary:

- The Austral – Greendale SA2 is in the Quintile 4 area and has a 78 IER percentile, which is in the 'advantaged' range
- The Badgerys Creek SA2 is in the Quintile 3 area and has a 50 IER percentile, which is in the middle of the 'disadvantaged to advantaged' range
- The Horsley Park – Kemps Creek SA2 is in the Quintile 5 area and has a 94 IER percentile, which is close to the 'most advantaged' range

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<sup>1</sup> Low deciles values (1-3) generally represent areas of disadvantage while high values (7-10) represent areas of least disadvantage. Areas are ordered from lowest to highest score, then the lowest 10 per cent of areas are given a decile number of 1, next 10 per cent are given a percentile number of 2 and this continues upwards. The highest one per cent of areas has a percentile of 100 (ABS, 2018)

- The Mulgoa-Luddenham-Orchard Hills SA2 is in the Quintile 5 area and has a 99 IER percentile, which is close to the 'most advantaged' range.

Table 4-1 Demographic information for the social locality precincts (ABS, 2021)

Demographic information	Austral Greendale	Badgerys Creek	Horsley Park Kemps Creek	Mulgoa Luddenham Orchard Hills	Greater Sydney	NSW
<b>Population</b>						
Population (no.)	12,533	25	4,344	12,040	5,231,147	8,072,163
Median age (no.)	34	46	44	35	37	39
Aboriginal or Torres Strait Islander population (%)	1.8%	0.0%	1.5%	2.7%	1.7%	3.4%
Speaks a language other than at home (%)	45.2%	24.0%	44.3%	21.5%	57.3%	32.4%
<b>Labour force and employment</b>						
Labour force (no.)	5,464	11	1,898	3,042	2,560,242	3,874,012
Unemployed (%)	4.2%	N/A	1.9%	2.3%	5.1%	4.9%
Top three employment industries	Construction Health care and social assistance Retail trade	Construction Agriculture, Forestry and Fishing Inadequately described	Construction Manufacturing Retail trade	Construction Health care and social assistance Retail trade	Health care and social assistance Professional Retail trade	Health care and social assistance Retail trade Professional
<b>Dwellings</b>						
Separate house (no.)	86.3%	77.8%	89.6%	88.6%	51.2%	59.5%
Semi-detached, townhouse, terrace house, etc. (no.)	2.9%	0.0%	2.0%	2.4%	11.7%	10.6%
Flat or apartment (no.)	1.7%	0.0%	1.7%	3.3%	28.2%	19.7%
Other (no.)	2.3%	22.2%	0.5%	1.2%	0.4%	1.6%
<b>Home ownership and household structure</b>						
Owned outright (%)	29.5%	55.6%	51.7%	30.8%	27.8%	31.5%
Owned with a mortgage (%)	37.6%	0.0%	38.7%	48.2%	33.3%	32.5%
Rented (%)	27.4%	33.3%	14.8%	18.9%	35.9%	32.6%
Other tenure type (%)	2.9%	0.0%	2.8%	1.0%	1.7%	1.9%
Tenure type not stated (%)	2.5%	22.3%	2.0%	1.0%	1.3%	1.5%

Demographic information	Austral Greendale	Badgerys Creek	Horsley Park Kemps Creek	Mulgoa Luddenham Orchard Hills	Greater Sydney	NSW
Journey to work and vehicle ownership						
Top three transport method to work	Car (driver) Car (passenger) Truck	Car (driver)	Car (driver) Truck Car (passenger)	Car (driver) Car (passenger) Truck	Car (driver) Car (passenger) Train	Car (driver) Car (passenger) Walked

### 4.3 Social infrastructure

Social infrastructure refers to the facilities, structures and services that support the physical, social, cultural or intellectual development or welfare of the community. This includes a range of physical facilities such as schools, medical centres, sporting and recreational facilities (including passive open space), community facilities, libraries, as well as the activities and programs that operate within them.

Social infrastructure facilities generally operate at a local, district and/or regional level and are defined by the scale of the population catchment they serve. Social infrastructure can often be classified as a sensitive receiver in its own right and may be directly or indirectly affected by the proposal.

The social infrastructure listed in this chapter is indicative only and is based on the data available at the time of preparing this report. Sources used to inform this audit include local council social infrastructure lists and Google Maps. These sources are considered to be suitably accurate for the purposes of outlining the social infrastructure present in the social locality. Unregistered facilities, facilities without a digital presence, and potential errors in base data may have caused unintended omission of some facilities.

Given the rural nature of the surrounding area, social infrastructure in the vicinity of the construction footprint is limited and as such, a search radius of two kilometres has been used when outlining social infrastructure facilities in the social locality. There is no social infrastructure located within the construction footprint.

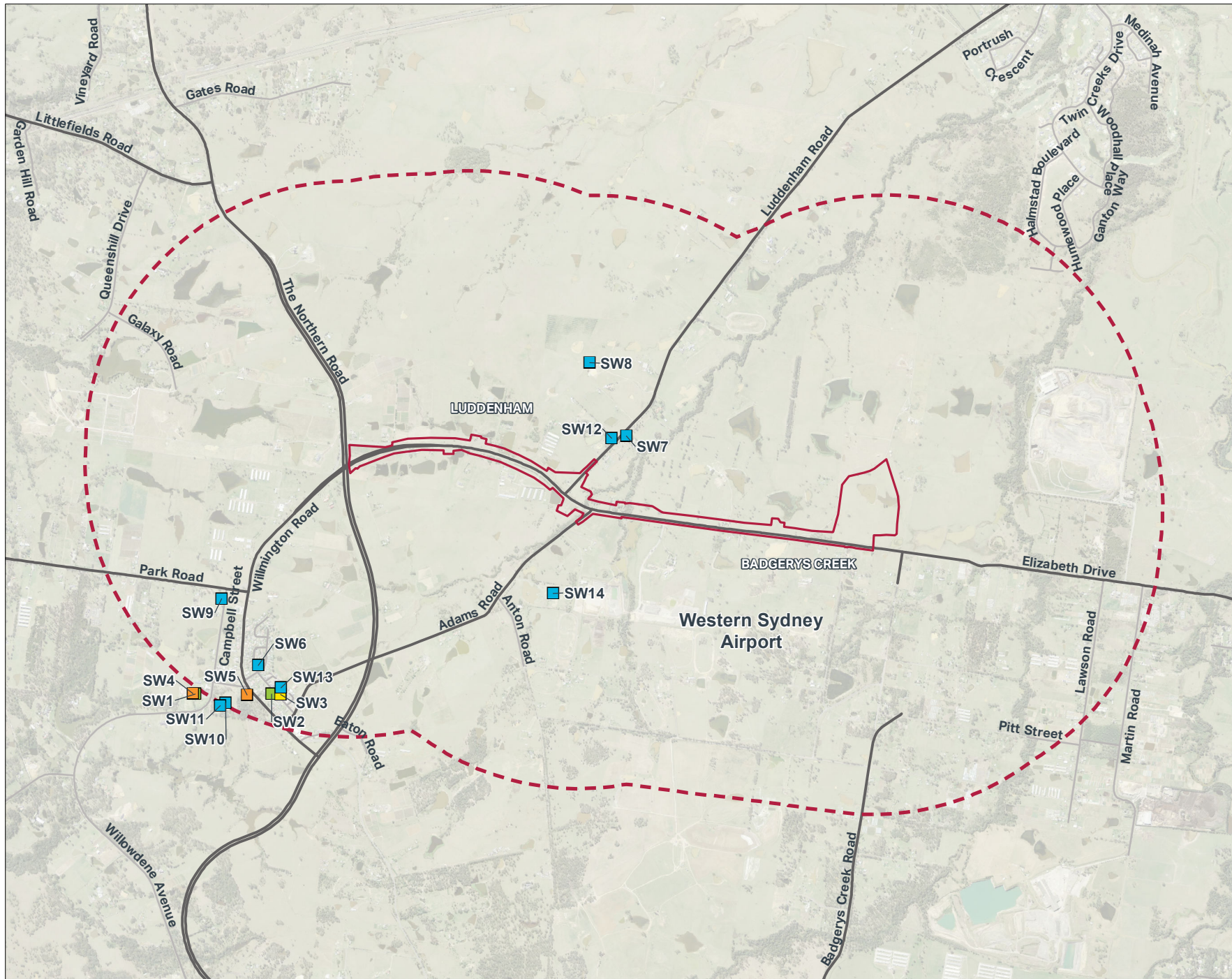
Social infrastructure located within a two-kilometre radius of the proposal is outlined in **Table 4-2**, and shown on **Figure 4-1**.

**Table 4-2 Social infrastructure in a two kilometre radius of the proposal**

Social infrastructure	Facility / institution
<b>Educational facilities</b>	
SW1	Holy Family Catholic Primary School
SW2	Luddenham Public School
<b>Health, medical and emergency services</b>	
SW3	Luddenham Rural Fire Brigade
<b>Places of worship</b>	
SW4	Holy Family Church
SW5	Luddenham Uniting Church
<b>Sporting and recreational facilities</b>	
SW6	Freeburn Park
SW7	Luddenham Lodge Horse Riding
SW8	Luddenham Raceway – Go Karting, Paintball & Motorsport Park
SW9	Luddenham Showground
SW10	Robert Green Oval
SW11	Sales Park

Social infrastructure	Facility / institution
SW12	Sydney Society of Model Engineers Inc.
SW13	Wilmington Reserve
SW14	Workers Hubertus Country Club





**FIGURE 4-1:**  
**SOCIAL INFRASTRUCTURE**  
**WITHIN A TWO-KILOMETRE**  
**RADIUS OF THE PROPOSAL**



- Legend**
- Construction footprint
  - 2km buffer for social infrastructure consideration
  - Primary road
  - Local road
- Social Infrastructure**
- Educational facilities
  - Health, medical and emergency services
  - Places of worship
  - Sporting and recreational facilities

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## **4.4 Economic characteristics**

### **4.4.1 Local businesses**

The social locality has a variety of local businesses. To the west in Luddenham there is a local centre with a few stores which provide for the everyday needs of residents. To the north and south of the construction footprint and along Elizabeth Drive, there are various commercial and industrial businesses.

One business, a duck farm, has been identified immediately adjacent to Elizabeth Drive. The WSA currently under construction is located to the south of the construction footprint.

### **4.4.2 Business and regional trends**

The gross regional product of Liverpool, Penrith and Fairfield LGAs have had an overall increasing (positive) trend over the past two decades, in keeping with NSW generally. With the development of the WSA and the surrounding Western Sydney Aerotropolis and land rezoning and transport infrastructure upgrades already completed or underway, there is likely to be significant investment in a broad range of industries, including logistics and warehousing and agri-business. At the same time the population of the region is expected to double from 740,000 in 2016 to over 1.5 million by 2056. All of the above would contribute to gross regional product in the local and wider region.

## **4.5 Access and connectivity**

### **4.5.1 Road network and connectivity**

Elizabeth Drive is a State road spanning multiple LGAs, servicing both residents and businesses as well as the Greater Sydney community. Elizabeth Drive spans over 24 kilometres and is the main east-west road connection between The Northern Road, Luddenham (at its western extent) and Elizabeth Street, Liverpool (at its eastern extent). A major node of connectivity on Elizabeth Drive is its interchange with the M7 Motorway at Cecil Hills.

To the west of the M7 Motorway, Elizabeth Drive is primarily a two-lane road (one lane in each direction). Elizabeth Drive west of the M7 Motorway frequently experiences congestion during peak times with growing crash and safety issues across the road corridor.

The section of Elizabeth Drive within the construction footprint is a generally two-lane undivided road with no footpaths or median and a posted speed limit of generally 80 kilometres per hour. Elizabeth Drive also intersects with several unsignalised local side roads within this section.

### **4.5.2 Parking availability**

There are no existing designated parking facilities along Elizabeth Drive and parking is prohibited in wider sealed shoulders in a number of locations. Additionally, there are no off-street parking locations within the construction footprint.

### **4.5.3 Public transport**

There is currently limited public transport provision within the social locality, as outlined below.

#### **Rail network**

There are no rail links to the suburbs immediately north or south of Elizabeth Drive, or to Cecil Hills to the west. The nearest train stations are Leppington Station (about 11 kilometres away), Edmondson Park Station (about 15 kilometres away) and St Marys Station (about 11 kilometres away).

#### **Bus network**

Overall, the bus network coverage in the social locality is poor, with few services provided and low frequencies. This reflects the historic rural land use and low population density, generating a low demand for public transport.

The following bus routes operate on Elizabeth Drive, none of which travel along the construction footprint:

- Route 801 currently operates with limited daily services along the eastern section of Elizabeth Drive and provides connection between Liverpool and Badgerys Creek, including two morning services and

one afternoon service. Three afternoon services currently operate in the opposite direction from Liverpool to Badgerys Creek

- Route 813 runs twice per day in each direction along a short section of Elizabeth Drive, between Mamre Road and Duff Road
- Two school services also operate on the eastern parts on Elizabeth Drive, once per day in each direction.

The social locality is also serviced by taxi and ride share services as per demand.

#### **4.5.4 Active transport**

There are limited dedicated walking and cycling facilities along Elizabeth Drive. Road shoulders and verges are the only available means for pedestrians to travel along Elizabeth Drive, exposing them to live traffic.

Limited off-road cycling facilities are provided in the wider social locality. At present, the only road with any notable facility is the recently upgraded Northern Road, which has a shared path running along the northbound direction and cycling crossing facilities at intersections with side roads.

## **4.6 Community identity, values and aspirations**

The identification of community values and goals aids in the assessment of potential socio-economic impacts.

Community values are those that are shared by residents and visitors about a particular area, or about the enhancement of quality of life or sense of place. Physical aspects, such as heritage items, social infrastructure or local features (such as public art and trees) are generally highly valued by communities. Intangible elements such as neighbourhood identity, community safety, health and wellbeing, and community cohesion also contribute to community identity and values.

The community consultation undertaken for the Penrith, Liverpool and Fairfield community strategic plans provides an understanding of the values and aspirations of the community in the social locality. Community consultation as part of the proposal identified community opinions of how the proposal would impact them. Refer to **Section 5.0** for the community consultation outcomes where residents outlined what they value and aspire for in their community.

### **4.6.1 Stakeholder and community consultation**

Transport has carried out various consultation activities to inform the proposal development, such as community information sessions, Aboriginal community consultation, local council consultation, print media notifications, social media notifications, letter box notifications drops and webpage updates. Further details of the engagement activities that have been carried out to date, and ongoing and planned consultation activities are in **Chapter 5** (Consultation) of the REF.

A socio-economic survey was carried out in August 2022. The survey was distributed via email and letterbox drops. Residents and businesses were asked what they valued in their community and were able to comment on how they thought the proposal would impact them during construction and operation. Answers were collated and analysed to understand the perceptions of those who may be affected by the proposal.

## 5.0 Consultation

### 5.1 Consultation activities conducted

Transport has proactively consulted with the community and stakeholders throughout the development of the proposal. This consultation was carried out in accordance with the Community and Stakeholder Engagement Plan prepared for the proposal.

Community consultation has occurred since June 2019 when the community was first asked for feedback on the design of the proposal. Activities undertaken as part of the consultation included:

- Newspaper advertisement
- Social media
- Community newsletter
- Letters to property owners
- Webpage
- Community information sessions.

Key feedback from the community received during this consultation is summarised in **Table 5-1**. This feedback has been considered in developing the SEIA. Transport's responses to the issues raised are provided in **Chapter 5** (Consultation) of the REF.

**Table 5-1 Feedback and issues raised during community consultation**

Category	Feedback / issue raised
Access strategy	<ul style="list-style-type: none"> <li>• Access onto Elizabeth Drive from the rural fire station for emergency response needs to be considered</li> <li>• Queries about a connection between the M12 and Elizabeth Drive</li> <li>• Queries about a connection between Elizabeth Drive and WSA</li> <li>• What type and level of access would be provided between either side of Elizabeth Drive?</li> <li>• The number of traffic lights proposed would increase the traffic congestion along Elizabeth Drive</li> <li>• Request for additional traffic light intersections to support planned redevelopment of land adjacent to Elizabeth Drive</li> </ul>
Information	<ul style="list-style-type: none"> <li>• More information should be available about the proposal including timeframes, scope and road width</li> <li>• Queries about funding commitment for construction</li> <li>• Queries about modelling assumptions</li> </ul>
Property	<ul style="list-style-type: none"> <li>• Information on which properties would be impacted needs to become available</li> <li>• Federal land should be used instead of private land for the road upgrade</li> </ul>
Road design	<ul style="list-style-type: none"> <li>• What design vehicle is being used for the proposal?</li> <li>• Transport should consider the use of median barriers to reduce the cross-sectional width and reduce impacts to adjoining land</li> <li>• What would the proposed speed limit for the road be?</li> <li>• The upgraded road design should consider the public transport needs of the corridor</li> </ul>

Category	Feedback / issue raised
Active transport	<ul style="list-style-type: none"> <li>Cyclists need to be considered including priority for cyclists at road and driveway crossings, intersections and cycle way sheltered from significant flood events</li> </ul>

Consultation with the Aboriginal community has occurred throughout the development of the proposal. To support the Stage 3 Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI) (**Appendix I** of the REF), key Aboriginal stakeholders were consulted with, including to seek feedback on the Aboriginal cultural heritage assessment methodology, results, and cultural values associated with the area.

Consultation activities carried out with the relevant councils and the State government is detailed in **Chapter 5** (Consultation) of the REF. Issues raised relevant to the SEIA are addressed in **Section 6.0** and **Section 7.0**.

The REF and this SEIA would be publicly displayed prior to determination of the REF. During this time, stakeholders and the community would be encouraged to provide feedback and make a submission on the REF. Refer to **Chapter 5** (Consultation) of the REF for further details.

## 5.2 Socio-economic consultation approach

A socio-economic specific survey (the survey) was carried out between 2 August 2022 and 10 August 2022 and encompassed the entire Elizabeth Drive upgrade (Elizabeth Drive West and Elizabeth Drive East).

The survey was sent out via a digital link to stakeholders who had signed up for Elizabeth Drive proposal updates and letterbox drops to those living along the alignment between The Northern Road and Cecil Road.

The surveys were emailed out to 171 stakeholders on 2 August 2022 and surveys were dropped in 175 properties along the Elizabeth Drive upgrade as a whole (including both the proposal and the Elizabeth Drive East Upgrade described in **Section 1.1**) on 3 August 2022. Respondents were able to fill in the survey online or post it back to Transport until the survey closed on 10 August 2022.

The survey had three sections for respondents to answer:

- Section 1 – Business survey
- Section 2 – Residential survey
- Section 3 – Demographic questions (which was optional).

A total of 37 responses were received, including 28 online and nine letters received by Transport. Of those survey respondents, 14 stakeholders responded to both the residential and business sections, six answered the business survey only and 17 responded to the residential section only. Limitations regarding the consultation approach have been outlined in **Section 3.7.2**.

The survey results are available in **Appendix B** (Socio-economic survey results).

## 5.3 Residential survey

Residential surveys were undertaken to better understand the potential social impacts of the proposal on community members. The key aims of these surveys were to:

- Identify features of the community, the social locality and/or landscape which people value
- Understand the way of life of the community, what a typical day includes, what community facilities are used, and modes of transport taken within the local area
- Seek input from the community on how the construction and operation of the proposal might affect their lives (both positively and negatively)

- Seek input on how the proposal could appropriately manage impacts.

### 5.3.1 Residential survey findings

The opening questions of the survey asked if the resident uses Elizabeth Drive and for what purpose.

Of the residents surveyed, 96 per cent use Elizabeth Drive weekly, most frequently to commute to and from work, travel to the shops and visit family and friends.

Other key findings from the residential surveys are as follows:

#### Values

Residents were asked what they valued in their community. The top three themes were:

- Feeling safe and secure (23 per cent)
- Community services such as shops, halls, sport grounds, places of worship, cycleways and footpaths (18 per cent)
- Employment and parks and landscape features (14 per cent).

#### Concerns and aspirations

Residents were asked to comment on concerns for their community and which aspects they would like improved.

The top three aspirations of residents were:

- Reduction of congestion (38 per cent)
- Improve public transport options (27 per cent)
- Better services for children and/or elderly people (14 per cent).

#### Construction impacts

Residents were asked how they think the proposal may affect them and their community during construction.

Regarding respondent's own day-to-day life, people indicated that:

- Impact: most respondents (87 per cent) thought that they would be affected by congestion, traffic delays, change in access arrangements, loss of amenity and decrease in safety during construction
- Unsure or no impact: some respondents (13 per cent) were unsure or did not think that the construction of the proposal would affect them.

Regarding their community, respondents indicated that:

- Benefit: the majority of respondents (88 per cent) thought that the community would benefit from the construction of the proposal through employment opportunities and general growth of the area
- Impact: some respondents (9 per cent) thought that the community would be adversely affected by congestion, traffic delays, change in access arrangements, loss of amenity and decrease in safety during construction
- Unsure or no impact: some respondents were unsure or did not think that the construction of the proposal would affect the community (3 per cent).

#### Operational impacts

Residents were asked how they think the proposal may affect them and their community during operation.

Regarding respondents own day-to-day life, people indicated that:

- Benefit: around half of respondents (55 per cent) commented that the proposal would benefit them through improved travel time, access and reduced congestion

- Impact: some respondents (27 per cent) commented that the proposal would adversely affect them through changes in access arrangements, result in increased traffic, increased noise, loss of land to the upgrade and change the sense of place
- Unsure or no impact: some respondents (18 per cent) were either unsure or did not think that the proposal would affect them.

Regarding their community, respondents indicated that:

- Benefit: majority of respondents (68 per cent) thought that the proposal would benefit the community through improved access, less congestion, improved community cohesion and job opportunities
- Impact: some respondents (23 per cent) thought that the proposal would adversely affect the community through increased traffic, noise and sense of place
- Unsure or no impact: some respondents (9 per cent) were either unsure or did not think that the proposal would impact their community.

## 5.4 Business survey

Business survey questions were developed to understand businesses' reliance on Elizabeth Drive, their customer base, and their perception as to how their business may be affected (both positively and negatively) by the proposal.

### 5.4.1 Business survey findings

The opening questions of the survey asked their business type, reliance on passing trade and about their typical trading hours and customer base. Of the businesses surveyed, 44 per cent said their business were moderately dependent on passing trade. Respondents also indicated that 25 per cent of their business serviced all of Sydney.

#### Construction

Business operations were asked how they think the proposal may affect them during construction:

- Impact: around half of respondents (56 per cent) thought that their business would be adversely affected by changes in access to their businesses, loss of amenity, congestion and longer travel times during construction
- No impact: some respondents (31 per cent) thought that their business would not be affected by construction of the proposal
- Unsure: some respondents (13 per cent) were unsure if their business would be affected by construction of the proposal.

#### Operation

Businesses operations were asked how they think the proposal may affect them during operation:

- Impact: many respondents (69 per cent) thought that their business would be adversely affected by changes in access and land acquisition during operation
- No impact: some respondents (31 per cent) thought that their business would not be affected by operation of the proposal however did not specify how.

## 6.0 Construction impact assessment

### 6.1 Property

Property impacts, including details of property acquisitions and impacts arising from the temporary occupation of land are discussed in **Chapter 3** and **Section 6.6** of the REF. This report assesses the socio-economic implications of these property impacts.

#### 6.1.1 Acquisition and leasing of property and changes to land use

The proposal has been designed to minimise the need for land acquisition, as far as practical, and to limit any potential for severance and sterilisation of private properties. Subject to detailed design and construction planning, construction of the proposal would require the partial acquisition of 18 privately owned lots. Properties to be partially acquired generally accommodate agricultural, commercial, residential or unknown land uses.

Partial acquisition of properties may require the demolition of some structures such as sheds, where they are within the operational footprint for the proposal. Property adjustments would also be required at these properties, such as adjustments to fencing and farm dams, relocation of sheds, driveways and letterboxes, and a loss of vegetation and grassed areas. This has the potential to affect communities by placing additional pressure and stress on residents and business owners due to loss of land used for various uses.

Sufficient notice and fair market compensation would be provided to landowners affected by partial property acquisition. Land acquisition would be carried out in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the *Land Acquisition Information Guide* (Transport for NSW, 2014).

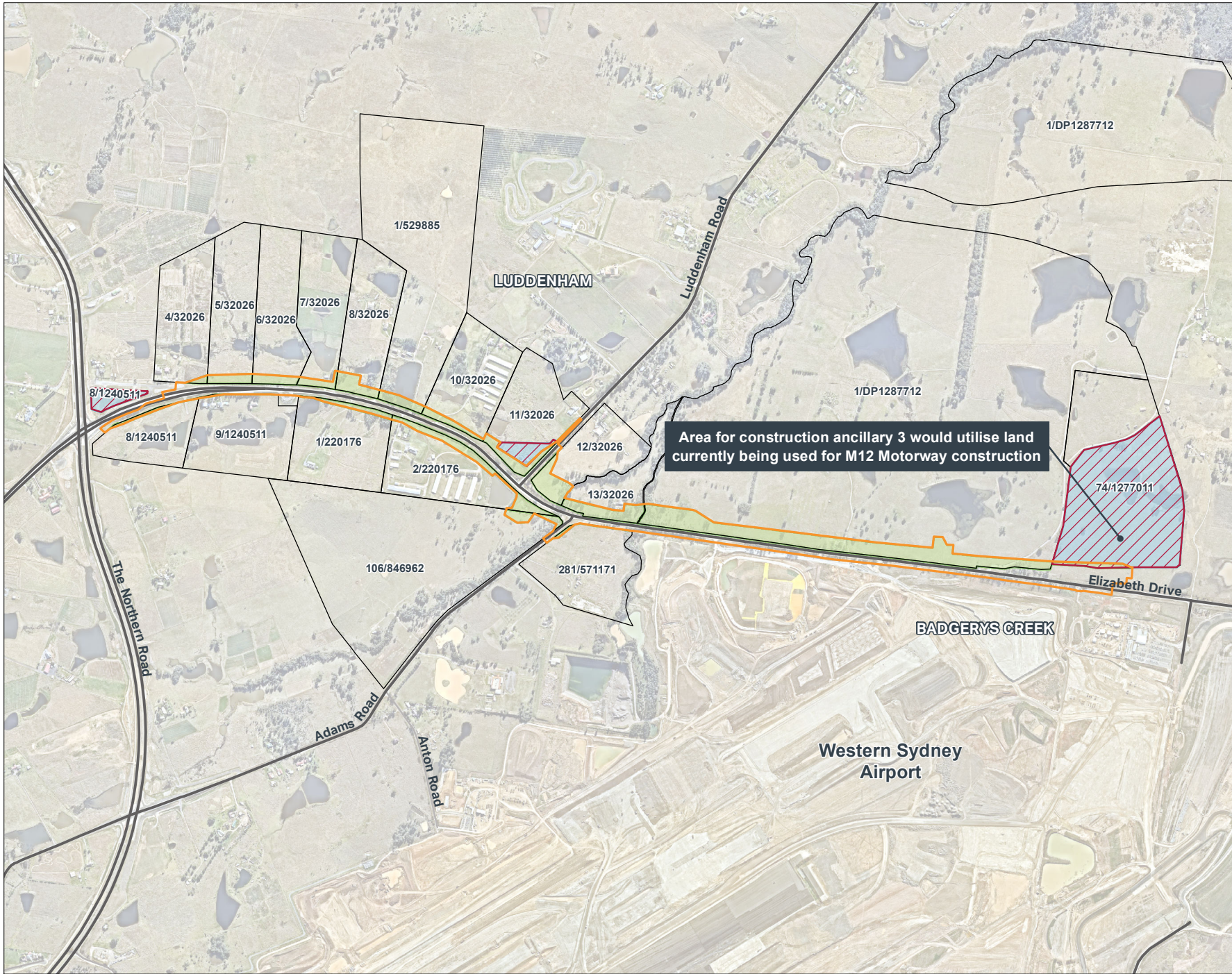
Land use zoning in the construction footprint is governed by the *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (Western Parkland City SEPP) and *Penrith Local Environmental Plan 2010*.

The proposal would change the land use from Agribusiness (AGB), Enterprise (ENT) and Environment and Recreation (ENZ) (subject to the Western Parkland City SEPP) to Infrastructure (SP2) over that portion of the land to be acquired for the operation of the proposal, which generally adjoins the existing Elizabeth Drive. The change of land use would any existing land uses in the acquired portion of the property. It is assumed that this impact would vary depending on whether landowners derived an income from the portion of land or whether partial acquisition of this section affects wider commercial or agricultural operations, or not.

Impacts of acquisition are assessed in further detail in this section for residential and commercial (including agricultural) properties.



**FIGURE 6-1:**  
**PROPERTY ACQUISITION AND**  
**TEMPORARY LEASES FOR THE**  
**PROPOSAL**



Area for construction ancillary 3 would utilise land currently being used for M12 Motorway construction

- Legend**
- Operational footprint
  - Construction ancillary facility
  - Property boundary
  - Primary road
  - Local road
  - Property Acquisition**
  - Partial Acquisition
  - Lease

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## Residential properties

The proposal has the potential to directly impact upon residential properties through partial acquisition of areas adjoining Elizabeth Drive. Of the properties proposed to be partially acquired, several accommodate residential uses. At the majority of these properties, partial acquisition is anticipated to directly impact parts of driveways or internal tracks, rather than dwellings or buildings. One property has been identified which potentially includes a dwelling within the area proposed to be partially acquired.

Acquisition has the potential to affect people with a deep connection to their property, which may have been in the family for generations. In some instances, it may be difficult to find another property with equivalent facilities and amenity to that being acquired.

A complete list of the properties proposed to be partially acquired, including the potentially affected infrastructure within each (based on desktop review and subject to landowner consultation), is included in **Appendix C** (Property acquisition) of the REF.

Property adjustments at the properties identified for partial acquisition would also be required and include adjustments to fencing, farm dams, sheds, driveways and letterboxes, and a loss of vegetation and grassed areas. This has the potential to affect communities by placing additional pressure and stress on residents due to loss of land used for various uses (for example, uses as a driveway, areas used for parking within the property, or infrastructure on the property such as sheds or dwellings).

Transport would consult with landowners subject to property acquisition throughout detailed design to identify opportunities to avoid impacts to buildings, where possible (refer to **Section 8.0**).

The magnitude of the impact of the acquisition process is considered to be low given the number of properties affected. The sensitivity of affected landowners is considered to be moderate given the disruption to residents. As a result, the socio-economic significance of impact is considered to be a moderate-low negative impact. In the context of the planned transformation of the social locality as part of the Western Sydney Aerotropolis, changes to residential properties represent a relatively small change which the community would likely be able to adapt to.

## Business and commercial (including agricultural) uses

One known business premises, a duck farm located on Lot 2 / DP 220176, would be partially acquired for the proposal, predominately along the border with Elizabeth Drive within the area shown on **Figure 6-1**. While the majority of the property would not be acquired, partial acquisition would result in a minor reduction the availability of land within the property for agricultural use. Subject to detailed design and landowner consultation, acquisition is not anticipated to impact the existing farm dam located on this property.

Adjustments to the location of fencing and driveway at the property on which the duck farm is located would also be required. Access to the driveway during the day and night for deliveries is required for the operation of this business. As part of detailed design, Transport would consult with the landowner to confirm the configuration of adjustments to the property, and to identify measures to maintain business access (refer further to **Section 8.0**). Impacts associated with access to businesses are discussed further in **Section 6.7.1**.

Partial acquisition would affect other agricultural properties which may be used for commercial purposes. Impacts to these properties would likely include minor reductions in the availability of land for agricultural purposes, and adjustments to driveway access. Specific consultation would be undertaken throughout detailed design and construction planning to confirm the nature of impacts, and to identify measures to manage these (refer to **Section 8.0**).

The magnitude of the impact of the acquisition process is considered to be low given that partial acquisition would result in relatively small reductions to the overall size of properties, and fair market compensation would be provided to landowners affected by partial acquisition. The sensitivity of the affected businesses would be moderate given the potential for disruption to business operations, noting that the businesses would likely have some capacity to adapt to change. As a result, the socio-economic significance of impact is considered to be a moderate-low negative impact.

### Temporary use of properties for construction ancillary facilities

Construction of the proposal would require the temporary leasing of privately owned land to accommodate the three proposed construction ancillary facilities and associated access (as shown on **Figure 6-1**). This would result in a temporary disruption to the existing use of the land. The nature of the impact would depend upon the specific use of the land and the reliance on the land by the owner/occupier. Consultation with landowners would be ongoing to establish necessary agreements and arrangements for leasing and access prior to construction. The temporary leasing of the privately owned land would disrupt the affected landowners' ability to use the portion of land subject to the lease agreement. This impact would be temporary in nature, with all leased property to be reinstated in accordance with the lease agreement, in consultation with the landowner.

Construction ancillary facility 1 (on Lot 8 / DP 1240511) is located on land previously used for a similar purpose, to support the construction of the Northern Road Upgrade, which was completed in 2022. The ancillary facility would be located between a former section of Elizabeth Drive to the north and the existing Elizabeth Drive to the south. Use of this facility would avoid the requirement to lease land within the vicinity, and subsequent impacts to previously undisturbed land uses such as residences or commercial properties. While construction of the proposal would not commence until 2026, surrounding landowners may however experience construction fatigue from exposure to amenity impacts (such as noise and visual impacts). These impacts are assessed in **Section 6.2**.

Construction ancillary facility 3 would be located on land which is currently being used to support construction of the M12 Motorway. This would also avoid new impacts to land uses by using previously owned land. The continued use of this facility has the potential to result in construction fatigue and cumulative impacts to surrounding landowners, which has been assessed in **Section 6.8**.

Construction activities would be temporary in nature and, in itself, would not result in permanent land use changes. Post construction, these areas would be restored to their previous use in consultation with the landowner. Overall, the magnitude of impact and sensitivity of receptors would be highly dependent on the specific land use, the activities taken within it, and the reliance of the owner/occupier on the land. The overall magnitude of the temporary use of land for the affected properties is considered to be low given that several of the facilities have previously been used for similar purposes. The sensitivity of affected landowners is considered to be low given the landowners would be paid for the temporary lease. As a result, the significance of leasing properties on the socio-economic environment is considered to be a low negative impact.

## 6.2 Amenity

The amenity and character of an area contributes to the community's shared identity and way of life. Amenity refers to the sounds, look and feel of a place and the activities that take place within it. Impacts or changes to amenity during construction can include any factor that impedes, alters, or enhances a resident or visitor's enjoyment of their home or daily activities. Examples include changes to noise levels, views, access to services, or changes to air quality.

The impact of the proposal on relevant amenity factors during construction was frequently mentioned in the residential survey and has been considered below.

### 6.2.1 Traffic

Construction of the proposal would temporarily increase additional traffic volumes on Elizabeth Drive and local roads and may affect travel times, resulting in minor traffic disruptions and road safety changes. This may also disrupt a residents' and the community's ability to access their homes, workplace, local businesses and community facilities in the local area.

As outlined in **Chapter 3** (Description of the proposal) of the REF, it is anticipated that at peak construction of the proposal, 200 light vehicles per day would be used by workers and 70 heavy vehicles per day would deliver materials, remove material from earthworks and support other construction activities. Construction traffic would be distributed across the construction ancillary facilities and along the proposal alignment, depending on the stage of construction and progression of construction activities.

Heavy vehicle movements, which are likely to have the largest impact, would be largely related to earthworks or spoil movement, but would also include other movements including girder delivery and plant

delivery. Heavy vehicles would only access construction sites from approved heavy vehicle routes (refer to **Chapter 3** (Description of the proposal) of the REF).

It is expected that reduced lane widths and relocated traffic lanes, temporary signage and speed limits would be required around the main work and ancillary facilities during construction. Final construction methods would be refined to minimise traffic and transport impacts. However, traffic restrictions would be unavoidable during some activities, such as intersection and tie-in activities, installation and adjustment of barriers and signage for construction zones during each construction stage and drainage and utility work across and under Elizabeth Drive. Potential traffic impacts arising from the construction of the proposal include:

- Increased travel time due to reduced speed limits around construction sites
- Increased travel time due to increased truck and construction machinery movements
- Temporary lane closure and altered property accesses during construction.

In the residential survey, respondents outlined that the change in traffic conditions could increase wait times, levels of stress and anxiety for those using Elizabeth Drive. For residents, the change could also lead to people feeling slightly disconnected from their community, potentially contributing to self-isolation and subsequent impacts on wellbeing. This could be due to a perceived loss of access due to the visible increase in traffic, construction work and people.

To address traffic and access impacts, all construction work would be managed in accordance with a Traffic Management Plan (TMP) prepared prior to construction.

Based on the nature of the proposal's likely traffic impacts, the magnitude of impact is considered to be moderate due to the potential for traffic delays and disruptions. The sensitivity of the receptors affected by the impact are considered to be moderate, as Elizabeth Drive is one of the key roads which residents and businesses alike would rely upon. As such the overall significance of socio-economic impact would be a moderate negative impact.

### **6.2.2 Noise and vibration**

Exposure to noise and vibration has the potential to affect people's work, recreation, social and home lives. This includes the potential to interfere with daily activities or the enjoyment of these activities. It may also affect concentration and memory, particularly with regard to a child's school performance or a business activity that depends on quiet environments. At home, high levels or certain types of noise may disrupt sleep and rest patterns and/or may create or exacerbate health concerns such as hearing impairments and cardiovascular health (e.g. elevated blood pressure).

Increased levels of noise and vibration would be generated during construction of the proposal, when compared to the existing noise environment. Noisy activities from the construction of the proposal may include:

- Site establishment and enabling works
- Utility works and property adjustments
- Demolition
- Vegetation removal
- Earthworks
- Drainage works
- Bridge works
- Pavement works
- Landscaping and finishing works.

The level of noise generated by these activities would vary substantially through the construction period based upon the specific type of activity being undertaken, and their location.

Noise would also be generated by construction traffic and workers accessing the construction facilities. All noise sources have been further assessed in the Noise and Vibration Assessment (**Appendix D**) of the REF.

The assessment of noise associated with the construction of the proposal indicated that there would be noise exceedances at residential properties during the daytime and night-time during certain activities, with vegetation clearing resulting in the greatest number of exceedances. These exceedances were attributed to the close proximity of the construction works to residences. The construction noise assessment did not identify exceedances at non-residential properties.

Vibration impacts would only likely affect people if undertaken within the human comfort minimum working distances. This may result in annoyance for some and concern for cosmetic damage to buildings. Receivers located within the minimum distances for human comfort would be notified of the potential impacts as part of the notification of highly noise affected receivers. Work undertaken within minimum working distances for cosmetic damage may cause damage to structures. However, damage to heritage and other structures is unlikely to occur when the management measures have been implemented appropriately.

Construction noise during the day is likely to disrupt residents and employees work performance and communication, while during the night sleep may be disrupted. The noise levels would lead to increased levels of fatigue, stress and anxiety. There could also be adverse impacts on the mental and physical health of residents. As the works are expected to be staged, the number of affected residential receivers at any one time would be limited. The highest impacts are expected during truck movements. However, as noted works would only be undertaken on a number of nights throughout the entire construction period and only a limited number of receivers would be affected during any one set of works.

The implementation of the proposed noise and vibration mitigation measures would minimise and manage noise and vibration impacts on noise sensitive receivers. These measures have been developed in accordance with the Construction Noise and Vibration Guideline (RMS, 2016), and include carrying out noise intensive work during less sensitive time periods, implementation of respite periods, installation of at-receiver treatments and ensuring sensitive receivers are kept informed during construction.

Based on the nature of the proposal's predicted noise impacts, the magnitude of impact is considered to be moderate. The sensitivity of the receptors affected by the impact is considered to be moderate. As such the overall significance of socio-economic impact would be a moderate negative impact.

### 6.2.3 Visual amenity

Visual amenity may be described as the pleasantness of the view or outlook of an identified receptor or group of receptors (e.g. residences, recreational users). Views within the local and wider landscape are an important part of an area's overall character and offer a wide variety of benefits to the community in terms of facilitating quality of life, wellbeing and economic activity.

The construction of the proposal would result in visual impacts to a variety of receptors. These include road users, residents and businesses. Visual amenity may be affected by removal of vegetation, establishment of construction ancillary facilities, installation of construction hoardings and the visual appearance of construction sites, equipment, materials and site sheds. Other factors may include the alteration of view corridors to heritage items or places, open space or water bodies. **Table 6-1** provides a summary of the visual impacts during construction at each assessed viewpoint in the Urban Design, Landscape Character and Visual Impact Assessment (**Appendix K**) of the REF.

Construction elements which would be visible would typically comprise construction activity within the Elizabeth Drive road corridor (including the removal of vegetation) and the ancillary facilities positioned within the study area. The changes would be seen from a low number of visual receptors living or working in surrounding properties and a high number of visual receptors travelling along Elizabeth Drive and connecting roads.

**Table 6-1 Landscape character and visual amenity construction impacts**

Viewpoint	Construction visual impact (what can be seen from the viewpoint)	Sensitivity
Viewpoint 1: The Northern Road	<ul style="list-style-type: none"> <li>Passing construction vehicles travelling to and from the construction footprint</li> <li>Construction ancillary facility 1 would be partially visible</li> </ul>	Moderate

Viewpoint	Construction visual impact (what can be seen from the viewpoint)	Sensitivity
Viewpoint 2: 2289 Elizabeth Drive, Luddenham	<ul style="list-style-type: none"> <li>Construction ancillary facility 1 and associated construction activities such as car parking, site offices and amenities buildings, laydown and storage of materials, plant and equipment, and material crushing and stockpiling. Detailed views to the work on the ground are unlikely due to the distance to the work and some vegetation screening.</li> <li>Construction traffic</li> <li>Removal of some vegetation</li> </ul>	Moderate
Viewpoint 3: 2550 Elizabeth Drive, Luddenham	<ul style="list-style-type: none"> <li>Various construction activities within the construction footprint</li> <li>Construction traffic.</li> </ul>	Moderate
Viewpoint 4: 889 Luddenham Road	<ul style="list-style-type: none"> <li>Removal of some vegetation</li> <li>Various construction activities within the construction footprint</li> <li>Construction traffic</li> <li>Construction ancillary facility 2, which would be surrounded by temporary fencing and signage. Activities likely to be seen within the ancillary facility include car parking, site offices and amenities buildings, laydown and storage of materials, plant and equipment, and material crushing and stockpiling.</li> </ul>	Moderate
Viewpoint 5: Adams Road	<ul style="list-style-type: none"> <li>Removal of some vegetation</li> <li>Construction activity on Adams Road and Elizabeth Drive in the middle to background, such as include earthworks and drainage work, main roadwork, planting and finishing work</li> <li>Construction traffic.</li> </ul>	Low
Viewpoint 6: 2141 Elizabeth Drive, Luddenham	<ul style="list-style-type: none"> <li>Construction activities such as site establishment (including set up of environmental protection controls), vegetation removal, earthworks and drainage work, main roadwork, including walking and cycling infrastructure, planting and finishing work</li> <li>Construction traffic.</li> </ul>	Moderate
Viewpoint 7: Elizabeth Drive East	<ul style="list-style-type: none"> <li>Construction activities such as site establishment (including set up of environmental protection controls), vegetation removal, earthworks and drainage work, main roadworks, including walking and cycling infrastructure, planting and finishing work</li> <li>Construction traffic</li> <li>Removal of some vegetation.</li> </ul>	Low

The overall socio-economic magnitude of the above visual impacts is considered to be moderate given the direct and unscreened visibility of the construction work in close proximity to receivers. The sensitivity of receptors within this area is considered to be low given that the residents' existing views are of rural lands with scattered and often poorly maintained buildings/sheds; inadequate storage of materials; unkempt business premises with informal parking areas; amongst some well-maintained rural residential properties. As such the overall significance of socio-economic impact would be a moderate-low negative impact.

#### 6.2.4 Air quality

During construction, activities such as demolition, earthworks and the use of construction vehicles and machinery have the capacity to generate dust, odour and emissions. The real and perceived changes to local air quality as a result of construction activities can affect residents and visitors to the area through direct health effects, as well as increasing anxiety about the safety of their environment. The presence of nuisance dust also has the potential to affect people's enjoyment of their environment through their perception of its cleanliness, or through the requirement for additional cleaning to maintain their property.

The air quality impact assessment (**Appendix N** of the REF) prepared for the REF considered the impact of dust to human health, ecological health and dust soiling. This assessment found the potential dust risk

rating during construction ranges from high to medium due to the close proximity of the construction to sensitive receivers.

The source of emissions during the proposal construction phase would be due to the combustion of petrol and diesel fuel. This would occur from the construction vehicles (light and heavy) traveling to and from site, use of vehicles and machinery as onsite, mobile construction equipment and stationary equipment such as diesel generators. Given the existing volume of traffic utilising Elizabeth Drive, emissions from construction traffic are unlikely to result in a notable reduction in ambient air quality at nearby sensitive receptors.

Potential odour arising from construction would be temporary in nature, being generally limited to the potential disturbance of acid sulphate soils (ASS) or potential odorous contaminants contained in uncontrolled fill along the alignment during earthworks. The probability of intercepting ASS across the construction footprint is extremely low (refer to the Phase 1 Contamination Assessment for the proposal in **Appendix M** of the REF for more details). In the event ASS or contaminated soils are encountered during excavation works, the implementation of safeguards outlined in the REF would mitigate odour impacts.

The air quality impact assessment (**Appendix N** of the REF) determined that there is a low risk to human health due to the proposal. However, those with existing conditions may be more susceptible to health risks and may experience stress and anxiety due to the change from the existing environment. With appropriate dust suppression measures, such as water carts, dust is anticipated to be of a low impact. Vehicle emissions are not anticipated to be significant due to the lowered speed limits and machinery management measures whereby vehicles not in use are to be turned off.

Based on the above, the magnitude of impacts to air quality are considered to be low, with the overall sensitivity of all receptors considered to be low. As such the overall socio-economic significance is a low negative impact.

## 6.3 Access and connectivity

### 6.3.1 Property access

During construction access to properties would be maintained as far as practicable, though some accesses to residential properties on Elizabeth Drive and adjoining roads (such as Luddenham Road and Adams Road) may be temporarily disrupted. Access for emergency services would be maintained at all times.

Changes or disruptions to property access has the potential to cause stress and anxiety for residents as they may experience difficulties or delays in accessing their homes or social infrastructure. For businesses it may affect customer access or may affect the ability of the business to operate affectively if they require frequent access for delivery or distribution of goods and services. However, such access impacts would be limited to short term restrictions, with sufficient notification provided to landowners, and alternate access arrangements would be provided wherever possible.

Noting the relatively low number of affected properties, the commitment to maintain access for all properties during construction and notification of any disruptions well in advance, the magnitude of impact to access is considered to be low. The sensitivity of the receptors affected by these impacts are considered to be moderate given the likely ability of residents and businesses to adapt to such a change. As such the overall significance of socio-economic impact would be a moderate-low negative impact.

### 6.3.2 Road network and connectivity

Construction activities are likely to require temporary lane closures and changes to speed limits on Elizabeth Drive. Motorists using these roads may experience temporary delays to their journey, which may result in stress, anxiety or frustration.

Connectivity impacts may also affect local businesses through delays to deliveries, disruptions to customer access and reductions in passing trade. It is noted that the socio-economic consultation indicated that 22 per cent of local businesses are highly reliant on passing trade (refer to **Appendix B** (Socio-economic survey result) for further detail). These impacts would vary according to the type of business and their specific sensitivity to such impacts.

A detailed construction methodology, which would include the staging of work to maintain access, pedestrian and vehicle movements, and an associated TMP would be developed prior to commencement of construction to manage potential traffic and access impacts. Further information on transport and access impacts is provided in **Section 6.2** of the REF.

Based on the above, impacts to access and connectivity are considered to be moderate, with the overall sensitivity of all receptors considered to be moderate. As such the overall socio-economic significance is a moderate negative impact.

### 6.3.3 Parking availability

There are no existing designated parking facilities along Elizabeth Drive or within the construction footprint.

The ancillary facilities would provide parking within the site for construction vehicles, both light and heavy, including sufficient parking for workers. Therefore, impacts to parking availability are considered to be negligible.

### 6.3.4 Public transport

There is currently limited public transport provision within the social locality, as outlined in **Section 4.5.3**. The proposal is not expected to notably affect the limited existing public transport services. All existing bus services would be maintained during construction as none utilise the construction footprint, though there is a potential for minor delays to bus services due to a reduction in speed limits and increased traffic during construction. Despite this the impact of construction on public transport is considered to be negligible.

### 6.3.5 Active transport

As outlined in **Section 4.5.4**, dedicated walking and cycling facilities are limited along Elizabeth Drive. Shoulders and verges are the only available means for pedestrians to travel along Elizabeth Drive, potentially exposing them to live traffic.

Pedestrian and cyclist access along existing shoulders and within lanes (for cyclists) would generally be maintained throughout construction. Where that is not feasible, temporary alternative access arrangements would be provided.

The introduction of construction traffic (including heavy vehicles) on the road network and entering/existing the proposed construction ancillary facilities may introduce safety risks and concerns for pedestrians and cyclists, noting that the volume of pedestrians and cyclists are likely to be very low. Measures to manage road user safety during construction would be implemented and included in the TMP for the proposal. This could include site specific traffic control measures, temporary alternative access arrangements, measures to consult and inform the local community of impacts on the local road network, and measures to ensure drivers are aware of areas of increased road safety risk, or other appropriate measures.

The sensitivity of active transport users in the area is considered to be low based on the low level of existing usage. The magnitude of impact is considered to be low given the short distance affected, the maintenance of access during construction and the current lack of formal facilities. On this basis the significance of this impact would be low (negative).

## 6.4 Community identity, values, aspirations and cohesion

The community strategic plans for the Fairfield, Liverpool and Penrith LGAs each outline key themes considered to represent the community values within their respective LGA, and provide overarching strategies and planning direction. An assessment of the potential construction impacts of the proposal on the key themes and values identified in these plans is outlined in **Table 6-2**.

**Table 6-2 Assessment of potential construction impacts on community values**

Key theme	Community value/ aspiration related to the proposal	Potential construction impact
Fairfield Community Strategic Plan		
Community wellbeing	<ul style="list-style-type: none"> <li>Healthy and active community</li> <li>An inclusive city with access to opportunities for the community.</li> </ul>	During construction, access to social infrastructure (outside of the construction footprint) may be affected due to road closures. Traffic management measures would be put in place to ensure that access is maintained where practicable.

Key theme	Community value/ aspiration related to the proposal	Potential construction impact
Places and infrastructure	<ul style="list-style-type: none"> <li>An accessible and liveable city.</li> </ul>	Road closures would be required during construction which would affect accessibility in the social locality. Traffic management measures would be put in place to ensure that active transport is not disrupted, and that access is maintained where practicable
Environmental sustainability	<ul style="list-style-type: none"> <li>Environmental compliance standards are met.</li> </ul>	A Construction Environmental Management Plan (CEMP) would manage all construction activities to ensure environmental compliance (refer further to <b>Chapter 7</b> (Environmental management) of the REF).
Local economy and employment	<ul style="list-style-type: none"> <li>Range of resilient businesses</li> <li>Diverse employment and job opportunities.</li> </ul>	During construction, employment opportunities would arise through labour hire or the provision of goods and services (refer to <b>Section 6.7</b> for further details).
Good Governance and leadership	<ul style="list-style-type: none"> <li>Decision making processes are open and transparent</li> <li>A well engaged and informed community.</li> </ul>	Community engagement has occurred prior to construction of the proposal (refer to <b>Section 5.0</b> ). Consultation with the community and relevant stakeholders would continue to occur prior to determination of the REF, and during construction of the proposal.
<b>Liverpool Community Strategic Plan</b>		
Healthy, inclusive, engaging	<ul style="list-style-type: none"> <li>Embrace the city's heritage and history</li> <li>Support an inclusive community by fostering access and equity for all</li> <li>Support active and healthy lifestyles by improving footpaths, cycleways and walkways and other infrastructure that promotes and supports active transport</li> </ul>	<p>Construction of the proposal would have limited temporary impacts on non-Aboriginal heritage items in the Liverpool LGA (refer to <b>Section 6.5.2</b>). Aboriginal sites (including artefact scatters, isolated artefacts and potential archaeological deposits) have the potential to be impacted by the proposal, which may impact upon records of the LGA's history and heritage. Safeguards and management measures would be implemented to manage potential heritage impacts during construction (refer further to <b>Section 8.0</b>).</p> <p>Road closures and changes to traffic arrangements may be required during construction which would affect accessibility in the social locality. Traffic management measures would be put in place to ensure that active transport is not disrupted, and access is maintained where practicable.</p>



Key theme	Community value/ aspiration related to the proposal	Potential construction impact
Liveable, sustainable, resilient	<ul style="list-style-type: none"> <li>• Deliver a beautiful, clean and inviting city for the community to enjoy</li> <li>• Manage stormwater and drainage infrastructure to mitigate risk to the environment and the community</li> <li>• Protect and enhance our natural environment and increase the city's resilience to the effects of natural hazards, shocks and stresses</li> <li>• Manage waste effectively and maximise recycling opportunities</li> </ul>	<p>Construction of the proposal may result in amenity impacts to residences and other receivers near the proposal (such as visual, noise, traffic and air quality impacts), which may detract from the community's ability to enjoy parts of the LGA. Safeguards and management measures would be implemented to manage these potential impacts (refer to <b>Chapter 7</b> (Environmental management) of the REF). Impacts to amenity are further discussed in <b>Section 6.2</b>.</p> <p>A CEMP would manage all construction activities to ensure environmental compliance, particularly for potential flooding events during construction, refer to <b>Section 7</b> (Environmental management) of the REF. The CEMP would also include measures to manage waste effectively.</p>
Evolving, prosperous, innovative	<ul style="list-style-type: none"> <li>• Facilitate quality local employment, training and education opportunities</li> <li>• Develop the economic capacity of local businesses and industries</li> <li>• Maintain strong relationships with agencies, stakeholders and businesses to achieve beneficial</li> <li>• outcomes for the city</li> </ul>	<p>The proposal would support employment and job opportunities during construction (refer to <b>Section 6.7</b>). Transport would continue to consult with Liverpool City Council throughout detailed design and construction planning, with a view to minimise adverse impacts and achieve beneficial outcomes from the proposal.</p>
<b>Penrith 2036+</b>		
We protect and enhance an ecologically sustainable environment	<ul style="list-style-type: none"> <li>• Green the landscape, provide more shade and protect biodiversity</li> <li>• Minimise the impacts of waste and pollution</li> </ul>	<p>The proposal would require removal of native and urban vegetation within the construction footprint, resulting in impacts to biodiversity (refer further to <b>Section 6.3</b> of the REF). This would be minimised where practicable, and measures would be implemented to manage potential impacts (refer to <b>Chapter 7</b> (Environmental management) of the REF).</p> <p>A CEMP would manage all construction activities to ensure environmental compliance, particularly for potential flooding events during construction, refer to <b>Chapter 7</b> (Environmental management) of the REF. The CEMP would also include measures to manage waste effectively.</p>

Key theme	Community value/ aspiration related to the proposal	Potential construction impact
We are welcoming, healthy, happy, creative and connected	<ul style="list-style-type: none"> <li>Enhance community wellbeing, safety and neighbourhood amenity</li> <li>Respect, engage and celebrate our diverse Aboriginal and Torres Strait Islander community, their rich heritage and continuing culture</li> </ul>	<p>Construction of the proposal may result in amenity impacts to areas near the proposal (such as visual, noise, traffic and air quality impacts), which may detract from the community's ability to enjoy parts of the LGA and impact upon wellbeing. Safeguards and management measures would be implemented to manage these potential impacts (refer to <b>Chapter 7</b> (Environmental management) of the REF)). Impacts to amenity are further discussed in <b>Section 6.1</b>.</p> <p>Registered Aboriginal Parties have been and would continue to be engaged in the Aboriginal cultural heritage assessment process for the proposal. This has included the involvement of Deerrubbin LALC and Gandangara LALC officers in the archaeological site survey (refer to <b>Appendix H</b> of the REF). Aboriginal sites (including artefact scatters, isolated artefacts and potential archaeological deposits) have the potential to be impacted by the proposal, which may impact upon records of the LGA's history and heritage. Safeguards and management measures would be implemented to manage potential heritage impacts during construction.</p>
We plan and shape our growing city	<ul style="list-style-type: none"> <li>Grow and support a thriving local economy</li> </ul>	The construction of the proposal would support employment and job opportunities during construction (refer to <b>Section 6.7</b> ).

The proposal would result in changes to the local amenity during the construction phase. These changes may result in decreased feelings of safety or changes to the sense of place and community cohesion. This could be due to increased noise levels, dust and reduced sightlines as result of construction hoarding, , noting few pedestrians are likely to be present in the vicinity of these facilities (refer to **Section 6.2**, which includes assessment of amenity impacts).

The results of the survey found that when asked, 13 per cent of residents and 31 per cent of businesses did not think that the construction of the proposal would affect them. Refer to **Appendix B** (Socio-economic survey results) for further details.

Overall, the magnitude of impact upon community values and aspirations is deemed to be low, given that any conflict with the values above would be temporary and relevant mitigation measures would be implemented. The sensitivity of the community to these matters is considered to be high due to their clear interest in promoting and achieving the aspirations in their community. As such the overall socio-economic significance is a moderate negative impact.

## 6.5 Cultural heritage

### 6.5.1 Aboriginal cultural heritage

A Stage 3 PACHCI assessment has been prepared for the proposal along with the Elizabeth Drive West Upgrade, which has included consultation with Aboriginal groups and stakeholders. Through this consultation, the PACHCI has identified that the construction footprint and surrounds hold cultural value for the local Aboriginal community including a feeling of attachment and responsibility for the land. These

values become tangible when tied to identified Aboriginal objects found at archaeological sites, however, the presence of Aboriginal objects is not required for a site to hold value for the Aboriginal community. Aboriginal sites may have social, spiritual or landscape values which are not tangible. Some of the key Aboriginal cultural heritage values expressed by stakeholders for the wider region relate to:

- Responsibility to look after the land, including the heritage sites, plants and animals, creeks, rivers, and the land itself
- Artefact sites and landscape features
- Culturally modified trees
- Intangible sites of spiritual significance
- Connectivity of sites and pathways throughout the landscape
- Creek lines, particularly larger landscape features and waterways such as South Creek. Larger waterways have been utilised by Aboriginal peoples for tens and thousands of years
- Indigenous plants and animals
- General concern for burials, as their locations are not always known, and they can be found anywhere.

Specific cultural values for the recorded archaeological sites within the study area have not been identified by Aboriginal stakeholders to date.

The existing Elizabeth Drive road corridor within the construction footprint is generally highly disturbed, as a result of previous road construction activities such as cut and fill earthworks, and installation of utilities, which has likely impacted upon Aboriginal cultural heritage values within the construction footprint. Notwithstanding, there are several construction activities associated with the proposal that would further impact upon Aboriginal cultural heritage, including the cultural values identified above.

Construction work would partially impact upon one Aboriginal site. This site is considered to display moderate significance based on its scientific value and potential to inform on Aboriginal landscape use of South Creek and its tributaries. The significance of harm to the portions of the site within the study area is moderate, given the sites' moderate archaeological significance. To manage these impacts, an Aboriginal Heritage Impact Permit would be obtained, and a combination of salvage excavation and community collection of surface artefacts would be undertaken prior to the commencement of any activities which may harm the site. This would allow cultural values to be recorded and protect these objects from further harm. Appendix I (Aboriginal Cultural Heritage Assessment Report) of the REF describes the process to manage these impacts in further detail.

Collectively, these impacts and changes to the construction footprint could adversely impact upon Aboriginal stakeholders' sense of responsibility and ability to access and look after the land.

Consultation with Aboriginal stakeholders would continue throughout detailed design to further understand the specific impacts of the proposal upon Aboriginal cultural values, and to seek opportunities to minimise adverse impacts.

Based on the nature of the Aboriginal cultural heritage impacts, and the results of the Stage 3 PACHCI, the magnitude of impact is considered to be moderate. The sensitivity of the receptors affected by the impact are considered to be moderate. As such the overall significance of impact would be a moderate adverse impact.

### 6.5.2 Non-Aboriginal cultural heritage

The history and heritage of an area can form the identity of the community who live amongst it. There are four items of non-Aboriginal heritage within the construction footprint: Luddenham Road Alignment, McGarvie Smith Farm, McMaster Field Station and Badgerys Creek post office.

As identified in **Section 6.4** of the REF, there are no anticipated impacts to McMaster Field Station and Badgerys Creek post office during construction.

Construction ancillary facility 3 would be located within part of the heritage curtilage of the McGarvie Smith Farm, however heritage significant buildings and structures would be located outside of the construction

footprint. The Luddenham Road alignment is expected to be directly impacted by the proposal during the construction phase as the proposal would alter the width of the existing road.

Although McGarvie Smith Farm and the Luddenham Road alignment are subject to construction impacts, the historically significant buildings at McGarvie Smith Farm and the historic context and the aesthetic appeal of Luddenham Road alignment would not be lost.

Based on the nature of the non-Aboriginal cultural heritage impacts, the magnitude of impact is considered to be low. The sensitivity of the receptors affected by the impact are considered to be low. As such the overall significance of impact would be a low negative impact.

## 6.6 Demographic changes

Construction of the proposal has the potential to influence the social makeup of an area through the employment of a construction workforce and displacement of people for construction activities.

The proposal requires the partial acquisition of 18 properties. As identified in **Section 6.1**, acquisition is expected to directly impact one residential dwelling within the area required for the upgraded Elizabeth Drive, which may require residents in this dwelling to relocate within the region or elsewhere. These changes are not expected to affect the overall demographic of the social locality as a whole. The expected population changes as a result of construction would be negligible in comparison to associated changes from surrounding planned development.

The construction workforce would comprise trades and construction personnel, subcontractor personnel and engineering. The workforce for construction of the proposal would be expected to be sourced locally, where appropriate skill sets are economically available. Given the duration of the construction program (expected to take around 48 months), there is a possibility that some of the construction workforce may choose to relocate to the study area to be close to work. However, this trend is expected to be very limited given the accessibility of the proposal by private vehicle and the location within Greater Sydney, in proximity to existing centres such as Liverpool. Overall, due to its duration, location and accessibility, it is likely that workers could be drawn from within Greater Sydney generally and as such it is not expected that workers would need or choose to relocate to live in or nearby the social locality. As such, the construction of the proposal would have a negligible effect on local residential population and demographics.

## 6.7 Businesses and the economy

This section assesses socio-economic impacts associated with changes to business access, travel time, and the broader economy. Impacts associated with partial acquisition of business premises are assessed in **Section 6.1**.

### 6.7.1 Business access and travel time

Businesses may be affected due to delayed or hindered access to workplaces or servicing areas owing to local traffic construction constraints and congestion. Changes in business access and travel time have the potential to affect the customer base of a business, as patrons may be discouraged to attend a business due to the accessibility challenges, resulting in a potential loss of trade. The productivity of employees may also diminish due to construction traffic or travel delays. Employees may arrive late to work or need to leave earlier in response to changes in traffic conditions. Changes in travel time and property access may also impact the timing and efficiency of deliveries to and from a business if changes in traffic conditions are not accounted for.

Property access would be maintained as far as practicable throughout construction during both day and night time periods, including access to businesses. Final construction methods would be refined to minimise traffic and transport impacts where feasible. However, traffic restrictions would be unavoidable during some construction activities, such as road surfacing work at intersections and tie-in points and drainage and utility crossings. Where these are required, advance notice would be provided, and the duration of disruptions would be limited.

Businesses within this section of Elizabeth Drive mainly comprise agricultural industries. The sensitivity of this type of operation to access and travel time impacts is considered to be moderate, as they are likely to rely on deliveries to and from the business. The magnitude of impact is considered to be low. On this basis the significance of this impact would be a moderate-low negative impact.

Implementation of recommended management measures (such as advance notice and minimising duration of disruption), and consultation with businesses prior and during construction to identify their specific business needs, would help mitigate this impact (refer further to **Section 8.0**).

### 6.7.2 Business amenity

Amenity impacts include any factors that affect the ability of customers, employees or business owners to enjoy their workplace and daily activities. These may include adverse change to noise and vibration levels, traffic, views or air quality. Many businesses such as accommodation providers, restaurants, cafes, and health and beauty businesses rely to an extent upon high levels of local amenity. This includes aspects such as low traffic, low background noise and the presence of positive visual environments including street vegetation and green spaces. Adverse impacts on a business's amenity could potentially result in loss of trade as customers shop elsewhere to avoid adverse conditions. Agricultural businesses may include livestock with sensitivity to amenity impacts (such as construction noise), which may also impact upon the operation of the business.

Known businesses that are within one kilometre of construction activities and ancillary facilities that may be affected by changes in amenity are shown in **Table 6-3**. There may be additional businesses within this radius, which would be identified through consultation activities prior to the commencement of construction for the proposal.

**Table 6-3 Identified businesses located nearby to the construction footprint**

Name of business	Business type	Location	Approximate distance from construction footprint
Luddenham Raceway	Recreation	821-849 Luddenham Road, Luddenham	1 kilometre north
Luddenham Lodge Horse Riding	Recreation	846 Luddenham Road, Luddenham	650 metres north
Duck farming business	Farm	2550 Elizabeth Drive, Luddenham	Adjacent to the south
Workers Hubertus Country Club	Recreation	205 Adams Road, Luddenham	800 metres south

Businesses close to the construction footprint are likely to be affected by changes in amenity due to the construction of the proposal. Changes in traffic speeds and arrangements are also likely to affect business practices for businesses which utilise Elizabeth Drive (within the construction footprint), and businesses who have frequent deliveries such as farming businesses.

Ancillary facilities would be screened (for example, with hoarding or similar measures) and managed to reduce amenity impacts to surrounding businesses.

As identified in **Section 8.0**, specific consultation would be carried out with businesses potentially impacted during construction. Consultation will aim to identify potential construction impacts to individual businesses, such as amenity impacts to sensitive components of the business. Based on this consultation, specific feasible and reasonable measures to address potential impacts would be identified and implemented.

Amenity impacts on businesses associated with the proposal would be localised and temporary in nature. As such the magnitude of impact is considered to be low, with the overall sensitivity of nearby businesses being low. Considering this, the overall impact of construction activities on business amenity is a low negative impact.

### 6.7.3 Economic impacts

Construction activity directly benefits the economy by injecting economic stimulus benefits into the local, regional and state economies. The economic benefit of construction is multi-dimensional, including:

- Job creation and the continuation of employment – elements of the proposal would require major goods and services including excavation and earthmoving equipment, building materials and ongoing services such as transport. Where available and cost effective, future employees would be sourced from the local area or region, as would major types of goods and services used

- Generation of income – the proposal would generate income within the local and wider community by providing income for direct and indirect employment, together with the multiplier effect of proposal income expenditure
- Supply of goods and services – local businesses would benefit from proposal by providing the proposal with general goods and services.

During construction certain businesses are likely to benefit to a greater degree from the proposal's activities. These may include local construction contractors, businesses who service or supply goods to the construction industry such as food and beverage retailers, and other retail outlets that would cater to the day-to-day needs of the construction workforce as well as waste facilities. This temporary increase in revenue may subsequently lead to increased employment opportunities locally, which would inject additional money into the local economy.

Up to 240 construction workers would be required per day during construction. This would be for the entirety of the construction period, which is anticipated to last for about 48 months. These workers would be preferentially sourced locally where appropriate skill sets are available.

With respect to economic impacts, the magnitude of impact is considered to be moderate positive. The sensitivity of the receptors affected by the impact are considered to be low. As such the overall significance of impact would be a moderate-low positive impact.

## 6.8 Cumulative impacts

Cumulative socio-economic impacts may arise from other projects occurring at the same time in the social locality. The projects nearby to the proposal that may give rise to cumulative social impacts are as follows:

- Western Sydney Airport – a new full serviced airport operating curfew free, delivering international, domestic and freight services. This project is approved and currently under construction, and is expected to be completed by late 2026
- Sydney Metro Western Sydney Airport – a 23-kilometre new railway link from St Marys through to Western Sydney Airport and the Western Sydney Aerotropolis. Includes six new metro stations at St Marys, Orchard Hills, Luddenham, the commercial heart of the Western Sydney Aerotropolis and the airport. This project is approved and major construction is scheduled to be completed in 2026
- Western Sydney Aerotropolis – a large hub centred around the WSA providing for high-skilled jobs across aerospace and defence, manufacturing, healthcare, freight and logistics. As this comprises numerous individual developments, some construction periods may overlap with the proposal
- M12 Motorway – a new east-west motorway linking the Westlink M7 and the Northern Road, with a connection to the Western Sydney Airport near Badgerys Creek Road. Construction is underway and anticipated to conclude in 2025
- M7 Motorway Widening – construction and operation of an additional lane in both directions within the existing median of the M7 Motorway. This project is approved. Construction is anticipated to start in 2023 and be complete in 2025
- Elizabeth Drive East Upgrade – the upgrade of about 7.8 kilometres of Elizabeth Drive between Badgerys Creek Road to a point about 600 metres east of Duff Road at Cecil Hills. Subject to planning approval, construction of this section would be concurrent with the proposal.

Further information can be found in **Section 6.16** of the REF.

Potential cumulative social impacts during construction could include safety risks arising from increased traffic, increased amenity impacts as a result of noise, visual change, dust emissions, and health and wellbeing impacts from construction fatigue. Cumulative traffic and access impacts leading to delays in travel time or difficulties accessing public transport during construction could also lead to indirect social impacts such as anxiety, stress and frustration during the construction period.

Cumulative social impacts from nearby projects may include:

- Traffic and access – traffic generated from other project related construction activities would increase congestion and travel times. Nearby road upgrade projects would potentially require detours, therefore



changing the road network and access arrangements. These changes can lead to more traffic on local residential roads creating stress and anxiety for motorists and residents alike. Additionally, the changes to traffic and access may disproportionately affect people from non-English speaking backgrounds, as they may have difficulty understanding signposted diversion routes and signs indicating changed road conditions

- Noise and vibration – noisy construction activities may occur at the same time in close proximity to other projects. In these cases, it is possible that predicted noise levels may increase by up to 3 dB(A) which may disturb residents leading to frustration and loss of concentration
- Air quality – there is potential for cumulative air quality impacts to occur where construction activities (such as demolition, earthworks, use of construction vehicles and equipment, and waste management) for the proposal occur in temporal and spatial proximity to that of another project. This may lead to nuisance dust which may be frustrating to some residents
- Visual – visual impacts from the proposal are anticipated to predominantly occur for receivers located within and immediately adjacent to Elizabeth Drive. Projects nearby would also have construction hoarding but are likely to affect receivers not affected by the proposal, therefore limiting cumulative visual impacts
- Business and economic – nearby projects would also provide employment opportunities to the local area through labour for trades people, and business opportunities from supplying materials or renting construction equipment. As such there is the potential for a substantial positive cumulative impact in this regard
- Aboriginal cultural heritage – the proposal has the potential to contribute to cumulative impacts on the Aboriginal cultural record of the area and to Aboriginal cultural heritage values, along with other surrounding projects and the ongoing development of the Western Sydney Aerotropolis, through its direct impacts to the finite resource of Aboriginal sites. While this may occur, Appendix I of the REF (Aboriginal Cultural Heritage Assessment Report) acknowledges the presence of Aboriginal archaeological sites in the region which contain the same site features as the sites identified within the construction footprint, in similar landscapes to that of the construction footprint. The majority of the construction footprint is located within the disturbed road corridor of the existing Elizabeth Drive alignment. An upgrade to the existing road alignment (the proposal) rather than construction of a new route reduces the overall cumulative impact of the proposal on the surrounding environment and Aboriginal cultural landscape, thereby minimising cumulative impacts upon Aboriginal cultural heritage values
- Construction fatigue – a number of the projects noted above would potentially have overlapping or consecutive construction periods with the proposal. This could induce construction fatigue in people living and working in the area. This may be due to the combined impacts of different projects (e.g. traffic impacts from one project and noise impacts from another), or simply from the concurrent or consecutive nature of disruptions in the area. When considering the proposed construction start and duration for each, as well as their proximity, this impact is likely to be most felt by residents and businesses in Cecil Park, Kemps Creek, Badgerys Creek and Luddenham. Continued construction and change in the land use of the area associated with these projects and the broader development of the Western Sydney Aerotropolis could potentially result in residents choosing to relocate from the area due to construction fatigue. Residents and businesses may also experience consultation fatigue due to the cumulative volume and frequency of community consultation and communications associated with the proposal and other projects over several years. The construction contractor for this proposal would seek to address construction fatigue through the following means:
  - Coordination of construction – communication with other projects to understand specific project timeframes and to avoid concurrent or immediately consecutive construction activities in close proximity, where feasible
  - Communication – clear and frequent communication with the community, coordinated with other projects to ensure that similar projects retain consistent messaging and complaint mechanisms.

Overall, the magnitude of impact is considered to be moderate. The sensitivity of the receptors affected by the impact are considered to be moderate. As such the overall significance of impact would be a moderate negative impact.

## 6.9 Summary of construction impacts

A summary of the socio-economic impacts for construction related impacts is included in **Table 6-4**.

**Table 6-4 Socio-economic impact significance – construction**

Impact	Magnitude	Sensitivity	Level of significance
<b>Property</b>			
Partial acquisition of residential properties for the road corridor	Low	Moderate	Moderate-low negative
Partial acquisition of businesses for the road corridor	Low	Moderate	Moderate-low negative
Leasing of land for ancillary facilities	Low	Low	Low negative
<b>Amenity</b>			
Change in traffic conditions	Moderate	Moderate	Moderate negative
Noise and vibration from construction works	Moderate	Moderate	Moderate negative
Loss of visual amenity from construction works	Moderate	Low	Moderate-low negative
Decrease in air quality	Low	Low	Low negative
<b>Access and connectivity</b>			
Temporary changes or disruptions to property access	Low	Moderate	Moderate-low negative
Disruption to road network and connectivity impacts	Moderate	Moderate	Moderate negative
Parking availability	Negligible	Negligible	Negligible
Public transport access	Negligible	Negligible	Negligible
Active transport access	Low	Low	Low negative
<b>Community identity, values, aspirations and cohesion</b>			
Impact on community values and aspirations	Low	High	Moderate negative
<b>Culture</b>			
Partial loss of Aboriginal cultural site	Moderate	Moderate	Moderate negative
Impact on non-Aboriginal heritage items	Low	Low	Low negative
<b>Demographic changes</b>			
Change to demographics	Negligible	Negligible	Negligible
<b>Business and economy</b>			
Business access and travel time	Moderate	Moderate	Moderate negative
Loss of business amenity	Low	Low	Low negative
Economic impacts	Moderate	Low	Moderate-low positive
<b>Cumulative impacts</b>			
Cumulative impacts	Moderate	Moderate	Moderate negative

## 7.0 Operational impact assessment

### 7.1 Property

Land leased for the ancillary facilities and laydown areas would be restored following the construction period therefore having no impact during the operation of the proposal. Permanent property acquisition and changes to land use are addressed in **Section 6.1**.

### 7.2 Amenity

#### 7.2.1 Traffic

Elizabeth Drive would be widened from its existing two lane configuration to a four lane configuration, and would tie in with the future M12 Motorway. As part of the arterial road network of the Western Parklands City, Elizabeth Drive would become an important thoroughfare in Sydney, connecting the future M12 Motorway, new WSA and the Western Sydney Aerotropolis with the western Sydney strategic centres and the wider Sydney region.

With the increase in accessibility and decrease in congestion, people are likely to become better connected to their community. The ease of commuting could lead to an improved sense of place and could facilitate better access to social infrastructure like medical facilities, sports fields or community halls, increasing physical health and mental wellbeing. The proposal directly aligns and facilitates the aspiration of reduced congestion for the community.

Based on the nature of the operational proposal, the magnitude of impact is considered to be moderate positive due to the increase safety and decrease in congestion. The sensitivity of the receptors affected by the impact are considered to be moderate. As such the overall significance of impact would be a moderate positive impact.

#### 7.2.2 Noise and vibration

The operational noise impact assessment identified 60 residential receivers who would experience exceedances of the applicable noise criteria during the operational phase of the proposal (as defined by the NSW Road Noise Policy). These receivers are located along Elizabeth Drive. Of these:

- Noise levels are not predicted to increase by more than 2 dB(A) at any residential receiver
- Noise levels are predicted to exceed the cumulative noise limit at seven residential receivers (i.e.  $\geq L_{Aeq(15 \text{ hr})}$  or  $L_{Aeq(9 \text{ hr})}$  noise criterion + 5 dB(A))
- Noise levels are predicted to exceed the acute noise limit at four residential receivers (i.e.  $\geq L_{Aeq(15 \text{ hr})}$  65 dB(A) or  $L_{Aeq(9 \text{ hr})}$  60 dB(A)).

Operational noise is the product of several factors, including the physical layout of the road, the road surface, the types of vehicles using the road and their speed. Given the proposal would introduce new traffic lanes and a new wide central median, some maximum noise events may occur further away from residential receivers compared with the existing situation, leading to slightly reduced maximum noise levels. In some instances where the upgraded road would be located closer to receivers (compared to the existing road), maximum noise levels may increase slightly.

In addition to this, the widened road would substantially increase network capacity, reducing the potential for congestion during morning and afternoon peak periods. This would bring with it a reduction in the number of maximum noise events as sudden braking and acceleration from slow speeds would occur less frequently.

Based on the concept design, the results of the operational road traffic noise assessment concluded that seven noise sensitive residential receivers would experience noise levels above the operational noise criteria and therefore be eligible for the consideration of at-receiver noise treatment. Potential treatment options could be a mechanical ventilation and / or comfort conditioning systems. This would allow windows to be closed (reducing noise impacts) without compromising internal air quality or amenity.

For those properties that are eligible for at-receiver noise treatment due to operational impacts and also affected by construction noise, Transport would consult with the owners about implementing the treatments

prior to construction, to enable noise mitigation to be provided for both the construction and operation phases of the proposal. This would be subject to further consultation and detailed design outcomes.

The decrease in maximum noise levels from traffic on the road could increase levels of concentration and decrease disturbance and stress associated with noise levels. The increase in baseline noise from the anticipated increase in traffic is likely to frustrate and disturb those affected.

The magnitude of noise and vibration impacts are considered to be low given the existing appreciable levels of road traffic noise and implementation of at receiver treatment to mitigate operational noise levels. The overall sensitivity of all receptors is considered to be moderate. As such the overall socio-economic significance is a moderate-low negative impact.

### 7.2.3 Visual amenity

During operation, landscaping would be provided along the length of proposal within the central median and along road verges, which would separate traffic lanes from the walking and cycling paths. Landscaping would be subject to detailed design and would aim to maximise the use of locally endemic native species. This landscaping and the introduction of shared walking and cycling paths would substantially improve the landscape and visual environment for pedestrians and cyclists using Elizabeth Drive and its upgraded intersections, compared to the existing environment which includes limited footpaths or separation from the road corridor for these road users.

However, where dwellings, businesses, recreational facilities and other buildings would be located closer to the widened road corridor, compared to the existing Elizabeth Drive, visual amenity may be decreased as the road would be more prominent in views from these areas. Landscaping and the shared walking and cycling paths would aid in providing a visual buffer between receivers and the road corridor. Visual amenity would improve over time as vegetation matures.

**Table 7-1** shows a summary of the visual impacts during operation at each assessed viewpoint in the Urban Design, Landscape Character and Visual Impact Assessment (**Appendix K** of the REF).

**Table 7-1 Landscape character and visual amenity operation impacts**

Viewpoint	Operation visual impact	Sensitivity
Viewpoint 1: The Northern Road	<ul style="list-style-type: none"> <li>The changes would be screened from view from this location, with only a small portion of Elizabeth Drive visible from this position.</li> </ul>	Moderate
Viewpoint 2: 2289 Elizabeth Drive, Luddenham	<ul style="list-style-type: none"> <li>Changes due to the proposal would include the addition of taller elements within the road corridor, including lighting and signage and trees, which would be planted on either side of the widened road corridor, with smaller trees and shrubs in the central median</li> <li>Trees removed during construction would have been replaced with a larger number of new trees, resulting in a net gain of trees within the view once mature</li> <li>The view along Elizabeth Drive to the horizon would be partially screened by trees within the road corridor once they had reached maturity.</li> </ul>	Moderate
Viewpoint 3: 2550 Elizabeth Drive, Luddenham	<ul style="list-style-type: none"> <li>The road corridor would be widened to beyond the property boundary on either side, with the proposed changes including two lane carriageways heading east and west, separated by a median, and walking and cycling paths on either side of the road. On the outer edges of both carriageways the road would be bound by formalised kerb and gutters</li> <li>New lighting, signage and safety fencing would be included within the view, as well as turfed batters with planted vegetation to mitigate the change in levels between the road corridor and the surrounding landscape</li> </ul>	Moderate

Viewpoint	Operation visual impact	Sensitivity
Viewpoint 4: 889 Luddenham Road	<ul style="list-style-type: none"> <li>Changes due to the proposal would be the addition of trees to the intersection of Luddenham Road and to the east and west of the intersection along Elizabeth Drive</li> <li>Some infrastructure, such as signage and lighting, would be seen, but be visually recessive from this distance.</li> </ul>	Moderate
Viewpoint 5: Adams Road	<ul style="list-style-type: none"> <li>Changes seen would include the widening of Adams Road and Elizabeth Drive with new infrastructure at the intersection</li> <li>Vegetation removed during construction would visually result in a more open area, with additional road infrastructure such as lighting, signage and safety barriers seen within the view.</li> </ul>	Low
Viewpoint 6: 2141 Elizabeth Drive, Luddenham	<ul style="list-style-type: none"> <li>Changes seen would include the upgrade of Elizabeth Drive and the addition of the shared walking and cycling path</li> <li>New lighting, signage and safety fencing would be included within the view, as well as turfed batters to mitigate the change in levels between the road corridor and the surrounding landscape</li> <li>Landscaping and vegetation would be provided in the central median and on either side of the road corridor.</li> </ul>	Moderate
Viewpoint 7: Elizabeth Drive East	<ul style="list-style-type: none"> <li>Changes seen would include the widening of Elizabeth Drive and the addition of formalised kerb and gutters</li> <li>New lighting, signage and safety fencing would be included within the view, as well as turfed batters to mitigate the change in levels between the road corridor and the surrounding landscape</li> <li>Landscaping and vegetation would be provided in the central median and on either side of the road corridor.</li> </ul>	Low

The overall socio-economic magnitude of the above visual impacts is considered to be moderate due to the visually prominent change from the baseline condition. The sensitivity of the receptors affected by the impact is considered to be low due to the screened changes and transient nature in which motorist would use the construction footprint. As such the overall significance of socio-economic impact would be a moderate-low negative impact.

#### 7.2.4 Air quality

The air quality impact assessment (**Appendix N** of the REF) modelled the air quality changes from the existing environment due to the proposal for the years 2030 and 2040. The assessment considered concentrations of nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO) and particulate matters (PM<sub>2.5</sub> and PM<sub>10</sub>) along with predicted emissions arising from the traffic network. Vehicle emissions include both exhaust and non-exhaust emissions. Exhaust pollutant emissions are due to fuel combustion and include gaseous pollutants such as NO<sub>2</sub>, CO, Polycyclic Aromatic Hydrocarbons (PAH) and Volatile Organic Compounds (VOC) as well as particulates (PM<sub>10</sub> and PM<sub>2.5</sub>). Non-exhaust emissions from vehicles are generally limited to particulates and include processes such as brake wear, tire wear and suspension or resuspension of road dust due to the movement of the vehicles on a road.

The levels of NO<sub>2</sub>, CO, PM<sub>2.5</sub> and PM<sub>10</sub> are anticipated to decrease in the years 2030 and 2040 due to the proposal compared to the existing scenario. This is due to anticipated changes in vehicle fleets, with expected increased uptake in vehicles with more stringent emissions standards (or no emissions such as electric vehicles) and reduced number of aging vehicles with lower emission standards.

Additionally, the modelled air quality results do not include the potentially beneficial changes in road traffic volumes on the surrounding road network which may be influenced by the proposal. The proposal would facilitate infrastructure that would allow for the smoother movement of traffic around the road network.

Based on the above, impacts to air quality are considered to be of low magnitude, with the overall sensitivity of all receptors considered to be low. As such the overall socio-economic significance is a low positive impact.

## 7.3 Access and connectivity

### 7.3.1 Property access

All properties affected by changed access arrangements as a result of the proposal would be provided with restored or new permanent access arrangements prior to the completion of construction. None of the changed access arrangements are expected to substantially disadvantage properties. Driveways of properties would be adjusted or reconfigured where they have been impacted by road widening as part of the proposal. These adjustments would occur in consultation with property owners.

To improve the safety features of the road, a central median is proposed on Elizabeth Drive as part of the proposal. This would result in a loss of direct access to properties along Elizabeth Drive from the opposite direction of travel. To mitigate the loss of this direct property access, the proposal would provide several provisions for U-turn functions to be used primarily for local property access. The following existing and proposed provisions for U-turn functions would facilitate property access:

- Willmington Road: An existing U-turn facility west of the intersection to facilitate travelling eastbound on Elizabeth Drive
- Luddenham Road: A proposed provision for U-turn function as part of the proposal on the southern approach to facilitate travelling westbound on Elizabeth Drive
- Martin Road: A proposed provision for U-turn function proposed as part of Elizabeth Drive East Upgrade on the northern approach of Martin Road to facilitate travelling eastbound on Elizabeth Drive (separate to this proposal).

Property owners would need to use the existing and proposed provisions for U-turn functions to access properties in the opposite direction of travel which would slightly increase the travel time (generally under one minute). Further details on the estimated travel times between U-turn facilities is provided in **Appendix E** (Traffic and Transport Assessment Report) of the REF. While this may result in a minor inconvenience for residents, businesses and visitors wishing to access properties along Elizabeth Drive, it would not have an appreciable impact on their ability to access these properties. The median would also improve the safety of road users through reducing the risk of head on crashes.

The overall magnitude of impact to property access is considered to be low, with the overall sensitivity of all receptors considered to be low. As such the overall socio-economic significance is low positive impact.

### 7.3.2 Road network and connectivity

As described above in relation to traffic amenity (**Section 7.2**), the proposal would improve the traffic performance of Elizabeth Drive. The proposal would improve journey reliability and improve driver safety along the corridor through the provision of a widened road, dedicated turning lanes and shared walking and cycling paths for active transport.

The broader network would benefit through increased efficiency of traffic and a reduction in the likelihood of congestion in the context of an expected steep increase in demand associated with the opening of WSA and the broader development of the Western Sydney Aerotropolis. The expected reduction in congestion on Elizabeth Drive would reduce travel times for private vehicles, public transport services and freight. This would result in clear a benefit to businesses and residents in the social locality.

Improvements in the operation of the road network would lead to flow on benefits for the social environment. This may include improvements in community cohesion, sense of place and health and wellbeing through improved access to social infrastructure (outside of the construction footprint). It would also reduce stress and frustration associated with congestion, whilst also improving health outcomes through improved road safety.

Based on the above, the overall magnitude of impact to access and connectivity is considered to be moderate, with the overall sensitivity of all receptors considered to be moderate. As such the overall socio-economic significance is moderate positive impact.

### 7.3.3 Parking availability

There are no existing designated parking facilities along Elizabeth Drive. This would remain unchanged due to the proposal, and as such the overall socio-economic impact of this element is negligible.



### 7.3.4 Public transport

The new public transport infrastructure would be able to support more bus services in the construction footprint. The intersection of Elizabeth Drive and Luddenham Road would provide for the following bus infrastructure:

- 'Queue jump' bus lanes eastbound and westbound on Elizabeth Drive on approach to the intersection with Luddenham Road
- Two indented bus bays eastbound and westbound on Elizabeth Drive on the departure side of the intersection with Luddenham Road, each including provision for a new bus stop in each location.

The bus stop layout and associated furniture such as bus shelters, 'b' poles and signs would be designed and implemented by Transport's bus planning team in conjunction with the relevant local council. Additionally, the bus stop infrastructure design would comply with the *Disability Discrimination Act 1992*.

The introduction of public transport infrastructure within the construction footprint would facilitate the provision of public transport services within the social locality, increasing accessibility and connectivity. The proposal would support the aspiration for improved public transport for the community as noted in **Section 5.3**.

The provision of public transport, enabled by the proposal, would allow existing and future residents to access social infrastructure with greater ease and allow for the independence of those who may not drive. Access to social infrastructure and the wider community would improve the physical and mental health of residents, through accessing medical centres, sporting facilities and places of worship.

On this basis the magnitude of change would be moderate. The sensitivity of affected people is considered to be low, based on the current non-availability of public transport in this location. As a result, the overall social significance of the proposal on the public transport of the social locality is considered to be a moderate-low positive change.

### 7.3.5 Active transport

The proposal would include the provision a new shared walking and cycling path along Elizabeth Drive (eastbound and westbound). The new shared walking and cycling paths would improve the connectivity for cyclists on the network by connecting the proposed shared path to the new shared path along The Northern Road and the future M12 Motorway.

The inclusion of active transport infrastructure has the potential to contribute to a number of direct and indirect social and health benefits. The active transport link could facilitate community cohesion and reduce the number of those who may be isolated, improving the mental health of residents. Physical health of those in the social locality may increase due to the utilisation of the available and safe infrastructure.

The active transport link would also provide an accessible connection for residents to the wider community and facilities. This could increase independence and reduce isolation of residents. The connections would enable people to go about their daily activities with greater ease and contribute to the community's sense of place.

On this basis the magnitude of change would be high positive. The sensitivity of affected people is considered to be low, given the lack of active transport facilities in this location. As a result, the overall social significance of the proposal on the active transport options on Elizabeth Drive is considered to be a moderate positive change.

## 7.4 Community identity, values, aspirations and cohesion

The community strategic plans for the Fairfield, Liverpool and Penrith LGAs each outline key themes considered to represent the community values within their respective LGA, and provides overarching strategy and planning direction. An assessment of the potential operational impacts of the proposal on the key themes and values identified in these plans are included in **Table 7-2**.

Table 7-2 Assessment of potential operational impacts on community values

Key theme	Community value/ aspiration related to the proposal	Potential operational impact
<b>Fairfield Community Strategic Plan</b>		
Community wellbeing	<ul style="list-style-type: none"> <li>• Healthy and active community</li> <li>• An inclusive city with access to opportunities for the community</li> </ul>	The proposal would provide a safe active transport network for those living in the community. The provision of public transport infrastructure would also enable future links to strategic centres and employment opportunities in the Western Sydney Aerotropolis, and facilitate community connections.
Places and infrastructure	<ul style="list-style-type: none"> <li>• An accessible and liveable city</li> </ul>	The upgraded road, shared walking and cycling path and provisioning for public transport facilities delivered by the proposal would connect Elizabeth Drive to the wider community.
Environmental sustainability	<ul style="list-style-type: none"> <li>• Environmental compliance standards are met</li> </ul>	Elizabeth Drive would be maintained by Transport and in line with relevant Transport guidelines.
Local economy and employment	<ul style="list-style-type: none"> <li>• Range of resilient businesses</li> <li>• Diverse employment and job opportunities</li> </ul>	The proposal would help facilitate the connection of employment hubs in Western Sydney Parkland City.
Good Governance and leadership	<ul style="list-style-type: none"> <li>• Decision making processes are open and transparent</li> <li>• A well engaged and informed community</li> </ul>	Community consultation has occurred during the development of the proposal, and would continue during detailed design and construction.
<b>Liverpool Community Strategic Plan</b>		
Healthy, inclusive, engaging	<ul style="list-style-type: none"> <li>• Support an inclusive community by fostering access and equity for all</li> <li>• Support active and healthy lifestyles by improving footpaths, cycleways and walkways and other infrastructure that promotes and supports active transport</li> </ul>	The proposal would provide infrastructure to enable enhanced public and active transport allowing equitable access to social facilities. This would include shared walking and cycling paths along the upgraded Elizabeth Drive.

Key theme	Community value/ aspiration related to the proposal	Potential operational impact
Liveable, sustainable, resilient	<ul style="list-style-type: none"> <li>• Deliver a beautiful, clean and inviting city for the community to enjoy</li> <li>• Manage stormwater and drainage infrastructure to mitigate risk to the environment and the community</li> <li>• Deliver and advocate for a sustainable, cool and green city</li> <li>• Promote and advocate for an integrated transport network with improved transport options and connectivity</li> <li>• Protect and enhance our natural environment and increase the city's resilience to the effects of natural hazards, shocks and stresses</li> </ul>	<p>Some adverse amenity impacts may be experienced by the community during operation of the proposal, generally associated with road traffic noise at receivers closest to the proposal and the visual prominence of the upgraded road corridor. Safeguards and management measures would be implemented to mitigate and manage these potential impacts (refer to <b>Chapter 7</b> (Environmental management) of the REF). Amenity impacts are discussed further in <b>Section 7.2</b>.</p> <p>The proposal would remove and replace existing drainage infrastructure and include the provision of new drainage infrastructure, thus improving current conditions.</p> <p>Landscaping, including vegetation planting, would be provided along the verges and median of Elizabeth Drive within the construction footprint, contributing to the amenity of the area.</p> <p>The proposal would provide reliable and appropriate infrastructure for the Australian climate, with a design life of up to a 100 years.</p>
Evolving, prosperous, innovative	<ul style="list-style-type: none"> <li>• Continue to invest in improving and maintaining Liverpool's road networks and infrastructure</li> <li>• Promote and deliver an innovative, thriving and internationally recognised city</li> <li>• Facilitate quality local employment, training and education opportunities</li> <li>• Develop the economic capacity of local businesses and industries</li> <li>• Maintain strong relationships with agencies, stakeholders and businesses to achieve beneficial outcomes for the city</li> </ul>	<p>The proposal would provide reliable and essential road network connections for Greater Sydney and the social locality, which would support the growth of the Western Sydney Aerotropolis.</p> <p>Further, the Elizabeth Drive upgrade has been identified in the Western Parkland Blueprint (Western Parkland City Authority, 2021) as crucial to support the delivery of a connected, '30-minute city', where residents live close to jobs, services and amenities. The proposal would be a key intra-city transport node in the Western Sydney Aerotropolis and nearby growth areas enabling enhanced public transport linkages to the WSA and Western Sydney Aerotropolis.</p> <p>The proposal would contribute to economic and employment growth in the surrounding area due to the transport connection to Western Sydney Aerotropolis, which would potentially aid in the stimulation of current and future businesses in the area.</p> <p>Transport would continue to consult with Liverpool City Council throughout detailed design, with a view to minimise adverse impacts and achieve beneficial outcomes from the proposal.</p>

Key theme	Community value/ aspiration related to the proposal	Potential operational impact
<b>Penrith Community Strategic Plan</b>		
We protect and enhance an ecologically sustainable environment	<ul style="list-style-type: none"> <li>Green the landscape, provide more shade and protect biodiversity</li> <li>Strengthen sustainability and climate resilience</li> </ul>	<p>Landscaping, including vegetation planting, would be provided along the verges and median of Elizabeth Drive within the construction footprint, providing urban shade and contributing to the amenity of the area.</p> <p>The proposal would provide reliable and appropriate infrastructure for the Australian climate, with a design life of up to 100 years.</p>
We are welcoming, healthy, happy, creative and connected	<ul style="list-style-type: none"> <li>Enhance community wellbeing, safety and neighbourhood amenity</li> <li>Plan for, deliver and improve community services</li> </ul>	<p>Some adverse amenity impacts may be experienced by the community during operation of the proposal, generally associated with road traffic noise at receivers closest to the proposal and the visual prominence of the upgraded road corridor. Safeguards and management measures would be implemented to mitigate and manage these potential impacts (refer to <b>Chapter 7</b> (Environmental management) of the REF). Amenity impacts are discussed further in <b>Section 7.2</b>.</p> <p>The proposal would substantially increase the capacity of the road for the growing community and provide shared walking and cycling paths which would contribute to the amenity and safety of the road corridor for pedestrians and cyclists.</p>
We plan and shape our growing city	<ul style="list-style-type: none"> <li>Grow and support a thriving local economy</li> </ul>	<p>The proposal would contribute to economic and employment growth in the surrounding area due to the transport connection to Western Sydney Aerotropolis, which would potentially aid in the stimulation of current and future businesses in the area and improve freight connectivity.</p>
We manage and improve our built environment	<ul style="list-style-type: none"> <li>Plan and manage sustainable transport infrastructure and networks to meet current and future community needs</li> </ul>	<p>The proposal would provide transport network capacity along Elizabeth Drive which would support the growth in the surrounding area associated with the Western Sydney Aerotropolis, servicing current and future generations.</p>

The results of the community surveys (available in **Appendix B** (Socio-economic survey results)) highlighted the following aspirations and values that may be affected by the operation of the proposal:

**Aspirations:**

- Decrease in congestion
- Improve employment opportunities
- Improve public transport.

**Values:**

- Feeling safe and secure
- Community services such as shops, halls, sport grounds, places of worship, cycleways and footpaths
- Employment and parks and landscape features.

The proposal would introduce an additional lane in each direction and other road layout and safety improvements which would lead to the decrease in congestion, improved travel times and may lead to improved feelings of safety and security within the area. Refer to **Section 6.2** (Traffic and transport) of the REF for further detail on operational transport impacts and benefits.

The proposal would support the projected and planned development in the region and would play a key role in connecting people to strategic centres, thus improving employment opportunities through better access. The improvement of access and decrease in congestion would allow for employees to move about with greater ease and for supplies and products to be moved with fewer delays. This would have a flow on positive impact of lowering labour and fuel costs for employees, businesses and ultimately consumers.

The improvement in traffic conditions and accessibility on the widened area of Elizabeth Drive could lead to better connectivity between people and social infrastructure within the social locality. This, combined with the provision of active transport and landscaping features would be expected to result in a subsequent improvement in community cohesion, with flow on effects for health and wellbeing.

Overall, the magnitude of impact upon community values and aspirations is deemed to be moderate positive. The sensitivity of the community to these matters is considered to be moderate. The overall socio-economic significance is a moderate positive impact.

## 7.5 Cultural heritage

The proposal is not expected to result in further impact on any items of Aboriginal or non-Aboriginal heritage or cultural values when it is operational, as earthworks and disturbance would be restricted to the construction phase (refer further to **Section 6.5.1**). As such a significance rating has not been prescribed to this impact for the operational phase.

At the impacted Aboriginal site, archaeological salvage and recording of cultural values would be carried out prior to the operational phase of the proposal.

Given that the proposal involves the expansion of an existing road corridor, rather than the construction of new infrastructure, the proposal in isolation is not expected to result in widespread change to the landscape that may alter the capacity for Aboriginal cultural sites and values to be appreciated by the broader community. However, consultation with Aboriginal stakeholders would inform ongoing design development so that Aboriginal culture and heritage is respected and integrated into the design where possible. This may include investigation of opportunities to incorporate Aboriginal heritage information and artwork interpretation into the design of the proposal, or to minimise impacts on valued items and landscaped features (refer further to **Section 8.0**).

## 7.6 Demographic changes

As with construction, operation of the proposal is not anticipated to result in a change to the demographic profile of the social locality in its own right. Rather, the safety and travel improvements associated with the proposal are expected to assist in facilitating and servicing the ongoing urban development and renewal that has and is continuing to occur in the social locality, which is having its own impacts on local demography.

On this basis the overall social significance of the proposal on the demographic profile of the social locality is considered to be negligible.

## 7.7 Business and economic impacts

The proposal would provide an increase in transport amenity and improve access and connectivity in the social locality, which would facilitate and encourage increased economic productivity. Higher economic productivity would be facilitated with customers and staff in the area able to enjoy reduced congestion and safer road networks. The upgraded road would also facilitate an improved freight network to allow for the more efficient movement of goods and services.

The proposal is expected to contribute to economic and employment growth in the surrounding area. It would provide reliable transport connection to Greater Sydney, which can potentially aid in the stimulation of current and future businesses in the area. Enhanced traffic conditions for customers and staff would have a positive impact on businesses in the social locality and ultimately encourage employment

connectivity. Improvements to accessibility allows for all residents within the social locality to independently travel with improved public and active transport options, which can further stimulate the local economy and create positive economic impacts.

The upgraded road would facilitate the safer movement of cars along the construction footprint due to the provision of the central median, intersections and turning lanes. This however would remove direct access to businesses and properties along Elizabeth Drive from the opposite direction of travel. This is likely to affect business's passing trade, of which 66 per cent of businesses said they were reliant upon. Vehicles would be able to continue to access these businesses through the use of existing and proposed provision of U-turn function, as described in **Section 7.3.1**.

Driveways of properties would be adjusted or reconfigured where they have been impacted by road widening as part of the proposal, including for the duck farm and any impacted other businesses identified along the length of the proposal. These adjustments would occur in consultation with the business prior to the completion of construction. This would consider the specific needs of the business, for example the types of vehicles that access driveways for deliveries.

While businesses that rely on passing trade may experience a decrease in turnover in the short term, Western Sydney is planned to become a new economic and residential hub as noted in **Section 4.1**. The anticipated change to the social locality, through the planned growth of the Western Parkland City and Western Sydney Aerotropolis, is anticipated to increase the number of visitors and residents as well as the level of economic activity in the area, which is expected to benefit businesses in the social locality and along Elizabeth Drive.

On this basis the magnitude of impact is considered to be low positive. The sensitivity of affected people is considered to be moderate. As a result, the overall social significance of the proposal on business and economics of the social locality is considered to have a moderate-low positive impact.

## 7.8 Cumulative impacts

The cumulative benefit of the proposal with other projects during operation is expected to result in a substantial net benefit for the community. Considered together with these other projects, the proposal would provide:

- Improved accessibility and connectivity within the social locality – the following projects would aid in the connectivity in the social locality: WSA, Sydney Metro Western Sydney Airport, M12 Motorway, M7 Motorway Widening and the Elizabeth Drive East Upgrade
- Improved access to employment areas – the proposal along with all the projects mentioned in **Section 6.8** would either in an area of future employment or provide a connection to the planned employment areas relating to the WSA and Western Sydney Aerotropolis
- An increase in economic activity, businesses and employment opportunities – all projects mentioned in **Section 6.8** are generally expected to increase the economic activity, businesses and employment opportunities of the social locality.

Potential adverse cumulative impacts of the proposal are:

- Air quality – there is potential for projects that intersect or lie in proximity to the proposal, such as the Elizabeth Drive East Upgrade and WSA, to result in cumulative impacts from combustion emissions associated with fuel use. The air quality impact assessment (**Appendix N** of the REF) concluded the following:
  - The WSA Environmental Impact Statement predicted potential increases in concentrations of CO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and to the north of the WSA site at locations within the proposal study area. In regards to potential cumulative impacts with the proposal, the difference between the proposal and 'do-nothing' scenarios would remain unchanged
  - Cumulative concentrations of maximum 1-hour NO<sub>2</sub> and annual average PM<sub>2.5</sub> were examined to determine whether cumulative effects would be significant. Results indicated that there would be very little change in concentrations when both the proposal and Elizabeth Drive Upgrade East are operating concurrently, compared with the two projects operating in isolation.



- Aboriginal cultural heritage – the proposal, and other major projects would contribute to a changed landscape which may alter the capacity for Aboriginal cultural sites and values to be appreciated by the broader community. However, given that the proposal involves the expansion of an existing road corridor, rather than the construction of new infrastructure, the proposal in isolation is not expected to result in widespread change to the landscape. Consultation with Aboriginal stakeholders would inform ongoing design development so that Aboriginal culture and heritage is respected and integrated into the design where possible.

Overall, the magnitude of impact is considered to be moderate. The sensitivity of the receptors affected by the impact are considered to be moderate. As such the overall significance of impact would be a moderate positive impact.

## 7.9 Summary of operational impacts

A summary of the socio-economic impacts for operation related impacts is included in **Table 7-3**.

**Table 7-3 Socio-economic impact significance – operation**

Impact	Magnitude	Sensitivity	Level of significance
<b>Amenity</b>			
Increase in accessibility and decrease in congestion	Moderate	Moderate	Moderate positive
Increase in noise from traffic	Low	Moderate	Moderate-low negative
Loss of visual amenity	Moderate	Low	Moderate-low negative
Increase in air quality	Low	Low	Low positive
<b>Access and connectivity</b>			
Property access	Low	Low	Low positive
Increase in road network efficiency and connectivity	Moderate	Moderate	Moderate positive
Parking availability	Negligible	Negligible	Negligible
Public transport facilities	Moderate	Low	Moderate-low positive
Active transport facilities	High	Low	Moderate positive
<b>Community identity, values, aspirations and cohesion</b>			
Alignment with community values and aspirations	Moderate	Moderate	Moderate positive
<b>Demographic changes</b>			
Change to demographics	Negligible	Negligible	Negligible
<b>Business and economy</b>			
Business and economic impacts	Low	Moderate	Moderate-low positive
<b>Cumulative impacts</b>			
Cumulative impacts	Moderate	Moderate	Moderate positive

## 8.0 Safeguards and management measures

### 8.1 Safeguard and management measures

This section describes safeguards and management measures to address the potential impacts of the proposal identified in this assessment. These measures would be incorporated into the detailed design, construction and/or operation stages of the proposal where relevant. The recommended safeguards and management measures are described in **Table 8-1**.

The management of other environmental impacts (such as noise and vibration, traffic and other amenity-related impacts) would contribute to the management of social impacts, due to their interrelated nature. Other mitigation measures identified in the REF which are relevant to the management of potential social impacts include:

- Section 6.1 – Noise
- Section 6.2 – Traffic and transport
- Section 6.6 – Property and land use
- Section 6.8 – Landscape character and visual amenity
- Section 6.12 – Air quality.

The safeguards outlined in **Table 8-1** identify consultation with stakeholders that will inform further design development. Any further community and stakeholder engagement feedback received during the REF exhibition period would be responded to in a submissions report to support the REF. Where relevant, this feedback would also inform detailed design and construction planning.

**Table 8-1 Safeguards and management measures**

Impact	Environmental safeguards / management measures	Responsibility	Timing
Community consultation	A Communication Plan (CP) will be prepared in accordance with the <i>Community Involvement and Communications Resource Manual</i> (RTA, 2008) and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CP will include (as a minimum): <ul style="list-style-type: none"> <li>• Mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions</li> <li>• Contact name and number for complaints</li> </ul>	Contractor	Detailed design, pre-construction and construction
Community consultation	Consultation with stakeholders and any further community and stakeholder engagement feedback received during the REF exhibition period will be responded to in a submissions report to support the REF. Where relevant, this feedback will also inform detailed design and construction planning	Transport	Detailed design
Aboriginal cultural heritage	Consultation with Aboriginal stakeholders is ongoing, and will inform design development so that Aboriginal culture and heritage is respected and integrated into the design where possible. This may include investigation of opportunities to incorporate Aboriginal heritage and artwork interpretation into the design of the proposal in consultation with Aboriginal stakeholders,	Transport	Detailed design

Impact	Environmental safeguards / management measures	Responsibility	Timing
Property acquisition	<p>Consultation will occur with directly affected landowners (i.e. where property acquisition or adjustments are proposed) during the REF exhibition period, throughout the development of the detailed design and during construction. Consultation will include:</p> <ul style="list-style-type: none"> <li>• Provision of information on relevant impacts during construction and operation</li> <li>• Identification of opportunities to avoid direct impacts to structures (such as sheds)</li> <li>• Consultation with affected landowners regarding proposed changes to the property (including adjustments and acquisition) in consultation with the relevant landowner/s.</li> </ul>	Transport	Detailed design and construction
Socio-economic impacts- Business impacts	<p>Specific consultation will be carried out with businesses potentially impacted during construction. Consultation will aim to identify potential construction impacts to individual businesses. Based on this consultation, specific feasible and reasonable measures to maintain business access, signage and parking, and address other potential impacts as they arise through the consultation process, will be identified and implemented</p>	Transport / Contractor	Detailed design and construction
Socio-economic impacts- Business impacts	<p>Regular engagement will be carried out with affected businesses regarding the progress of the proposal to allow businesses time to prepare for changed local conditions through the area</p>	Transport / Contractor	Construction
Socio-economic impacts- Business impacts	<p>Construction workers, materials and equipment hire will be sourced from the local area where feasible</p>	Contractor	Construction

## 9.0 Conclusion

This SEIA has been prepared to support the REF for the proposal. Specifically, this report has been prepared to assess the potential impacts of construction and operation of the proposal and to identify appropriate safeguards and management measures to address the socio-economic impacts identified.

Potential social issues assessed in the SEIA include: access arrangements, traffic during construction and operation, visual impact, noise levels, air quality and partial land acquisition impacting residences and commercial properties. Economic impacts to businesses during construction and operation were also considered as well as benefits to the freight industry as an enabler of economic activity once the proposal is operational.

During construction, the proposal would stimulate broader economic benefits through job generation and construction multipliers such as expenditure on services and supplies. Residents, social infrastructure users, businesses and landowners would experience a degree of disruption and other temporary negative impacts.

While partial acquisition of properties would be required, and temporary amenity impacts would occur during construction the overall socio-economic significance on the community is considered to be moderate-low adverse.

Once operational, the proposal is likely to result in an overall moderate-low positive impact to the social locality and broader region due to enhanced network capacity and connectivity. The proposal would particularly support the development and growth of Western Sydney and its connectivity to Greater Sydney. The proposal would support and act as a catalyst for economic activity within the social locality, which would have positive flow on effects for business activity and employment.

Further, the proposal would generally improve local amenity through reductions on congestion, with a flow on effect for air quality impacts from traffic. Despite this, some receivers may experience a slight reduction in the amenity due to alterations in views of new transport infrastructure, minor permanent access changes and increased noise levels. The provision of infrastructure to support public and active transport would improve access, connectivity and the health and wellbeing of a broad cross section of local residents and workers.

Transport would implement safeguards and management measures to avoid or minimise potential impacts as a result of the proposal. Ongoing consultation with affected property owners, businesses and communities would be important in minimising potential socio-economic impact during construction and operation of the proposal. The implementation of additional environmental management measures as outlined in **Chapter 7** (Environmental Management) of the REF would also mitigate potential socio-economic impacts.

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# Appendix A

Socio-economic data  
tables



**Table 1 Key demographic characteristics of the local and regional study area (2021 Census)**

Key Demographic	Austral Greendale	Badgerys Creek	Horsley Park Kemps Creek	Mulgoa Luddenham Orchard Hills SA2	NSW
Total Resident Population (no. persons)	12,533	25	4,344	12,040	8,072,163
Median age	34	46	44	35	39
Population aged <15 (no. persons)	2,722	2	693	2,822	1,470,001
%^	21.7%	8.0%	16.0%	23.4%	18.2%
Population aged 15+ (no. persons)	9,814	23	3,651	9,212	6,602,145
%^	78.3%	92.0%	84.0%	76.5%	81.8%
Population aged 65+ (no. persons)	1,701	4	932	1,435	1,4224,146
%^	13.6%	16.0%	21.5%	11.9%	17.6%
Unemployment rate (%)	4.2%	N/A	2.0%	2.2%	4.9%
Indigenous population (no. persons)	221	0	65	327	278,043
%^	1.8%	0.0%	1.5%	2.7%	3.4%
Speaks a language other than English at home (%)	45.2%	24.0%	44.3%	21.5%	32.4%

^percentage of total resident population for respective Census year

\*N/A denotes information not available for respective Census year

Table 2 Key Core activity need for assistance (2021 Census)

Key Demographic	Austral Greendale	Badgerys Creek	Horsley Park Kemp's Creek	Mulgoa Luddenham Orchard Hills SA2	NSW
Has need for assistance	604	N/A	304	431	464,712
%^	4.8%	N/A	7.0%	3.6%	5.8%
Does not have need for assistance	10,886	N/A	3,774	11,196	7,128,700
%^	86.9%	N/A	86.9%	93.0%	88.3%
Need for assistance not stated	1,048	N/A	259	404	478,750
%^	8.4%	N/A	6.0%	3.4%	5.9%

\*N/A denotes information not available for respective Census year

^percentage of key demographic of the row above

Table 3 Residential dwelling characteristics (2021 Census)

Key Demographic	Austral Greendale	Badgerys Creek	Horsley Park Kemp's Creek	Mulgoa Luddenham Orchard Hills SA2	NSW
Separate House	3,307	7	1,139	3,300	1,902,734
^%	86.3%	77.8%	89.6%	88.6%	59.5%
Semi-detached, townhouse or terrace house	113	0	26	89	34,582
^%	2.9%	0.0%	2.0%	2.4%	10.6%
Flat or apartment	67	0	22	124	630,030
^%	1.7%	0.0%	1.7%	3.3%	19.7%
Other dwelling (caravan, cabin, tent, flat attached to a shop)	3	0	4	33	19,374
^%	0.1%	0.0%	0.3%	0.9%	0.6%
Dwelling structure not stated	85	2	3	11	7,754
^%	2.2%	22.2%	0.2%	0.3%	0.2%
Total occupied private dwellings	11,653	9	1,183	3,553	2,900,524
^%	93.2%	100.0%	93.1%	95.4%	90.6%
Unoccupied private dwellings	253	0	84	172	299,524
^%	6.6%	0.0%	6.6%	4.6%	9.4%
<b>Total private dwellings</b>	<b>3,834</b>	<b>9</b>	<b>1,271</b>	<b>3,723</b>	<b>3,199,988</b>

^percentage of total private dwellings of the residential dwelling characteristic in the row above

**Table 4 Home ownership and household structure (2021 Census)**

Home ownership	Austral Greendale	Badgerys Creek	Horsley Park Kemps Creek	Mulgoa Luddenham Orchard Hills SA2	NSW
Owned outright	29.5%	55.6%	51.7%	30.8%	31.5%
Owned with a mortgage	37.6%	0.0%	38.7%	48.2%	32.5%
Rented	27.4%	33.3%	14.8%	18.9%	32.6%
Other tenure type	2.9%	0.0%	2.8%	1.0%	1.9%
Tenure type not stated	2.5%	22.3%	2.0%	1.0%	1.5%

Note: percentage of home ownership is of the total private dwellings

**Table 5 Labour Force Characteristics and median household incomes (2021 Census)**

Key Demographic	Austral Greendale	Badgerys Creek	Horsley Park Kemps Creek	Mulgoa Luddenham Orchard Hills SA2	NSW
Total Labour Force	5,464	11	1,898	3,042	3,874,012
Employed full time	2,784	8	933	1,386	2,136,610
^%	51.0%	72.7%	49.2%	45.6%	55.2%
Employed part time	1,416	N/A	571	1,183	1,151,660
^%	25.9%	N/A	30.1%	38.9%	29.7%
Employed away from work	1,039	N/A	361	406	395,888
^%	19.0%	N/A	19.0%	13.3%	10.2%
Unemployed	230	N/A	36	70	189,852
^%	4.2%	N/A	1.9%	2.3%	4.9%
Median weekly household income	\$2,047	\$2,083	\$2,372	\$2,699	\$1,829

^percentage of labour force characteristic in the row above

\*N/A denotes information not available for respective Census year

Table 6 Employment by industry (2021 Census)

Industry	Austral Greendale		Badgerys Creek		Horsley Park Kemps Creek		Mulgoa Luddenham Orchard Hills SA2		NSW	
	No. persons	%	No. persons	%	No. persons	%	No. persons	%	No. persons	%
Agriculture, Forestry and Fishing	266	5.1%	6	42.9%	89	4.8%	118	1.9%	74,728	2.0%
Mining	13	0.2%	0	0.0%	5	0.3%	25	0.4%	35,406	1.0%
Manufacturing	343	6.5%	0	0.0%	153	8.2%	426	6.8%	201,654	5.5%
Electricity, Gas, Water and Waste Services	50	1.0%	0	0.0%	20	1.1%	96	1.5%	35,584	1.0%
Construction	702	13.4%	6	42.9%	362	19.5%	1,013	16.2%	315,520	8.6%
Wholesale Trade	187	3.6%	0	0.0%	73	3.9%	203	3.3%	103,466	2.8%
Retail Trade	440	8.4%	0	0.0%	150	8.1%	539	8.6%	331,486	9.0%
Accommodation and Food Services	182	3.5%	0	0.0%	61	3.3%	282	4.5%	227,466	6.2%
Transport, Postal and Warehousing	422	8.1%	0	0.0%	115	6.2%	411	6.6%	169,608	4.6%
Information Media and Telecommunications	41	0.8%	0	0.0%	19	1.0%	53	0.8%	68,068	1.8%
Financial and Insurance Services	195	3.7%	0	0.0%	42	2.3%	222	3.6%	193,679	5.3%
Rental, Hiring and Real Estate Services	121	2.3%	0	0.0%	42	2.3%	142	2.3%	62,633	1.7%
Professional, Scientific and Technical Services	277	5.3%	0	0.0%	132	7.1%	314	5.0%	326,595	8.9%
Administrative and Support Services	126	2.4%	0	0.0%	57	3.1%	166	2.7%	117,988	3.2%
Public Administration and Safety	230	4.4%	0	0.0%	56	3.0%	397	6.4%	222,909	6.1%
Education and Training	412	7.9%	0	0.0%	118	6.4%	537	8.6%	322,236	8.7%



Industry	Austral Greendale		Badgerys Creek		Horsley Park Kemps Creek		Mulgoa Luddenham Orchard Hills SA2		NSW	
Health Care and Social Assistance	618	11.8%	0	0.0%	140	7.5%	652	10.4%	529,176	14.4%
Arts and Recreation Services	49	0.9%	0	0.0%	18	1.0%	74	1.2%	51,789	1.4%
Other Services	234	4.5%	0	0.0%	105	5.7%	275	4.4%	125,380	3.4%
Inadequately described / Not stated	338	6.5%	2	14.3	106	5.7%	299	4.8%	168,787	4.6%
<b>Total</b>	<b>5,238</b>	<b>-</b>	<b>14</b>	<b>-</b>	<b>1,857</b>	<b>-</b>	<b>6,245</b>	<b>-</b>	<b>3,684,158</b>	<b>-</b>

Percentages may not add to 100% due to rounding

# Appendix B

Socio-economic survey  
results

# Socio-economic Survey Results

## Appendix B

09-Mar-2023  
Socio-economic Impact Assessment Elizabeth Drive Upgrade

# Socio-economic Survey Results

## Appendix B

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## Quality Information

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## 1.0 Overview

This appendix summarises the results of community consultation undertaken for the Socio-economic Impact Assessment (SEIA) for the proposal. A socio-economic specific survey was carried out between 2 August 2022 and 10 August 2022 and encompassed the entire Elizabeth Drive upgrade (Elizabeth Drive West and Elizabeth Drive East).

### 1.1 Residential survey

Residential surveys were undertaken to better understand the potential social impacts of the proposal on community members. The key aims of these surveys were to:

- Identify features of the community, the social locality and/or landscape which people value
- Understand the way of life of the community, what a typical day includes, what community facilities are used, and modes of transport taken within the local area
- Seek input from the community on how the construction and operation of the proposal might affect their lives (both positively and negatively)
- Seek input on how the proposal could appropriately manage impacts.

Interview questions also sought to obtain additional location-specific demographic detail.

### 1.2 Business survey

Business survey questions were developed to understand businesses' reliance on Elizabeth Drive, their customer base, and their perception as to how their business may be affected (both positively and negatively) by the proposal.

The operation of local businesses is a key element of sustaining people's livelihoods and way of life, including their capacity to sustain themselves through employment and businesses.

### 1.3 Survey approach

The survey had three sections for respondents to answer:

- Section 1 – Business survey
- Section 2 – Residential survey
- Section 3 – Demographic questions (optional).

The survey was sent out via a digital link to stakeholders who had signed up for Elizabeth Drive project updates and letterbox drops to those living along the alignment between The Northern Road and Cecil Road.

The surveys were emailed out to 171 stakeholders on 2 August 2022 and surveys were dropped in 175 properties along the Elizabeth Drive alignment on 3 August 2022. Respondents were able to fill in the survey online or post it back to Transport for NSW (Transport) until the survey closed on 10 August 2022.

A total of 37 responses were received: 28 stakeholders responses online and nine letters were received by transport.

### 1.4 Survey analysis

Of the 37 participants, 14 responded to both the business and residential survey, six responded only to the business survey and 17 responded only to the residential survey. A total of 23 full responses were given for the demographic questions with 11 partial responses and three with no response to the demographic questions.

It should be noted that blank answers have not been considered further in the survey analysis.

## 2.0 Business survey results

### 2.1 Business type

Businesses were asked: ‘What is your business type?’

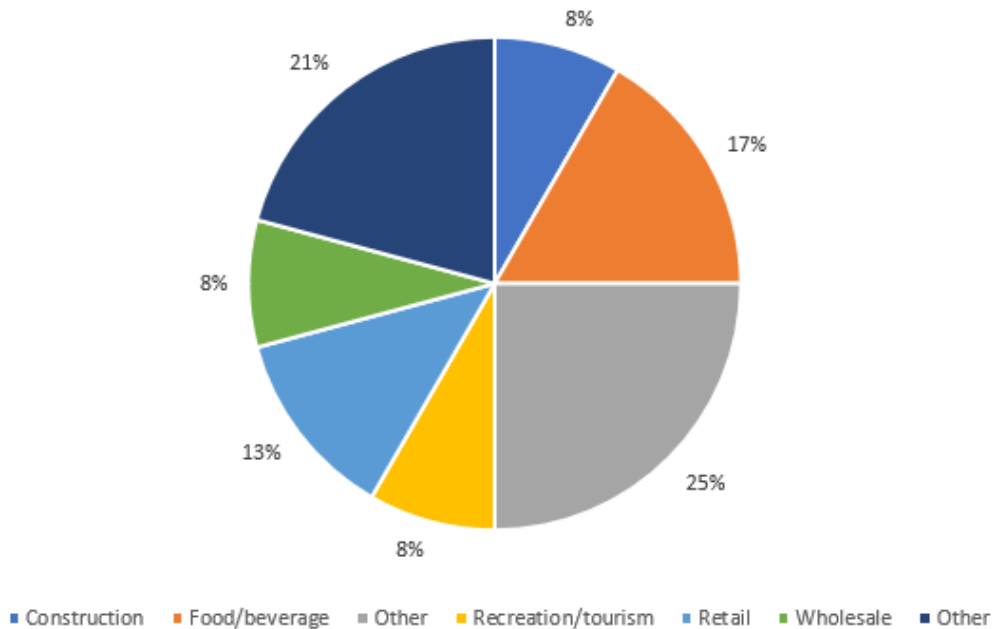


Figure 2-1 Business type

### 2.2 Length of operation

Businesses were asked: ‘How long has your business operated in this location for?’

The majority of businesses (78 per cent) have operated for more than 10 years in the surveyed location. No business had operated for less than 12 months in the surveyed location.

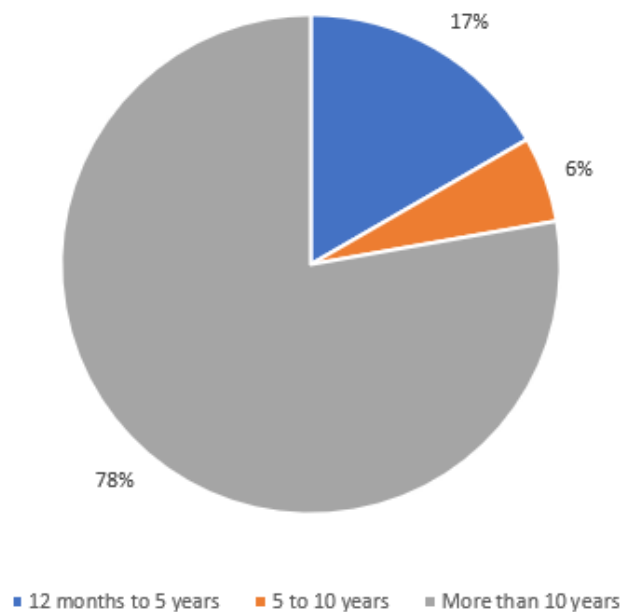


Figure 2-2 Length of operation

### 2.3 Trading hours

Businesses were asked: ‘What are your general trading or operating hours?’

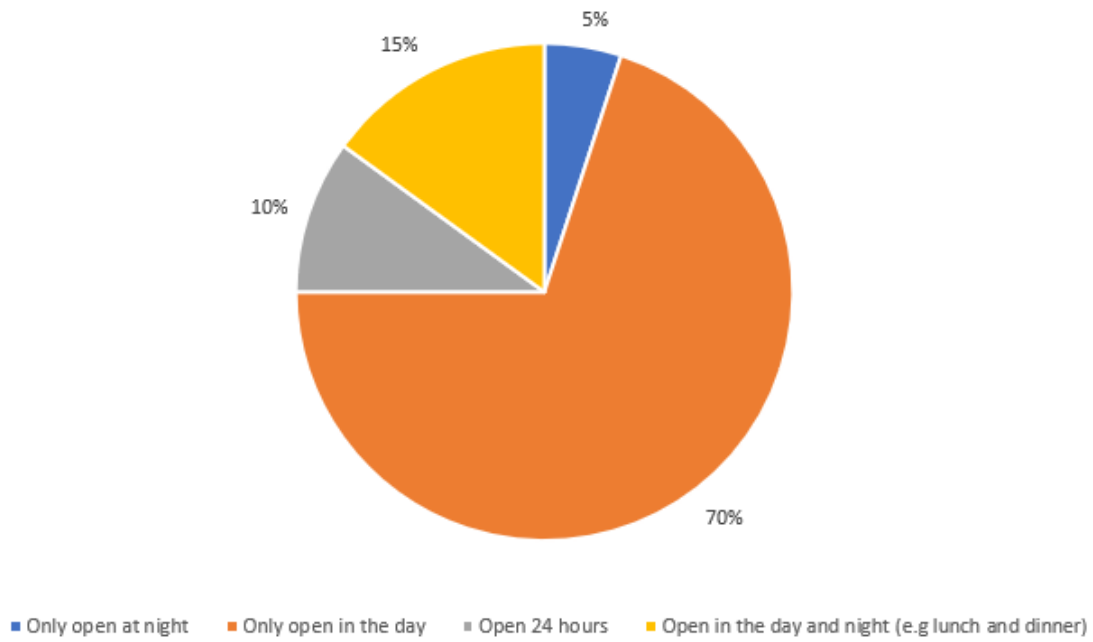


Figure 2-3 Business trading hours

### 2.4 Trading days

Businesses were asked: ‘What are your general trading or operating days?’

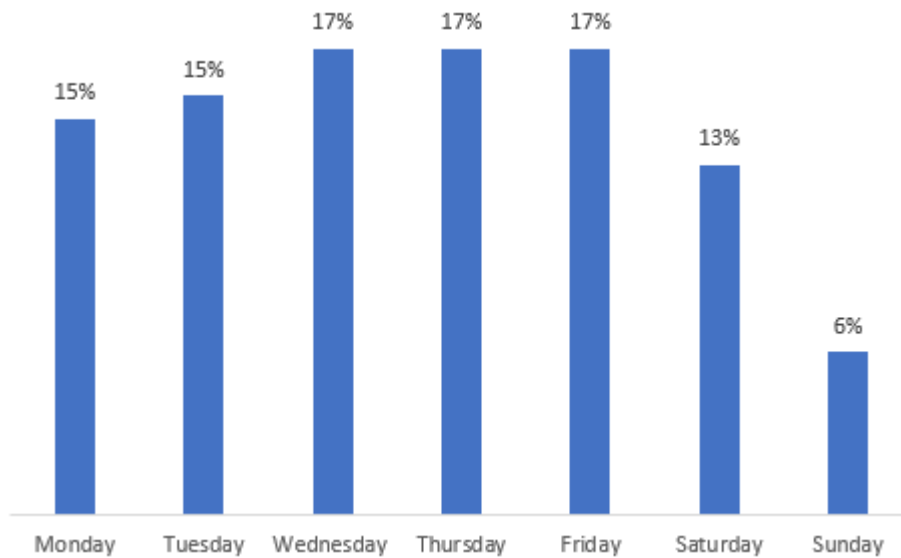


Figure 2-4 Business trading days

## 2.5 Customer base

Businesses were asked: ‘Broadly, where do most of your customers come from?’

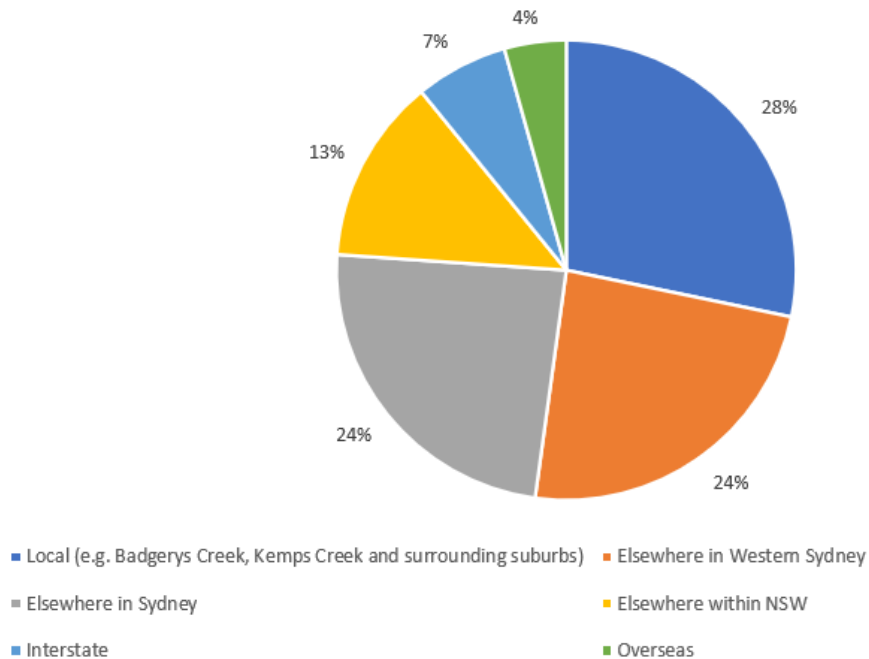


Figure 2-5 Customer base

## 2.6 Business variations

Businesses were asked: ‘Does your level of business vary throughout the year?’

- A total of 67 per cent of respondents said that there was no variation in business throughout the year
- A total of 28 per cent of businesses indicated variation was experienced throughout the year. When asked, businesses responded that this was due to the change in seasons. The businesses who experience variation were the following business types: agriculture, recreation/tourism and commercial
- A total of six per cent of businesses were unsure due to the impact of Covid-19.

## 2.7 Passing trade

Businesses were asked: ‘How dependent is your business on passing trade (customers who visit only because they are passing through)?’

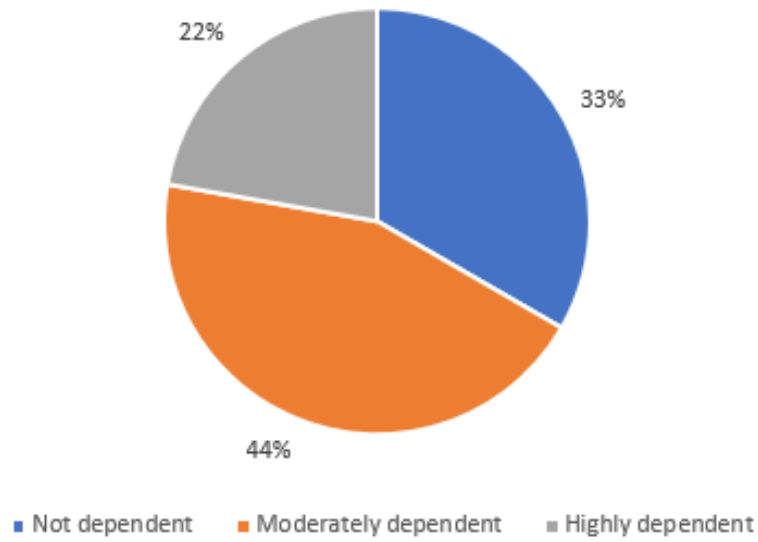


Figure 2-6 Passing trade dependency

## 2.8 Business promotion

Businesses were asked: ‘What are the main ways you promote your business?’

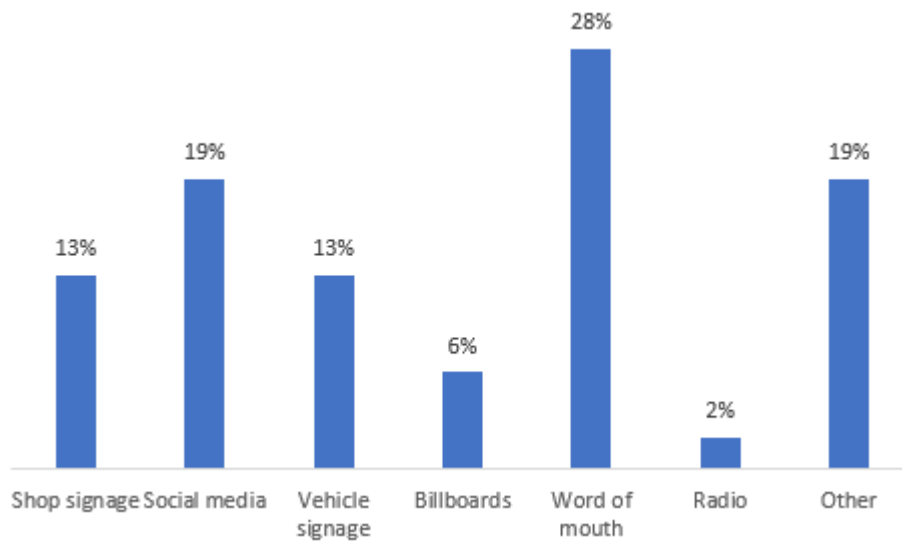


Figure 2-7 Business promotion

## 2.9 Construction impacts

Businesses were asked if they thought the proposal would have impacts on their business during construction and how:

- A total of 56 per cent of respondents thought that their business would be impacted by construction of the proposal
- A total of 31 per cent of respondents did not think that their business would be impacted by construction of the proposal
- A total of 13 per cent were unsure if their business would be impacted by construction of the proposal.

This question was asked as an open-ended question to capture a broad range of responses. These responses were then categorised into themes, which included:

- **Access:** for businesses and customers
- **Traffic:** congestions and delays due to construction activities
- **Noise:** from construction works, machinery and traffic
- **Air quality:** dust and emissions from construction works and machinery
- **Other:** including light pollution, cumulative impacts, drainage and land acquisition.

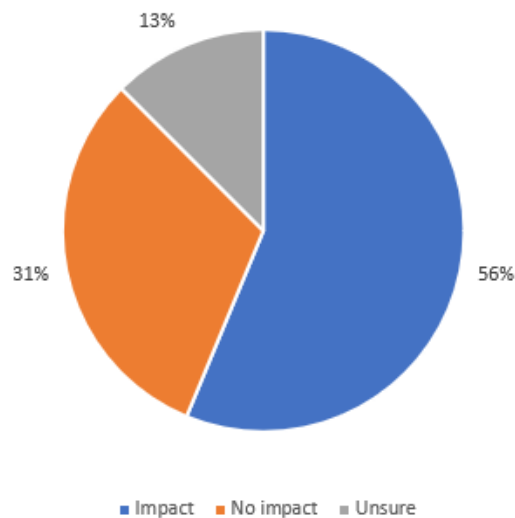


Figure 2-8 Business construction impacts

## 2.10 Operation impacts

Businesses were asked if they thought the proposal would have an impact on their business during operation and how:

- A total of 69 per cent of respondents thought that their business would be impacted by operation of the proposal
- A total of 31 per cent of respondents thought that their business would not be impacted by operation of the proposal

This question was asked as an open-ended question to capture a broad range of responses. These responses were then categorised into themes, which included:

- **Access impacts:** change in the road alignment and access arrangements to their properties may affect their business
- **Land acquisition:** may impact their business.

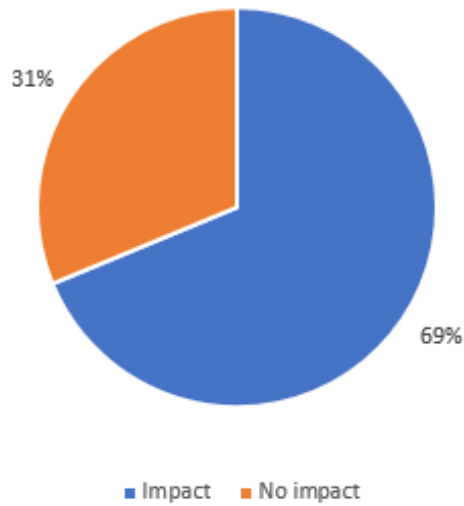


Figure 2-9 Business operation impacts

### 2.11 Transport business promotion

Businesses were asked: ‘What strategies should Transport consider to encourage people to stop at your business?’

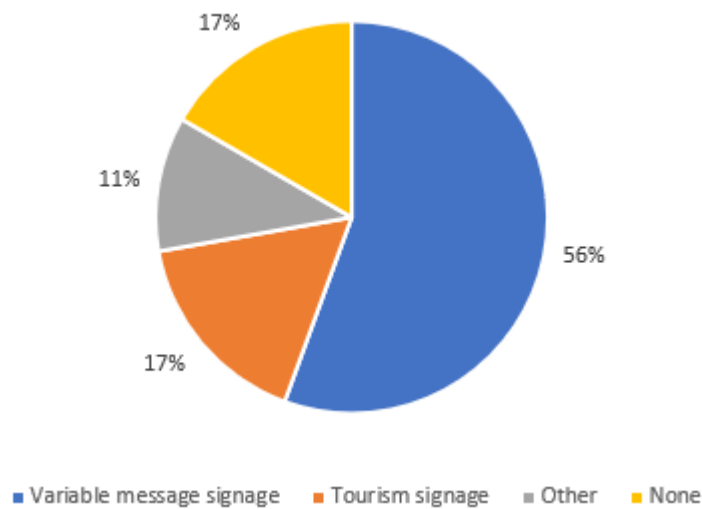


Figure 2-10 Transport business promotion

### 2.12 Further comments

Businesses were able to provide other comments for consideration. Responses were categorised into themes which reflect the most common responses. These included:

- **Business operation:** 30 per cent of respondents expressed concern for the ability of their business to operate during construction and operation
- **Consultation:** 30 per cent of respondents have requested further consultation during detailed design and construction
- **Road alignment:** 10 per cent of respondents have requested road alignments for ease of access to their business
- **Support:** 30 per cent of respondents are in support of the proposal.



### 3.0 Residential survey results

#### 3.1 Proposal awareness

Respondents were asked: 'Are you aware of the Elizabeth Drive Upgrade?'

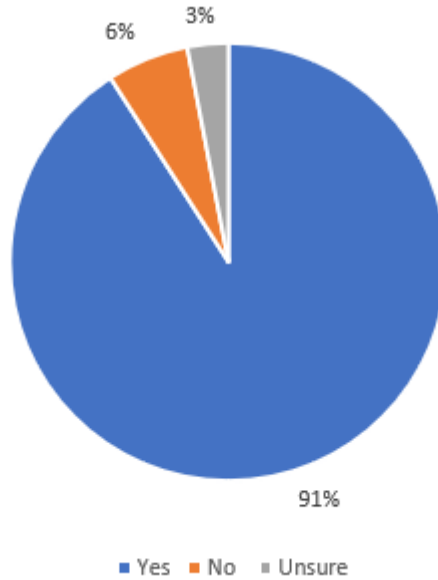


Figure 3-1 Respondents Proposal awareness

#### 3.2 Use of Elizabeth Drive

##### 3.2.1 Respondents who use Elizabeth Drive

Respondents were asked: 'Do you use the Elizabeth Drive?'

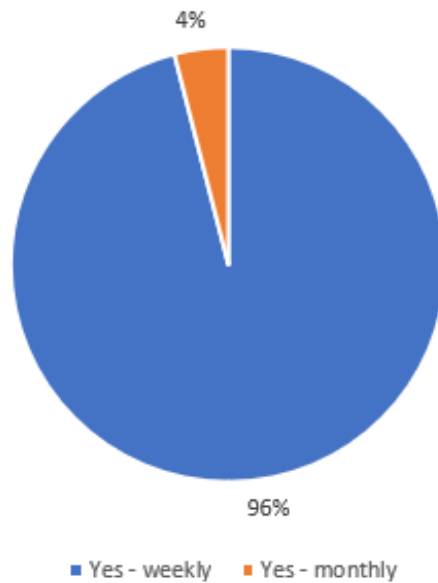


Figure 3-2 Respondents use of Elizabeth Drive

### 3.2.2 Why respondents use the Elizabeth Drive

Respondents were asked: 'How do you use / for what purpose do you use the Elizabeth Drive?'

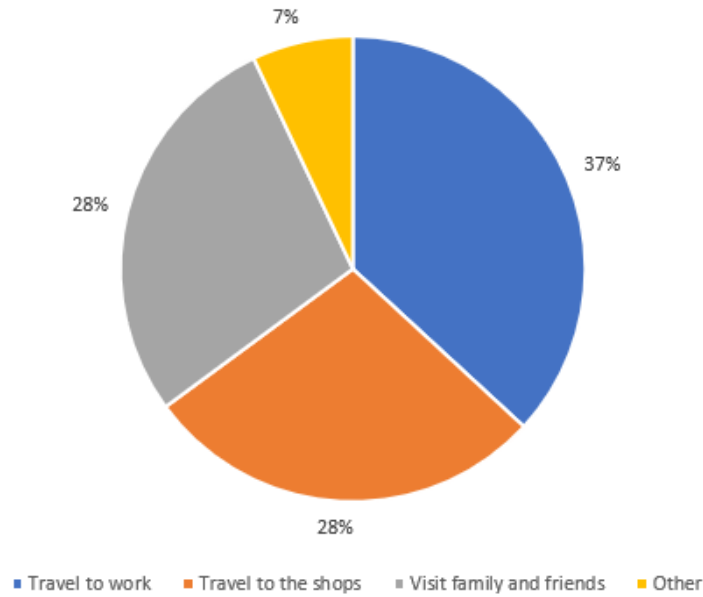


Figure 3-3 Purpose for using Elizabeth Drive

### 3.3 Typical weekday activities

Respondents were asked: 'What does a typical weekday in your area include for you? Select all that apply'

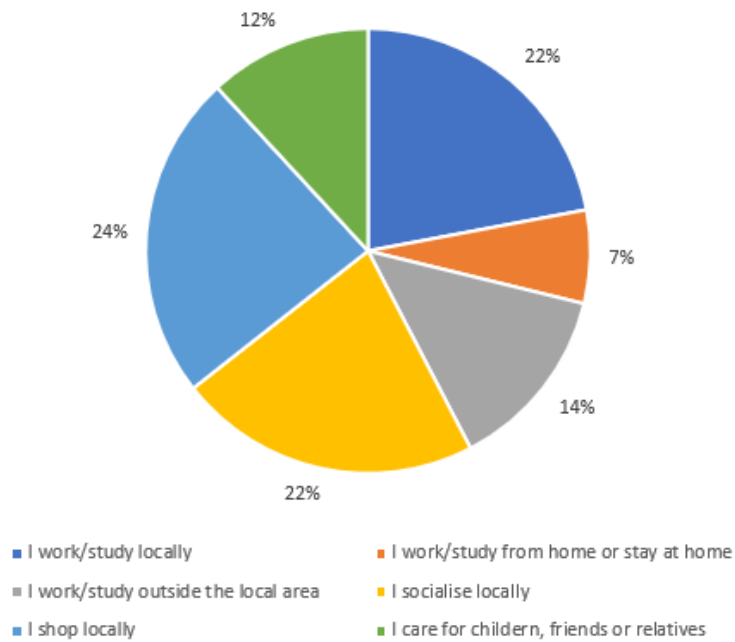


Figure 3-4 Typical weekday activities

### 3.4 Mode of transport

Respondents were asked: ‘What mode of transport do you most commonly use during your typical weekday?’

- A total of 96 per cent of respondents used a private vehicle
- A total of four per cent of respondents cycled.

### 3.5 Property as a source of income

Respondents were asked: ‘Do you generate an income from your property? If so, to what degree are you financially dependent on that income?’

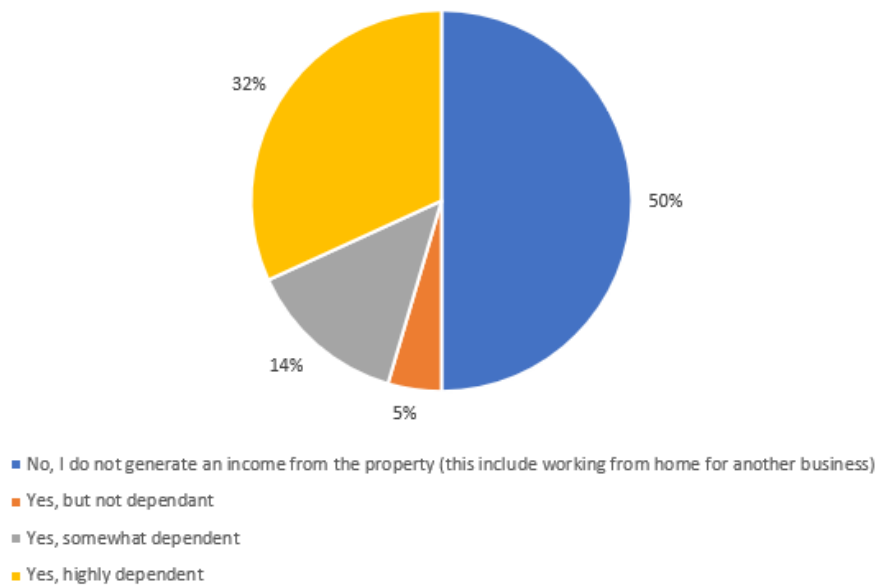


Figure 3-5 Property as a source of income

### 3.6 Community values

Respondents were asked: 'What do you value about your community?'

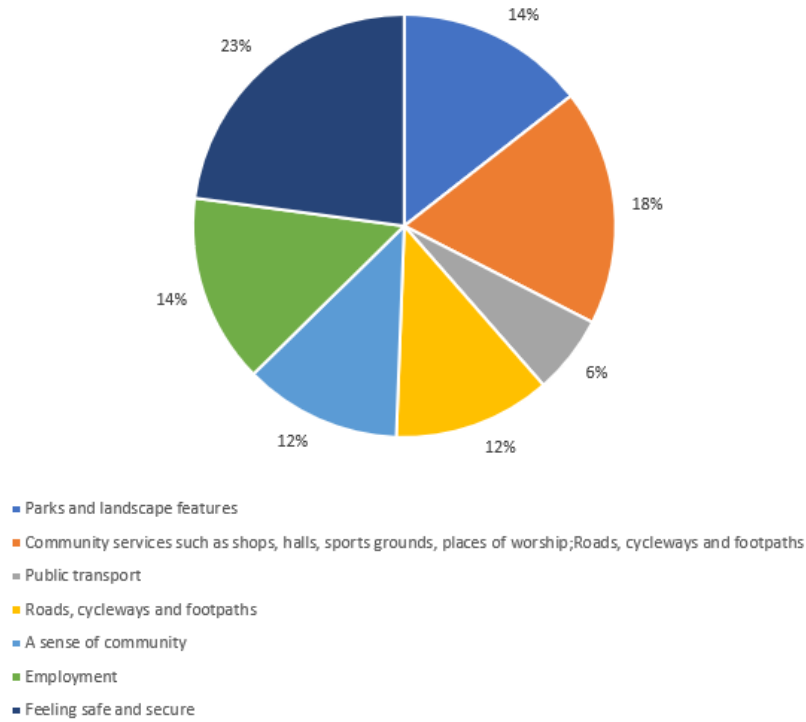


Figure 3-6 Community values

### 3.7 Community improvement

Respondents were asked: 'What would you like to be improved or fixed in your community?'

Those who responded with 'other' mentioned unemployment, housing availability, local stores and road safety.

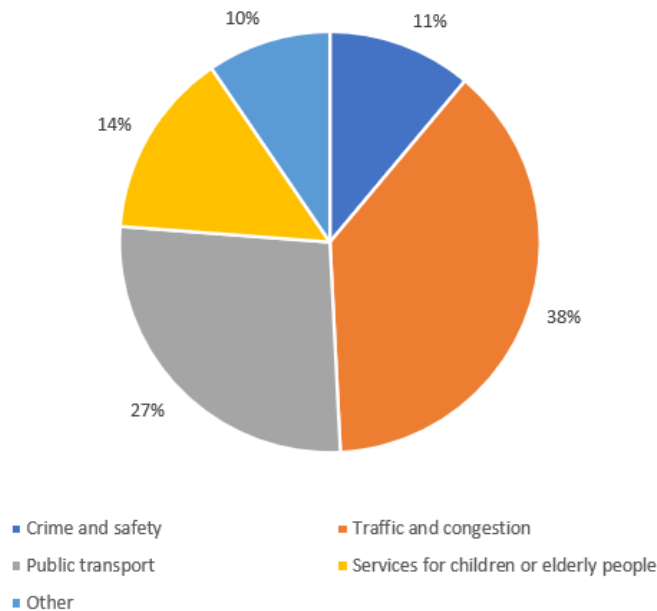


Figure 3-7 Community improvement

## 3.8 Construction

### 3.8.1 Individual

Respondents were asked: *'Thinking of your own day-to-day life, how do you think the construction of the project may affect you?'*

- A total of 87 per cent of respondents thought that they would be impacted by construction of the Proposal
- A total of 13 per cent of respondents were unsure or did not think that the construction of the Proposal would impact them.

No respondents thought that there would be any benefits of the proposal during construction.

This question was asked as an open-ended question to capture a broad range of responses. These responses were then categorised into themes, which included:

- **Traffic and access:** congestion, traffic delays and access to their properties
- **Noise:** from construction works, machinery and traffic
- **Safety:** accidents from increased traffic.

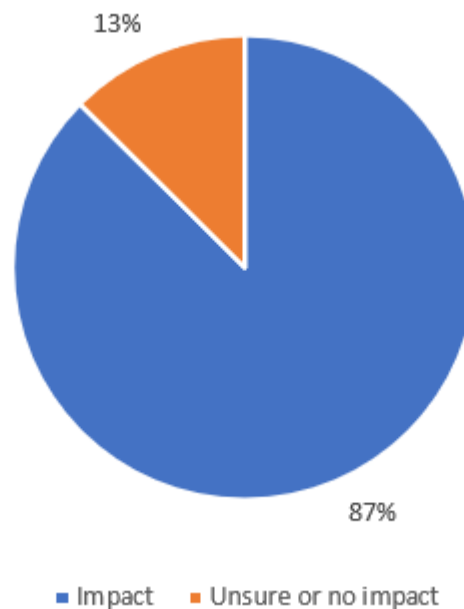


Figure 3-8 Impact to individuals during construction

### 3.8.2 Community

Respondents were asked: *'Thinking of your community more broadly, how do you think the construction of the project may affect the community?'*

- A total of 88 per cent of respondents thought that the community would be impacted by construction of the proposal
- A total of nine per cent of respondents thought that the community would benefit from the construction of the proposal
- A total of three per cent of respondents were unsure or did not think that the construction of the proposal would impact the community.

This question was asked as an open-ended question to capture a broad range of responses. These responses were then categorised into themes, which included:

- **Traffic and access:** congestion, traffic delays and access to their properties

- **Noise:** from construction works, machinery and traffic
- **Air quality:** dust and emissions from construction works and machinery
- **Benefit:** to the wider community and businesses
- **Safety:** potential accidents
- **Other:** including loss of sense of community, business impacts, local road damage from detoured heavy vehicles, unsure, change in community cohesion, inconvenience and concern for local wildlife.

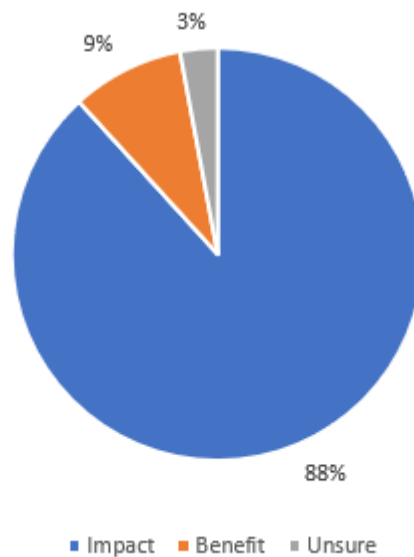


Figure 3-9 Impacts to the community during construction

### 3.8.3 Management measures

Respondents were asked: 'Where should we concentrate our efforts to reduce impact to you or your community during construction?'

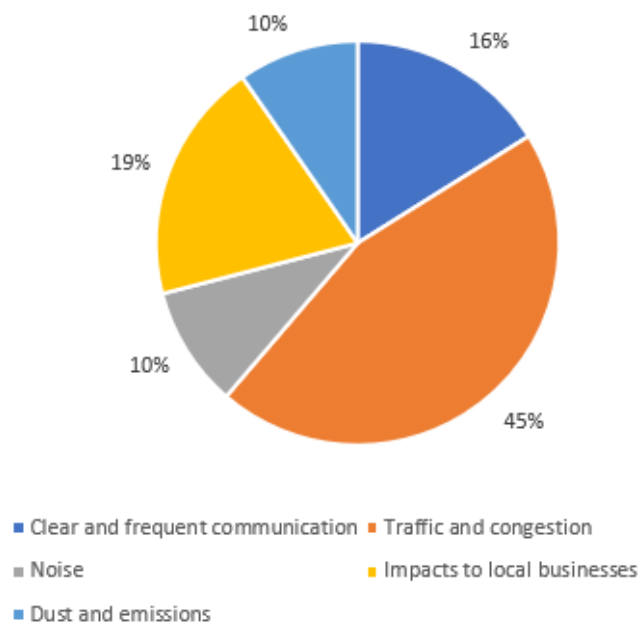


Figure 3-10 Construction management measures

## 3.9 Operation

### 3.9.1 Individual

Respondents were asked: *'Thinking of your own day-to-day life, how do you think the completed project may affect you?'*

- A total of 55 per cent of respondents thought that they would be impacted by operation of the proposal
- A total of 27 per cent of respondents thought that they would benefit from the operation of the proposal
- A total of 18 per cent of respondents were unsure or did not think that the operation of the proposal would affect them.

This question was asked as an open-ended question to capture a broad range of responses. These responses were then categorised into themes, which included:

- **Improve traffic and access:** improved travel time, access and decreased congestion
- **Impact access:** change in access arrangements, loss of land
- **Loss of amenity:** increase in traffic and noise.

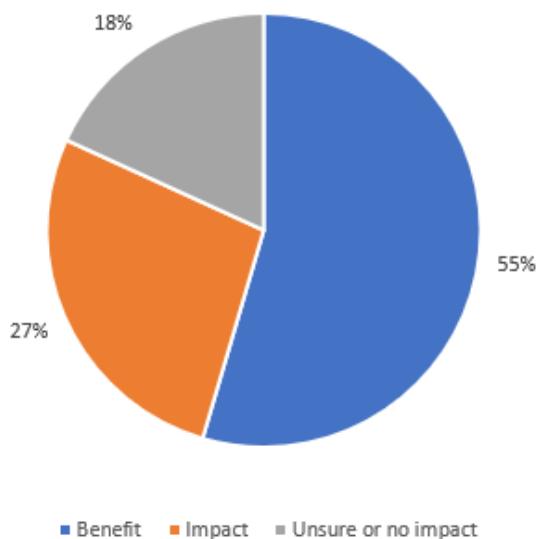


Figure 3-11 Impacts to individuals during operation

### 3.9.2 Community

Respondents were asked: *'Considering your community more broadly, how do you think the completed project may affect your community?'*

- A total of 68 per cent of respondents thought that the community would be impacted by operation of the Proposal
- A total of 23 per cent of respondents thought that the community would benefit from the operation of the Proposal
- A total of nine per cent of respondents were unsure or did not think that the operation of the Proposal would affect their community.

This question was asked as an open-ended question to capture a broad range of responses. These responses were then categorised into themes, which included:

- **Improve traffic and access:** improved travel time, access and decreased congestion



- **Impact access:** change in access arrangements, loss of land
- **Loss of amenity:** increase in traffic and noise.

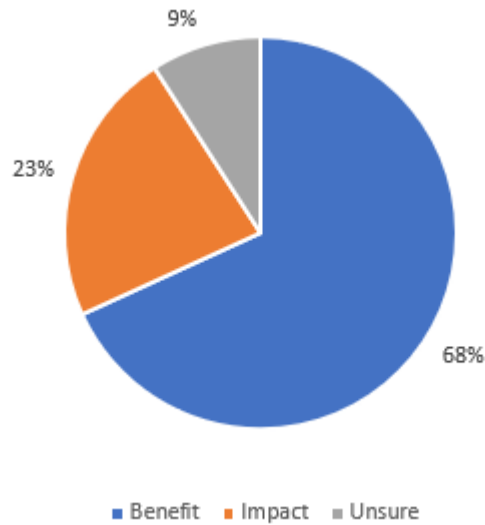


Figure 3-12 Impacts to the community during operation

### 3.9.3 Management measures

Respondents were asked: ‘Which of the following actions to manage impacts would be the most important to your business during construction?’

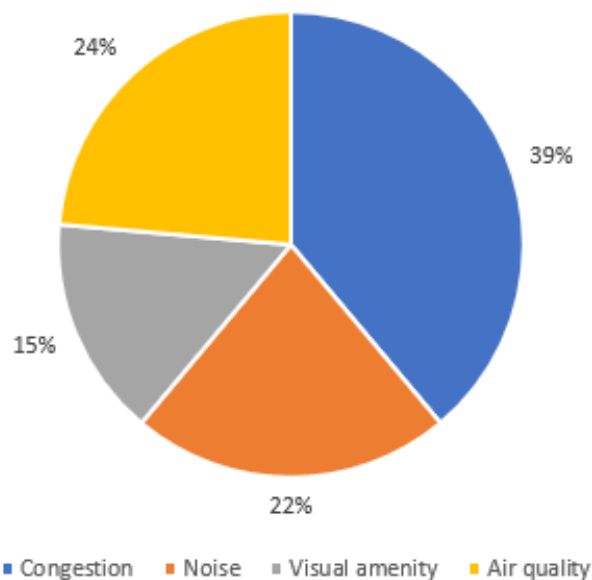


Figure 3-13 Operation management measures

### 3.10 Other benefits or issues

Respondents were asked: ‘Do you think the project will bring any other benefits or issues?’

- A total of 88 per cent of respondents thought that the proposal would bring benefits including:
  - Ease congestion
  - Provide easy access to the WSA

- Job opportunities
- Better for the community and environment
- Increase tourism
- A total of 13 per cent of respondents thought that the proposal would bring other issues including:
  - Increased amount of trucks using Elizabeth Drive
  - Make the area more urbanised and less desirable to live.

### 3.11 Comments

Residents were able to provide other comments for consideration. Responses were categorised into themes which reflect the most common responses. These included:

- Support for the proposal
- Request for further community consultation
- Request for work to be undertaken outside of peak hours
- Request for access to be maintained along Elizabeth Drive
- Comment that the sense of place would change due to the proposal
- Concern for the safety of motorists during construction.

## 4.0 Demographic survey results

### 4.1 Age of respondents

Respondents were asked: 'What is your age range?'

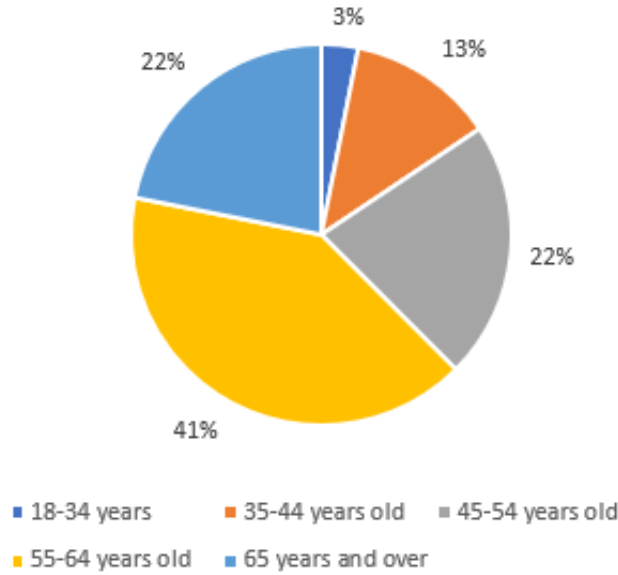


Figure 4-1 Age of respondents

### 4.2 Gender identity

Respondents were asked: 'Gender: How do you identify?'

Options given for this question were: 'male', 'female', 'non-binary', 'prefer not to say' and 'prefer to self-describe'. Only the 'male', 'female' and 'prefer not to say' options were selected.

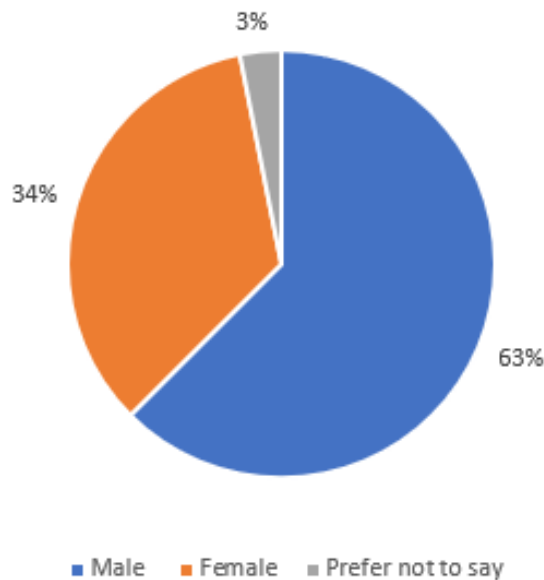


Figure 4-2 Gender identity

### 4.3 Aboriginal and/or Torres Strait Islander

Respondents were asked: *'Do you identify as Aboriginal and/or Torres Strait Islander?'*

No respondents identified as Aboriginal and/or Torres Strait Islander.

### 4.4 Primary language spoken at home

Respondents were asked: *'What is the primary language spoken in your home?'*

All respondents indicated that English was the primary language spoken at home.

### 4.5 Exclusion and disadvantage

Respondents were asked: *'Do you feel you are part of a group that experiences a degree of disadvantage or exclusion in your local area or more broadly?'*

One respondent indicated that they were a part of a group that experiences a degree of disadvantage or exclusion.

Respondents were also asked: *'If you answered 'yes' to the question above, how do you think the Proposal could consider the needs of members of your group?'*

The respondent said that they did not have access to public transport and that they could only get around in a private car.

### 4.6 Household structure

Respondents were asked: *'How would you best describe your household?'*

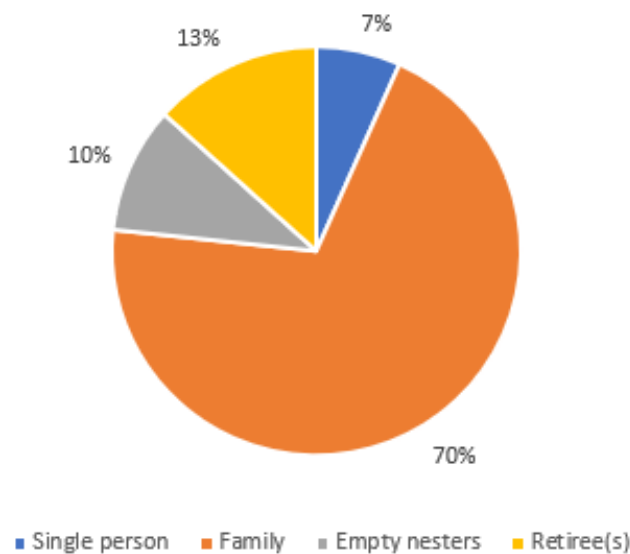


Figure 4-3 Household structure

### 4.7 Primary residence

Respondents were asked: *'Is this property your primary place of residence?'*

- A total of 76 per cent of respondents indicated that the property was their primary place of residence
- A total of 24 per cent of respondents indicated that the property was not their primary place of residence.

### 4.8 Property occupants

Respondents were asked: ‘How many people live on the property?’

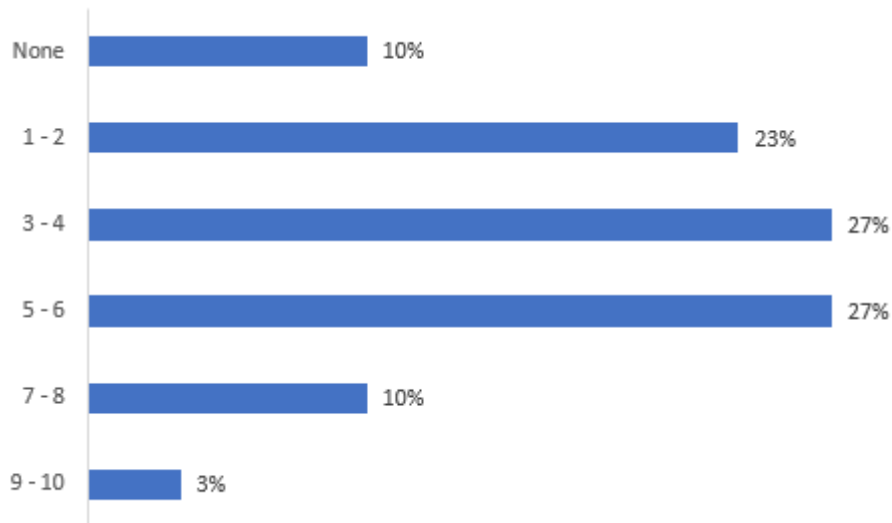


Figure 4-4 Number of people who live on the property

### 4.9 Children

Respondents were asked: ‘Do any children live on the property?’

- A total of 50 per cent of respondents indicated that no children live on the property
- A total of 50 per cent of respondents indicated that children live on the property.

### 4.10 Years lived in property

Respondents were asked: ‘How many years have you lived here? If you do not live here, how long have you owned the property?’

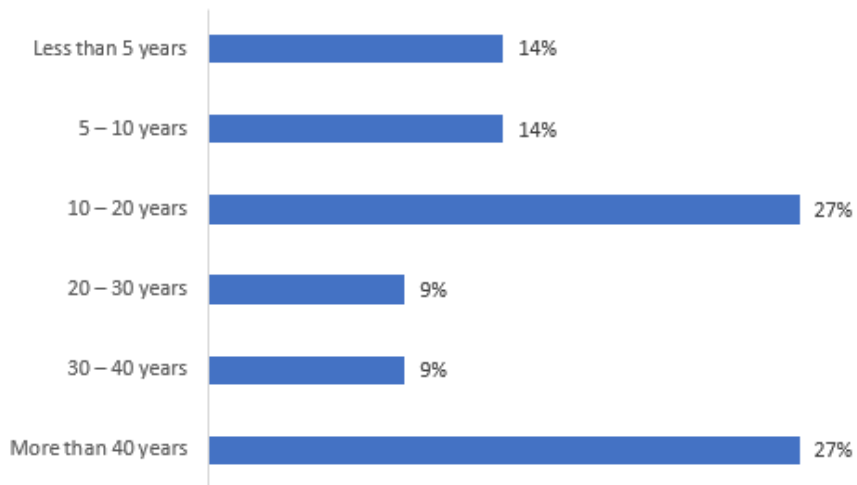


Figure 4-5 Number of years respondents have lived on or owned the property

### 4.11 Vehicle ownership

Respondents were asked: ‘How many motor vehicles are owned/used by residents of your household?’

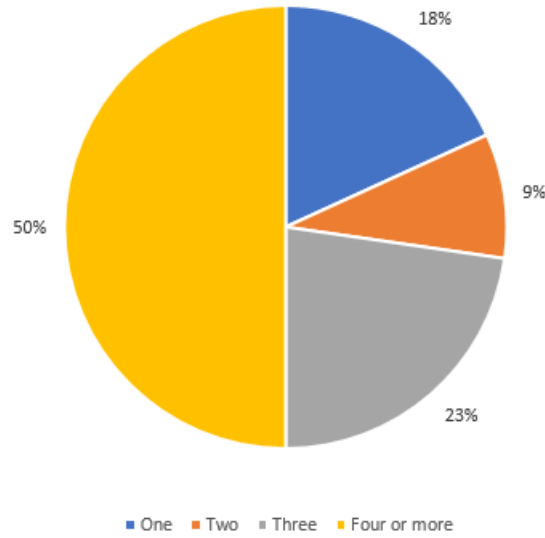


Figure 4-6 Vehicle ownership

### 4.12 Property use

Respondents were asked: ‘Which land use category currently describes the main use of your property?’

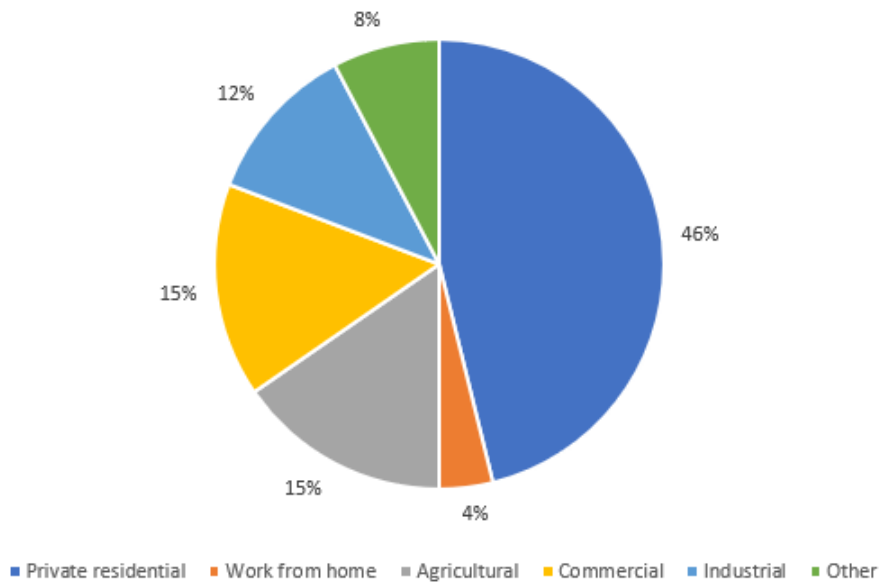


Figure 4-7 Property use