



The Northern Road Upgrade

Glenmore Parkway, Glenmore Park to Jamison Road, South Penrith

Roads and Maritime Services

Socio-economic assessment

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1. Introduction

Roads and Maritime Services (Roads and Maritime) is proposing to upgrade The Northern Road between Glenmore Parkway, Glenmore Park and Jamison Road, South Penrith ('the proposal'). The proposal is located about 47 kilometres west of central Sydney and about 2.5 kilometres southeast of the Penrith central business district.

This report assesses the likely socio-economic impacts associated with the construction and operation of the proposal.

1.1 Background

Roads and Maritime is upgrading The Northern Road as part of the Australian and NSW governments' Western Sydney Infrastructure Plan, which will deliver \$3.6 billion in road infrastructure improvements over the next 10 years. The proposal was announced in April 2014 by the (then) Prime Minister as part of the Western Sydney Infrastructure Plan's program of work to support the proposed western Sydney airport at Badgerys Creek.

The Northern Road is classified as a State Road and forms part of route A9, connecting Campbelltown to Windsor. The Northern Road also connects the Western Sydney Priority Growth Area, the Western Sydney Employment Area, the M4 Western Motorway, and the site for the proposed western Sydney airport at Badgerys Creek.

This section of The Northern Road is currently a four lane road, largely divided by a narrow median. A 1.3 kilometre undivided section of road is located between about 200 metres south of Smith Street and 200 metres north of Frogmore Road. There are five signalised, and six unsignalised intersections, as well as various unrestricted property accesses along this section of The Northern Road. At some unsignalised intersections and property accesses, right turn movements can be made across a painted median.

The proposal would upgrade The Northern Road to an eight-lane divided road, with three general traffic lanes and a kerbside bus lane in each direction, separated by a raised concrete median. Beyond Jamison Road, The Northern Road continues as a six lane carriageway to the north.

It is anticipated that construction of the proposal would start in early 2017 and would be open to traffic by the end of 2019.

1.2 Description of the proposal

The proposal would involve upgrading a four kilometre section of The Northern Road between Glenmore Parkway, Glenmore Park and Jamison Road, South Penrith. The proposal would comprise the following key features:

- An eight-lane divided road (three general traffic lanes and a kerbside bus lane in each direction) from just south of Glenmore Parkway, Glenmore Park to Jamison Road, South Penrith
- An upgrade to the M4 Motorway interchange, including:
 - Construction of a new two-span bridge over the M4 Motorway, located to the east of the existing bridge alignment
 - Replacement of the existing two sets of traffic lights at the M4 Motorway interchange, with a single set of traffic lights to control all movements at the interchange
 - Widening of ramps to accommodate future Smart Motorway requirements
 - Demolition of the existing bridge over the M4 Motorway
- New traffic lights on The Northern Road at:
 - The Glenmore Parkway and Wentworth Road intersection

- The Frogmore Road and Tukara Road intersection
- Altered intersection arrangements at:
 - The Northern Road and Homestead Road (left-in, left-out only)
 - The Northern Road and Castle Road (left-in, left-out only)
- Upgrade of The Northern Road and Glenmore Parkway / Wentworth Road intersection, comprising:
 - Traffic lights to replace the existing roundabout, allowing all movements
 - Separate left-turn lanes on all approach roads to the intersection
 - Additional left-turn and right-turn capacity from both approach roads onto The Northern Road
 - A new dedicated access road into the Penrith Golf and Recreation Club, meeting Glenmore Parkway at a new T-intersection about 175 metres west of The Northern Road, with all left and right turn movements allowed
 - A new single-lane roundabout on Glenmore Parkway west of the proposed new Golf Club access road, to facilitate U-turn movements for traffic entering or leaving Fairwater Court and Garswood Road
- Changes to local roads, including:
 - Extension of Cross Road to provide a new local connection between Wentworth Road and Homestead Road
 - A new roundabout on Frogmore Road, west of the existing intersection with Simeon Road providing access to Penrith Christian School
 - Removal of the existing roundabout at Maxwell Street and Aspen Street, and replacement with a new four-leg roundabout realigned to include Hilliger Road, with traffic lights on the Aspen Street leg only
- New pedestrian and cyclist facilities, including:
 - A three-metre wide shared path along the western side of The Northern Road between Glenmore Parkway and Jamison Road
 - A three-metre wide shared path along the eastern side of The Northern Road between Wentworth Road and Bringelly Road
 - A 1.5 metre wide footpath on the eastern side of The Northern Road between Bringelly Road and Jamison Road
- New or additional pedestrian crossing signals at:
 - The Northern Road intersection with Glenmore Parkway and Wentworth Road
 - The M4 Motorway interchange
 - The Northern Road intersection with Frogmore Road and Tukara Road
 - The Northern Road intersection with Maxwell Street and Bringelly Road
 - The intersection of The Northern Road and Jamison Road
- New retaining walls along:
 - The eastern side of The Northern Road, south of Homestead Road
 - Both sides of the M4 Motorway beneath the proposed bridge (reinforced soil walls)
 - The northern side of the eastbound M4 on-ramp, towards the eastern end of the ramp
 - The western side of The Northern Road, south of Tukara Road
 - The eastern side of The Northern Road adjacent to the Flower Power Garden Centre, south of Castle Road
 - The eastern side of The Northern Road, south of Bringelly Road
 - The eastern and western side of The Northern Road at numerous locations between Maxwell Street / Bringelly Road and Smith Street
 - The southern side of Smith Street, west of the intersection with The Northern Road

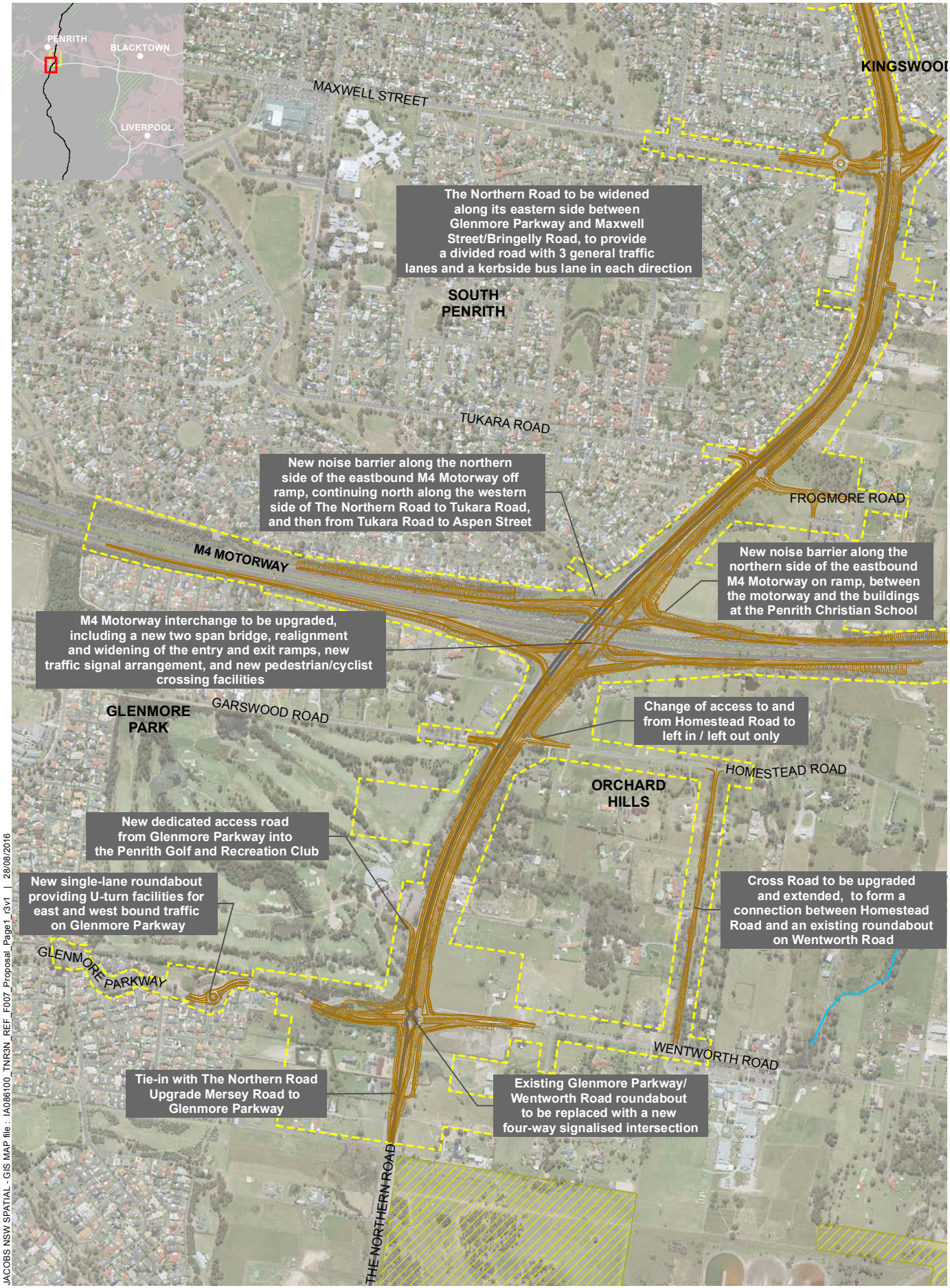
- The eastern and western side of The Northern Road at numerous locations between Smith Street and Jamison Road
- Upgrade of drainage infrastructure, including:
 - New or upgraded cross-drainage structures to replace existing cross-drainage where required
 - New longitudinal drainage including open concrete or grass-lined catch drains, grassed swales, pits and pipes
- New noise barriers at the following locations:
 - A noise mound along the northern side of the eastbound M4 Motorway off-ramp (the mound would be about 670 metres long and six metres high)
 - A noise wall along the eastbound M4 Motorway off-ramp from the end of the noise mound, continuing north along the western side of The Northern Road to Aspen Street (the wall would be about one kilometre long and up to 4.5 metres high)
 - A noise wall along the eastbound M4 Motorway on-ramp, between the motorway and the buildings at the Penrith Christian School (the wall would be about 325 metres long and up to 4.5 metres high)
- Two permanent variable message signs (VMS) on The Northern Road near the M4 Motorway interchange
- New street lighting
- New landscaping
- Relocation of utility services and construction/installation of new utility services
- Relocation of some bus stops and construction of new bus stops
- Changes to property accesses along The Northern Road to left-in, left-out only
- Adjustments to private properties to accommodate the proposal, including driveways, front yards, retaining walls, utility connections and fencing
- Establishment and use of temporary site compounds during construction.

It is anticipated that construction of the proposal would start during 2017 and is expected to be completed by mid-2020.

A detailed description of the proposal is provided in Chapter 3 of the REF.

The location and key features of the proposal is shown in Figure 1.1. This includes an outline of the proposal area, which is defined in the REF as land within the proposal's construction footprint as well as a small buffer to accommodate the minor changes that may arise as the design is further developed.

The study area for this socio-economic assessment is outlined in Section 2.1 and shown on Figure 2.1. It is based on those communities that have potential to experience changes to socio-economic conditions due to the proposal and includes a broader area to that included in the REF proposal area.



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— The Northern Road Upgrade between Glenmore Parkway and Jamison Road
 Proposal area
 The Northern Road (Existing)

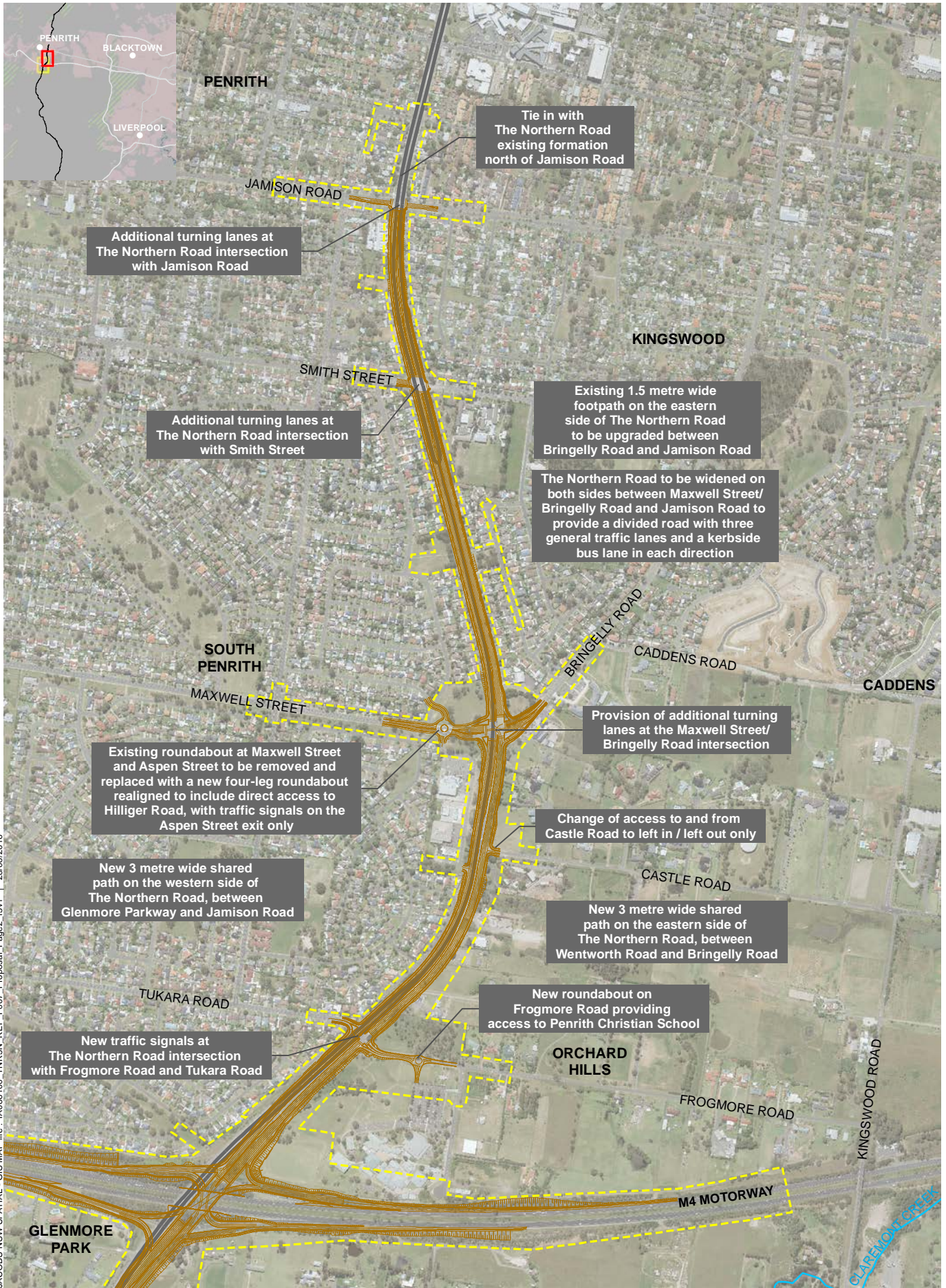
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Figure 1-1 | Key features of the proposal



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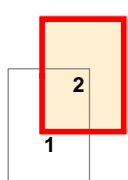

<p>— The Northern Road Upgrade between Glenmore Parkway and Jamison Road</p>	<p>— The Northern Road (Existing)</p> <p>- - - Proposal area</p>	 <p>0 200 400 m</p> 
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Figure 1-1 | Key features of the proposal

1.3 Location and context

The proposal is located within the Penrith local government area (LGA). The area comprises a mix of urban and rural uses. West of The Northern Road and north of Caddens Road, land uses are mainly characterised by low and medium density residential development. Rural land uses are mainly located east of The Northern Road and south of Caddens Road. Commercial, education, community and recreation land uses are also located near the proposal.

The proposal crosses the M4 Motorway roughly half way between Mulgoa Road and Mamre Road. The Northern Road is the main collector to and from the M4 Western Motorway through the area.

1.4 Purpose of this document

This report has been prepared in support of the review of environmental factors (REF) for the proposed The Northern Road Upgrade between Glenmore Parkway, Glenmore Park and Jamison Road, South Penrith. This report provides an assessment of potential socio-economic benefits and impacts of the proposal, including:

- A description of the existing socio-economic baseline conditions of potentially affected communities near the proposal
- An assessment of potential changes to socio-economic conditions from the construction and operation of the proposal
- Mitigation and monitoring measures to enhance the proposal's benefits and avoid, manage or mitigate its potential socio-economic impacts.

2. Methodology

This section provides an overview of the study area and methodology for the assessment of socio-economic impacts.

2.1 Study area

The study area for the socio-economic assessment is shown in Figure 2.1. It is based on those communities that have potential to experience changes to socio-economic conditions due to the location and operation of the proposal, construction activities and changes in movement patterns for residents, workers and visitors.

It includes the Australian Bureau of Statistics (ABS) Statistical Areas Level 2 (SA2) geographies of:

- Mulgoa-Luddenham-Orchard Hills SA2
- Glenmore Park-Regentville SA2
- Kingswood-Werrington SA2
- Jamison-South Penrith SA2
- Penrith SA2.

Benefits and impacts from the proposal's construction and operation may also be experienced by regional communities. As such, this assessment also considers at a broader level where relevant, impacts on communities and businesses in the Penrith LGA and wider Sydney region.

2.2 Study methodology

Socio-economic assessment involves the process of analysing, monitoring and managing the intended and unintended social and economic impacts, both positive and negative, of a proposed development. It involves identifying and evaluating changes to or impacts on, communities, business and industry that are likely to occur as a result of a proposed development, in order to mitigate or manage impacts and maximise benefits.

This assessment has been developed in accordance with Roads and Maritime's *Environmental Impact Assessment Practice Note N05 – Socio-economic assessment*.

The first step in the assessment process involved scoping the likely range of potential socio-economic impacts and identifying communities likely to be affected by the proposal's construction and operation. The outcomes of the scoping phase informed the study area for the socio-economic assessment, the information to be gathered for the existing baseline, and assessment of potential impacts.

The second step of the assessment involved describing existing socio-economic characteristics, values and conditions in the study area. This provides a baseline from which potential benefits and impacts of the proposal can be assessed. The existing baseline involved consideration of both qualitative and quantitative analysis, including:

- Existing State and local government policies and strategies relevant to the socio-economic environment of the study area
- Population and demographic data for communities in the study corridor, such as population size and growth, diversity, socio-economic disadvantage and housing
- Economic information, including data on employment, income, local business and industry in the study area
- Existing social infrastructure in the study area and near the proposal, such as education facilities, health and emergency services, recreation uses and transport facilities
- Community values relating to factors such as amenity and sense of place, access and connectivity, and community health and safety.

The description of the existing socio-economic conditions principally draws on information from the ABS *Census of Population and Housing 2011*, supplemented with information and data from:

- Government agencies such as the ABS, and NSW Department of Planning and Environment
- State Government and Penrith City Council publications, reports, guidelines and websites
- A visual survey of businesses located near the proposal
- Community and stakeholder consultation carried out for The Northern Road Upgrade.

The next step for the assessment involved identifying and evaluating impacts on and changes to socio-economic conditions and values in the study area from the proposal's construction and operation.

The final step for the assessment involved identifying measures to avoid, minimise or mitigate socio-economic impacts arising from the proposal.

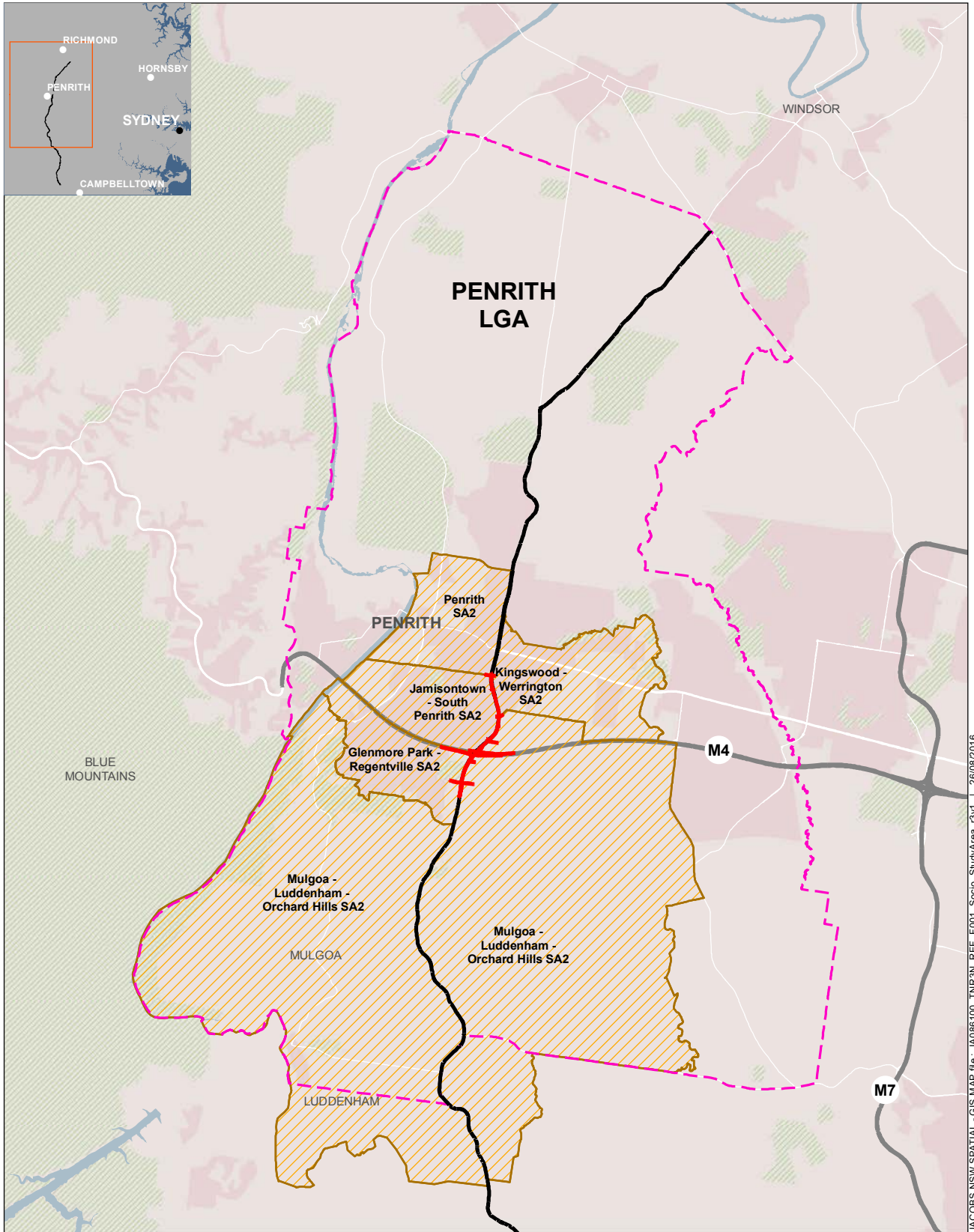
This socio-economic assessment, including scoping of socio-economic issues, description of existing socio-economic values, and impact assessment and management has been informed by:

- Roads and Maritime's *Environmental Impact Assessment Practice Note N05 – Socio-economic assessment*
- Social and economic assessments carried out for other road and transport infrastructure projects in NSW and elsewhere
- Outcomes of consultation carried out for The Northern Road Upgrade
- Outcomes of other technical assessments undertaken for the EIS, including traffic and transport, noise, landscape and visual amenity, and cultural heritage.

2.3 Community and stakeholder consultation

Community and stakeholder consultation – including with affected property owners, local communities, businesses, and government agencies – has formed an integral part of the proposal development.

The consultation chapter of the REF provides an overview of community and stakeholder consultation carried out for the proposal, along with the key issues raised. The socio-economic assessment was informed by the outcomes of this consultation, including the identification of existing features and values important to communities in the study area, and potential benefits and impacts of the proposal, and identification of impact management measures.



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Legend

- The Northern Road Upgrade between Glenmore Parkway and Jamison Road
- The Northern Road
- Study area
- SA2 boundary
- Penrith Local Government Area (LGA)
- Built areas

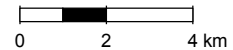


Figure 2-1 | Socio-economic assessment study area

3. Socio-economic policy context

A detailed discussion of strategic planning and policy documents relevant to the proposal are described in Chapter 2 of the REF. This section provides an overview of those relevant to the socio-economic environment of the study area.

3.1 New South Wales

3.1.1 A Plan for Growing Sydney

A Plan for Growing Sydney (NSW Government, 2014a) is the NSW Government's plan for the future of the Sydney Metropolitan Area over the next 20 years. Released in December 2014, the Plan provides key directions and actions to guide Sydney's productivity, environmental management and liveability, including the delivery of housing, employment, infrastructure and open space.

The Plan outlines a number of goals to guide expected growth in Sydney over the next 20 years and achieve the vision for Sydney as '*a strong global city, a great place to live*'. Those relevant to the proposal include:

- A competitive economy with world-class services and transport
- A great place to live with communities that are strong, health and well-connected.

Transforming the productivity of Western Sydney through growth and investment; enhancing capacity at Sydney's Gateways, including a planned western Sydney airport at Badgerys Creek; and delivering the infrastructure that is needed are some of the steps identified by the NSW Government to deliver the goals (<http://www.planning.nsw.gov.au/Plans-for-Your-Area/Sydney>).

Sub-regional planning

The proposal is located within the West subregions of the Plan for Growing Sydney.

The Plan identifies the West subregion as continuing to provide distinctive rural landscapes, extensive agricultural and resource lands, and large areas of conservation uses, as well as major urban areas. The planned western Sydney airport at Badgerys Creek will be a catalyst for new infrastructure investment and employment in the subregion. Improved transport connections to the Western Sydney Employment Area and between centres in the subregion and other subregions are identified as priorities for the West subregion (NSW Government, 2014a).

3.2 Penrith City Council

3.2.1 Penrith Community Plan

The *Penrith Community Plan* (Penrith City Council, 2015) (Community Strategic Plan) outlines Penrith City Council's key strategies to meet the community's long term aspirations for Penrith City. The *Community Plan* focuses on seven community outcomes that reflect the community's goals for the LGA and outlines the strategies Penrith City Council has developed to address these goals.

Community outcomes relevant to the proposal include:

- *We can work close to home*, which looks at how government, partners and Council attract strategic investment, facilitate diversity and growth in employment, promote job clusters and encourage local workforce skills and training so that we can be more resilient to economic changes. A key strategy for this outcome includes '*secure infrastructure that improves economic opportunities for existing and new businesses*'.
- *We plan for our future growth*, which seeks to ensure the City's future urban growth protects rural lands, respects heritage and provides housing choice. Ensuring services, facilities and infrastructure meet the needs of a growing population is identified as a key strategy for this outcome.

- *We can get around the city*, which targets the delivery of effective transport options for passengers and freight in the City and the region by Council and other levels of government. Strategies to achieve this outcome relate to securing an effective public transport network; providing a safe and efficient road network supported by parking; improving the City's footpaths and shared pathway network; improving critical cross regional transport connections; and securing an efficient, integrated and sustainable freight network.

4. Existing socio-economic environment

This section describes existing socio-economic characteristics and features of the study area to provide a baseline against which the proposal's socio-economic impacts can be assessed. This includes information on population and housing, the economy, community values, social infrastructure and transport and access.

4.1 Regional context

Penrith LGA is located about 50 kilometres west of central Sydney and covers an area of about 404 square kilometres. The LGA is bounded by Hawkesbury LGA to the north, Blacktown and Fairfield LGAs to the east, Liverpool and Wollondilly LGAs to the south and Blue Mountains LGA to the west (<http://profile.id.com.au/penrith/about>).

The LGA had an estimated residential population of about 197,922 people in 2015. Over the five and 10 years to 2015, average population growth in the Penrith LGA was at or marginally above the NSW average (ABS, 2016). Over the next 15 years, the population of the LGA is predicted to grow at a rate above the NSW average (NSW Department of Planning and Environment, 2014).

Penrith comprises predominantly rural land uses, with about 80 per cent of the LGA comprising rural and rural-residential uses. Agricultural uses include dairying, poultry farming, hobby farming, orcharding, market gardening and horse breeding. Urban uses in the LGA comprise mainly residential uses, with some commercial and industrial areas. Major commercial centres in the LGA are located at Penrith, west of the proposal and St Marys, east of the proposal (<http://profile.id.com.au/penrith/about>).

The LGA has a number of major education facilities including the University of Western Sydney, the Western Sydney Institute, and TAFE NSW Western Sydney Institute Penrith Campus. Major hospitals in the Penrith LGA include the Nepean Public Hospital and Nepean Private Hospital, which are located north of the proposal. Penrith Lakes Regional Park is a key focus of sport, recreation and leisure facilities for local and regional communities, and accommodates a range of local, regional and international level facilities such as the Sydney International Regatta Centre, Penrith Whitewater Stadium and Nepean Aquatic Centre. Penrith Stadium and the Penrith Panthers Leagues Club also provide sporting, recreation and leisure facilities for local and regional communities.

The Penrith LGA is serviced by a number of major roads including the M4 Western Motorway, M7 Motorway, the Great Western Highway and The Northern Road. Other key transport routes serving the LGA include the Western railway line, which connects central Sydney to Emu Plains and beyond to the Blue Mountains.

4.2 Population and housing

This section describes the key population, demographic and housing characteristics of local and regional communities most likely to experience changes from the construction and operation of the proposal. Data is presented for each of the SA2 areas within the study area along with data for Penrith City and NSW. The information presented is primarily based on data from the ABS 2011 Census, supplemented with information and data from other relevant sources such as NSW Government departments and Penrith City Council.

4.2.1 Population size, growth and mobility

The study area had a total resident population of 82,288 people at June 2015. The Glenmore Park-Regentville SA2 had the largest resident population, at 23,092 people (refer to **Table 4.1**).

Over the 10 years to June 2015, the population of the study area grew by about 11,825 people, an average of about 1.6 per cent per annum. This was above the rate of population growth for NSW over the same period and was driven by relatively high population growth in the SA2 areas of Kingswood-Werrington and Mulgoa-Luddenham-Orchard Hills.

Table 4.1 : Estimated resident population, 2005-2015

Locality	ERP as at 30 June			Change (2005-2015)		Change (2010-2015)	
	2005	2010	2015	Number	Ave. annual change (%)	Number	Ave. annual change (%)
Mulgoa-Luddenham-Orchard Hills SA2	6,391	6,700	7,867	1,476	2.1	1,167	3.3
Glenmore Park-Regentville SA2	20,080	21,461	23,092	3,012	1.4	1,631	1.5
Jamison town-South Penrith SA2	16,760	17,312	18,127	1,367	0.8	815	0.9
Kingswood-Werrington SA2	15,625	17,002	20,158	4,533	2.6	3,156	3.5
Penrith SA2	11,607	12,128	13,044	1,437	1.2	916	1.5
Study area	70,463	74,603	82,288	11,825	1.6	7,685	2.0
Penrith LGA	175,799	182,948	197,922	22,123	1.2	14,974	1.6
NSW	6,650,735	7,053,755	7,518,472	867,737	1.2	464,717	1.3

Source: Commonwealth of Australia (2016), 3218.0 Regional Population Growth, Australia

Information on population projections for the study area is available at an LGA level from the NSW Department of Planning and Environment (refer to **Table 4.2**). The Penrith LGA is expected to experience relatively high rates of population growth over the 20 years to 2031, compared to NSW and the wider Sydney Metropolitan area. By 2031, the population of the LGA is projected to grow to about 261,450 people, an average annual growth rate of about 1.8 per cent. This is compared to 1.2 per cent in NSW.

Population growth in the region is expected to focus on the Western Sydney Priority Growth Area, around the planned Badgerys Creek Airport. The NSW Government is currently preparing a draft Land Use and Infrastructure Strategy to guide growth and investment in the area.

Table 4.2 : Population projections, 2011-2031

Locality	Population		Population change (2011-2031)	
	2011	2031	Number	Ave. annual change (%)
Penrith LGA	184,600	261,450	76,850	1.8
Metropolitan Sydney	4,286,200	5,861,750	1,575,550	1.6
NSW	7,218,550	9,228,350	2,009,800	1.2

Source: NSW Department of Planning and Environment (2014), New South Wales State and Local Government Area Population Projections: 2014 Final (www.planning.nsw.gov.au/Research-and-Demography/Demography/Population-Projections)

Overall, the study area had lower levels of population mobility compared to NSW, with higher proportions of people who had lived at the same address both 12 months and five years prior to the 2011 Census (refer to **Table 4.3**). In 2011, 83 per cent of people in the study area lived at the same address 12 months prior to the 2011 Census, while 58.5 per cent lived at the same address five years prior to the Census. This is compared to 81 per cent and 57.2 per cent respectively, of people in NSW as a whole.

Levels of population mobility varied across the study area. Mulgoa-Luddenham-Orchard Hills recorded particularly low levels of mobility, demonstrating relatively stable population and reflecting the more rural nature and more established communities in this area. The Penrith SA2 had very high levels of population mobility, which is likely to reflect the higher levels of rental households in this area. Glenmore Park-Regentville had relatively low levels of mobility in the short-term, but recorded a level of population mobility above the study area average in the longer term, which is likely to reflect the urban development that has occurred in this area since the 1990s.

Table 4.3 : Population mobility, 2011 (%)

Locality	Same address 12 months prior to 2011 Census	Same address five years prior to 2011 Census
Mulgoa-Luddenham-Orchard Hills SA2	86.3	69.1
Glenmore Park-Regentville SA2	86.2	61.5
Jamisontown-South Penrith SA2	84.5	62.5
Kingswood-Werrington SA2	79.7	52.5
Penrith SA2	78.4	50.0
Study area	83.0	58.5
Penrith LGA	84.1	62.6
NSW	81.0	57.2

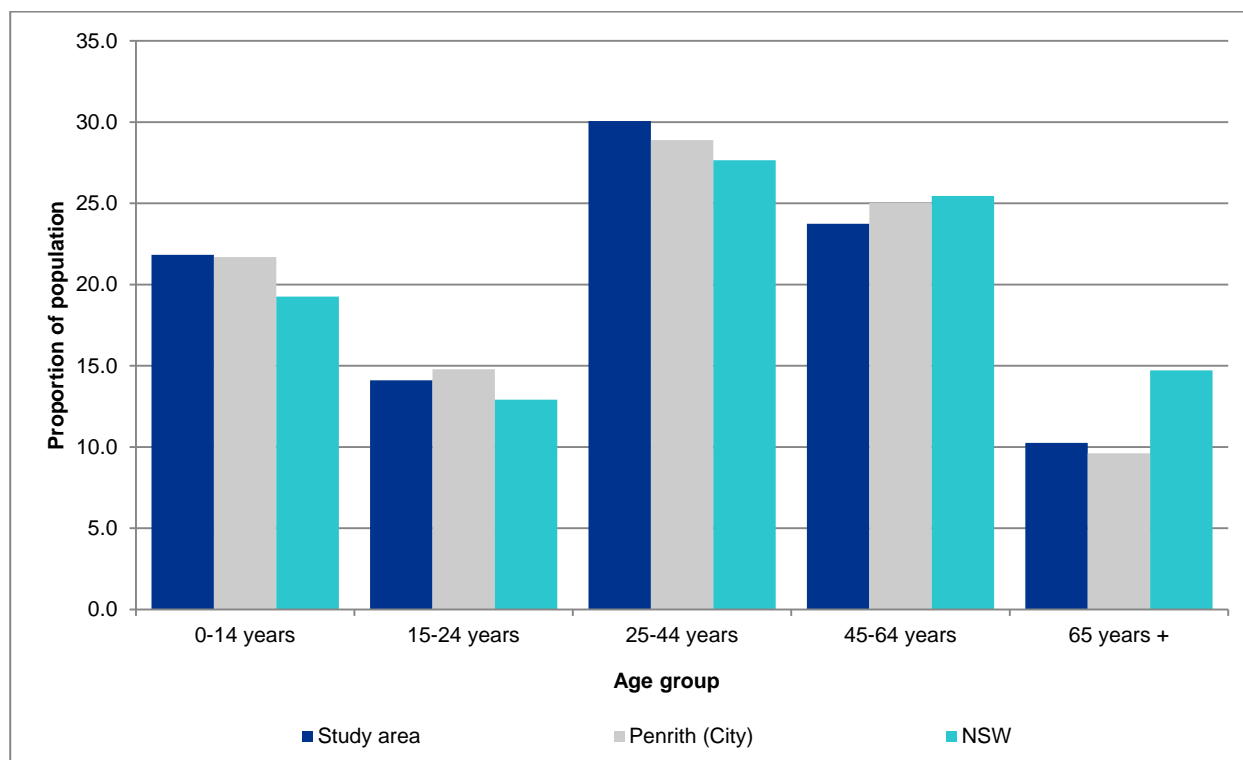
Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

4.2.2 Age profile

The study area as a whole had a younger population compared to NSW, with a lower median age; higher proportion of children aged 14 years or under and people aged 25-44 years; and lower proportions of older people aged 65 years or over (refer to Figure 4.1).

The younger age profile of the study area was generally driven by relatively young populations in Glenmore Park-Regentville and Kensington-Werrington, which both had median ages well below the NSW median. In 2011, Glenmore Park-Regentville and Kingswood-Werrington had proportions of children aged 14 years or under above the study area average.

Figure 4.1 : Age profile, 2011



Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

4.2.3 Cultural diversity

Communities in the study area as a whole generally displayed lower levels of cultural diversity compared with NSW, with lower proportions of people born overseas, people who speak a language other than English and who speak English well or not at all (refer to Table 4.4).

The study area had proportions of people who reported as Aboriginal marginally above the NSW average, although the Penrith and Kingswood-Werrington SA2s had relatively high proportions of Aboriginal people.

At the 2011 Census, about 21 per cent of people in the study area were born overseas. After Australia, the most common countries of birth were The United Kingdom, Channel Islands and Isle of Man (5.3 per cent); India (1.7 per cent); and New Zealand (1.6 per cent).

About 13.7 per cent of people in the study area spoke a language other than English at home. Indo-Aryan languages (for example, Bengali, Hindi, Punjabi); Southeast Asian Austronesian languages (for example, Filipino, Indonesian, Tagalog); and Arabic were the most common languages spoken at home after English.

People with lower levels of English proficiency represent a stakeholder group with particular communication needs and who may be more vulnerable to changes from the proposal. About 5.1 per cent of people in the study area did not speak English well or at all, compared to 12.3 per cent in NSW as a whole.

The Kingswood-Werrington and Penrith SA2s generally displayed the highest levels of diversity within the study area.

Table 4.4 : Cultural diversity, 2011 (%)

Locality	Aboriginal people	People born overseas	Speaks language other than English at home	Does not speak English well or at all
Mulgoa-Luddenham-Orchard Hills SA2	1.7	18.0	14.2	4.7
Glenmore Park-Regentville SA2	1.6	20.3	13.0	3.3
Jamisontown-South Penrith SA2	2.6	18.0	8.3	3.7
Kingswood-Werrington SA2	3.1	24.9	19.9	6.1
Penrith SA2	4.0	22.1	13.6	8.0
Study area	2.6	21.0	13.7	5.1
Penrith LGA	3.0	20.9	14.6	5.8
NSW	2.5	25.7	22.5	12.3

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

4.2.4 Households and families

There were about 25,494 households in the study area at the 2011 Census. Compared to NSW, the study area had high proportions of family households and relatively low proportions of lone person and group households (refer to Table 4.5).

Regionally, there were about 59,391 households in the Penrith LGA in 2011. The number of households in the LGA is projected to grow to about 94,850 households by 2031, an average of about two per cent annually. This is above the average rate of growth predicted for both Metropolitan Sydney and NSW. A focus for growth and development within the region includes the Western Sydney Priority Growth Area, located around Badgerys Creek airport, and the South West Priority Land Release Area.

There were about 43,134 families in the study area in 2011 of which, 51.5 per cent comprised young families with children aged under 15 years (refer to Table 4.5). This was higher than the proportion of this family type in NSW as a whole. Within the study area, the Kingswood-Werrington SA2 had very high proportions of young

families. The Mulgoa-Luddenham-Orchard Hills SA2 had the highest proportion of couple only families, although this was below the NSW average, and the highest proportion of older families.

Table 4.5 : Family composition, 2011

Locality	Couple family with no children (%)	Families with children under 15 years (%)	Families with no children under 15 years (%)	Total families
Mulgoa-Luddenham-Orchard Hills SA2	33.5	38.4	27.1	1,748
Glenmore Park-Regentville SA2	25.2	51.0	22.7	5,781
Jamisontown-South Penrith SA2	24.2	49.3	25.3	13,999
Kingswood-Werrington SA2	19.9	56.5	22.4	13,575
Penrith SA2	25.6	50.1	22.2	8,031
Study area	26.6	51.5	23.5	43,134
Penrith LGA	29.6	42.7	26.2	48,360
NSW	36.6	38.9	22.8	1,829,553

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

4.2.5 Housing

Dwellings

There were 27,044 dwellings in the study area at the 2011 Census, of which 94.3 per cent were occupied on Census night (refer to Table 4.6).

Separate houses were the predominant dwelling type in the study area, accounting for about 69.6 per cent of total dwellings. This was above the proportion of separate houses in NSW, reflecting the outer suburban and semi-rural nature of the study area. The study area also had proportions of medium-density houses (for example, semi-detached, row or terrace houses, and townhouses) above the NSW average. This was driven by high levels of medium density housing in the Penrith and Kingswood-Werrington SA2s, which is likely to reflect the more established, suburban nature of these areas and their proximity to the Penrith CBD.

At a regional level, there were about 62,632 dwellings within the Penrith LGA at the 2011 Census. It is projected that about 99,850 dwellings would be required to accommodate the region's population by 2031.

Table 4.6 : Dwellings, 2011

Locality	Separate house (%)	Semi-detached dwelling, etc (%)	Flat, unit or apartment (%)	Total private dwellings
Mulgoa-Luddenham-Orchard Hills SA2	86.2	1.1	2.8	2,152
Glenmore Park-Regentville SA2	88.3	7.6	0.7	6,574
Jamisontown-South Penrith SA2	80.5	6.4	8.2	6,387
Kingswood-Werrington SA2	56.0	22.8	14.3	6,565
Penrith SA2	43.5	23.3	23.9	5,366
Studarea	69.6	13.6	10.5	27,044
Penrith LGA	77.3	10.3	6.8	62,632
NSW	62.8	9.6	17.0	2,736,637

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

Housing cost and tenure

Overall, the study area had levels of owner occupied houses marginally below the NSW average, and houses that were being rented above NSW as a whole (refer to Table 4.7).

At the 2011 Census, about 65.7 per cent of occupied private dwellings in the study area were either owned outright or owned with a mortgage. This is compared to about 66.5 per cent in NSW as a whole. The Mulgoa-Luddenham-Orchard Hills SA2 had the highest proportion of houses that were owned outright, which is likely to reflect the older population and more established residential uses in the area.

Dwellings being rented comprised about 31.6 per cent of occupied private dwellings in the study area at the 2011 Census, which was above the Penrith LGA and NSW averages. About 1,286 occupied private dwellings in the study area were rented from a State housing authority, of which about 80 per cent were located in the Penrith and Kingswood-Werrington SA2s. This represented about five per cent of occupied private dwellings in the study area, compared to 4.4 per cent in NSW.

Housing costs in the study area were marginally below the NSW and Penrith LGA averages. Glenmore Park-Regentville had the highest housing costs in the study area. Compared to NSW, the study area had a higher proportion of households that are likely to experience levels of housing stress due to mortgage repayments. In 2011, an average of 12.1 per cent of households in the study area paid 30 per cent or more of their income on mortgage payments, compared to 10.5 per cent in NSW. This was up to 16.7 per cent in the Glenmore Park-Regentville SA2.

The proportion of households in the study area as a whole paying 30 per cent or more of their income on rental costs was marginally below the NSW average. However, the Penrith and Kingswood-Werrington SA2s recorded relatively high proportions of households paying 30 per cent or more of their income on rental costs.

Table 4.7 : Housing tenure and costs, 2011

Locality	Owner occupied* (%)	Rented (%)	Rented from State housing authority (%)	Median rental costs (\$/ week)	Median mortgage costs (\$/ month)	Rent payments are 30% or greater of household income (%)	Mortgage payments are 30% or greater of household income (%)
Glenmore Park-Regentville SA2	77.7	21.0	0.8	360	2,200	6.5	16.7
Mulgoa-Luddenham-Orchard Hills SA2	78.5	18.9	0.2	290	2,200	6.2	12.0
Penrith SA2	45.8	49.4	11.4	250	1,705	18.1	7.2
Kingswood-Werrington SA2	58.0	39.2	7.7	270	1,788	15.6	12.6
Jamisontown-South Penrith SA2	73.1	24.7	3.2	300	1,950	9.2	12.2
Study area **	65.7	31.6	5.0	294	1,969	11.1	12.1
Penrith LGA	70.6	26.7	4.4	300	1,983	9.8	13.2
NSW	66.5	30.1	4.4	300	1,993	11.6	10.5

Notes: * includes dwellings owned outright or owned with a mortgage; ** Median rental and mortgage costs and rent and mortgage payments for the study area refers to the average of SA2s in the study area

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile; ABS (2013), 2011 Census QuickStats

4.2.6 Socio-economic disadvantage and need for assistance

A community's level of socio-economic disadvantage may influence the ability of that community to cope with or respond to changes. The ABS produces a range of indices that indicate relative levels of socio-economic advantage and disadvantage. The Socio-economic Indexes for Areas (SEIFA) index of relative socio-economic disadvantage is derived from variables such as income, educational attainment, unemployment and vehicle ownership. Low decile values generally represent areas of disadvantage while high decile values generally represent areas of least disadvantage (Commonwealth of Australia, 2013a).

Figure 4.2 shows relative socio-economic disadvantage within the study area at the 2011 Census. Communities in the northern part of the study area (that is, north of Smith Street), generally displayed higher levels of disadvantage, while those in the southern part of the study area, generally displayed lower levels of relative disadvantage.

Need for assistance refers to people who need help or assistance in at least one of the three core activity areas of self-care, mobility or communication due to disability, a long term health condition or old age. These groups may be more vulnerable to the effects of major projects, such as changes in local access, including to community services and facilities; property acquisition, including loss of social and community networks; and changes in local amenity.

The study area generally had levels of people needing assistance below the NSW average. At the 2011 Census, all SA2s apart from Penrith had levels of people in need of assistance below the NSW average. The higher level of need in the Penrith SA2 may reflect the older population in this area.

4.2.7 Vehicle ownership

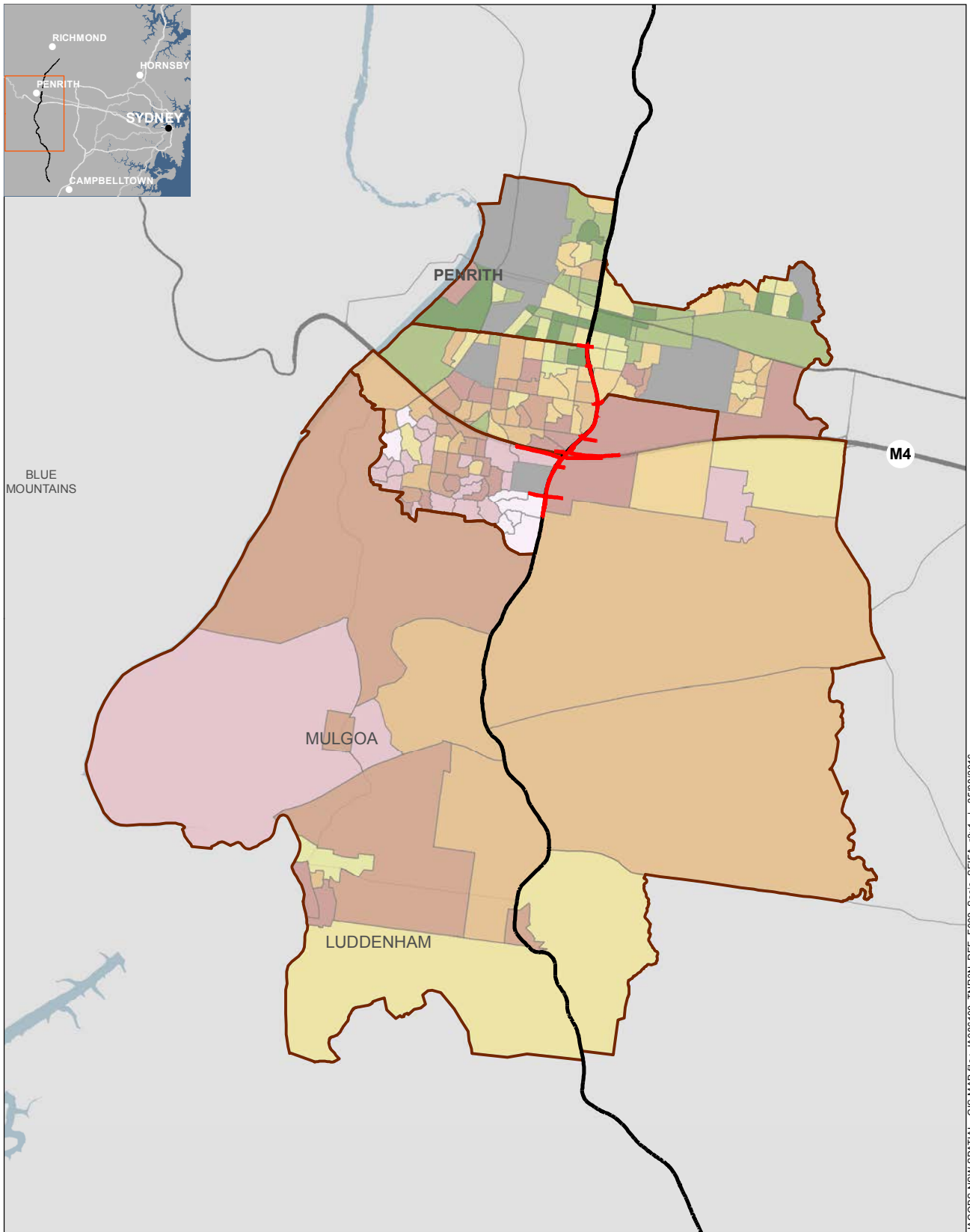
The study area had relatively high levels of vehicle ownership at the 2011 Census, with higher proportions of households with two or more vehicles and lower proportions of households without access to a vehicle compared to NSW (refer to Table 4.8).

Within the study area, Penrith SA2 had the lowest level of vehicle ownership, with relatively high levels of households without access to a private vehicle and relatively low levels of households with two or more vehicles. Kingswood-Werrington also had proportions of households without a vehicle or with two or more vehicles below the NSW averages. This is likely to reflect the greater level of access to alternative transport options such as train for communities in these areas as well as the proximity of these areas to employment, services and facilities in the Penrith CBD. It is also likely to reflect the lower household and personal incomes in these areas, particularly in the Penrith SA2.

Table 4.8 : Vehicle ownership, 2011 (%)





Locality	No motor vehicles	One motor vehicle	Two or more motor vehicles
Mulgoa-Luddenham-Orchard Hills SA2	3.0	20.3	74.2
Glenmore Park-Regentville SA2	1.9	24.9	71.8
Jamisontown-South Penrith SA2	7.0	36.6	53.7
Kingswood-Werrington SA2	12.3	41.2	43.0
Penrith SA2	20.3	45.2	30.1
Study area	9.3	35.2	52.7
Penrith LGA	7.5	32.5	57.1
NSW	10.4	37.8	48.6

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile



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Legend

-  The Northern Road Upgrade between Glenmore Parkway and Jamison Road
-  The Northern Road
-  SA2 boundary
-  Socio-economic data not available

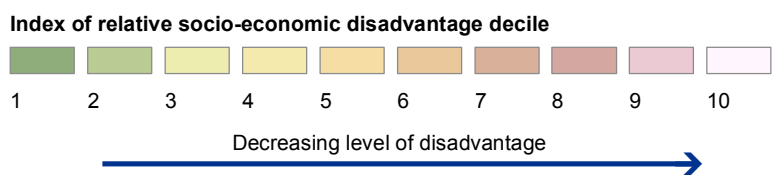


Figure 4-2 | Relative socio-economic disadvantage

4.3 Economic profile

This section describes the key economic characteristics of the study area, including income, employment and local business and industry.

4.3.1 Income and employment

Income

The study area recorded median personal and household incomes above the NSW average at the 2011 Census. Income levels varied across the study area, with the higher median incomes for the study area generally driven by very high incomes in Glenmore Park-Regentville (refer to Table 4.9).

Communities in the study area generally had lower proportions of low income households (households with a weekly income of less than \$600) and higher proportions of high income households (households with a weekly income of more than \$2,000) compared to NSW. The Penrith SA2 recorded the lowest income levels in the study area, with personal and household incomes below the NSW average. The Penrith SA2 also recorded relatively high proportions of low income households and low proportions of high income households.

Table 4.9 : Income, 2011

Locality	Median total income (\$/ week)		Weekly household income (%)	
	Personal income	Household income	Less than \$600	More than \$2000
Mulgoa-Luddenham-Orchard Hills SA2	629	1,594	14.9	35.0
Glenmore Park-Regentville SA2	780	1,920	8.7	42.9
Jamisontown-South Penrith SA2	630	1,325	17.0	26.5
Kingswood-Werrington SA2	571	1,171	21.6	20.9
Penrith SA2	545	949	29.4	15.9
Study area	631*	1,392*	18.3	27.8
Penrith LGA	623	1,398	16.9	28.0
NSW	561	1,237	21.7	26.7

Notes: * Average of median incomes for SA2s in the study area

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

Employment

There were about 38,097 people in the study area aged 15 years or over who were either employed or looking for work at the 2011 Census. This represented a labour force participation rate of about 66.5 per cent, which was above the NSW average (refer to Table 4.10). The Glenmore Park-Regentville SA2 had a relatively high level of labour force participation, while the Penrith SA2 reported a participation rate below the NSW average.

Overall, the study area had lower rate of unemployment compared to NSW, although the Penrith and Kingswood-Werrington SA2s both had unemployment rates well above the Penrith LGA and NSW averages.

Table 4.10 : Labour force, 2011

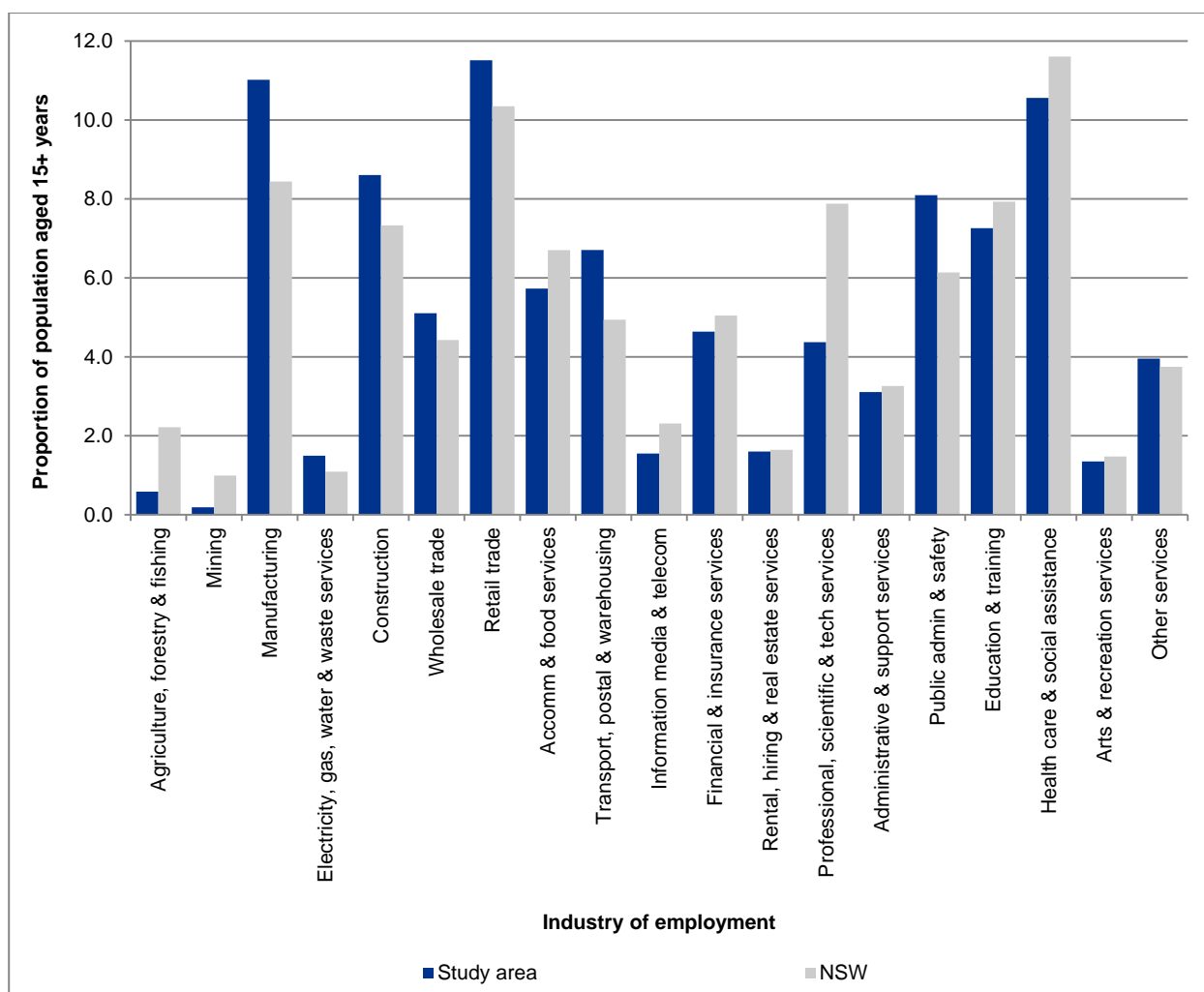
Locality	Total labour force	Participation rate (%)	Unemployment rate (%)
Mulgoa-Luddenham-Orchard Hills SA2	3,472	66.6	3.9
Glenmore Park-Regentville SA2	11,714	76.0	3.6
Jamisontown-South Penrith SA2	8,845	65.5	4.8
Kingswood-Werrington SA2	8,506	63.9	7.6

Locality	Total labour force	Participation rate (%)	Unemployment rate (%)
Penrith SA2	5,560	56.8	7.6
Study area	38,097	66.5	5.4
Penrith LGA	92,283	66.0	5.5
NSW	3,334,857	59.7	5.9

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

In 2011, key industries of employment for residents in the study area included retail trade; manufacturing; health care and social assistance; construction; and public administration and safety. As indicated in Figure 4.3, apart from health care and social assistance, the proportion of people employed in these industries was above the NSW average.

Figure 4.3 : Industry of employment, 2011



Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

4.3.2 Business and industry

Commercial and industry uses are mainly located north of the M4 Western Motorway. They include commercial and retail uses within the Penrith CBD; business development areas between Mulgoa Road and York Road and west of Mulgoa Road at Jamisontown; industrial areas at Jamisontown, north of the Great Western Highway at Penrith and at Kingswood. General industrial uses are also located at St Mary’s, east of the study area. Further information on commercial and industry uses is provided in the land use chapter of the REF.

In June 2015, there were 5,841 registered businesses in the study area (refer to Table 4.11). Construction comprised the largest number of businesses, accounting for about 21.6 per cent of all businesses in the study area. This was followed by rental, hiring and real estate services (12.4 per cent); and professional, scientific and technical services (9.2 per cent). A further 8.3 per cent of businesses comprised transport, postal and warehousing related businesses. Agriculture, forestry and fishing related businesses accounted for about 1.8 per cent of businesses in the study area. The majority of these businesses were located in the Mulgoa-Luddenham-Orchard Hills SA2, reflecting the more rural nature of this area.

Table 4.11 : Business by industry, 2015 (%)

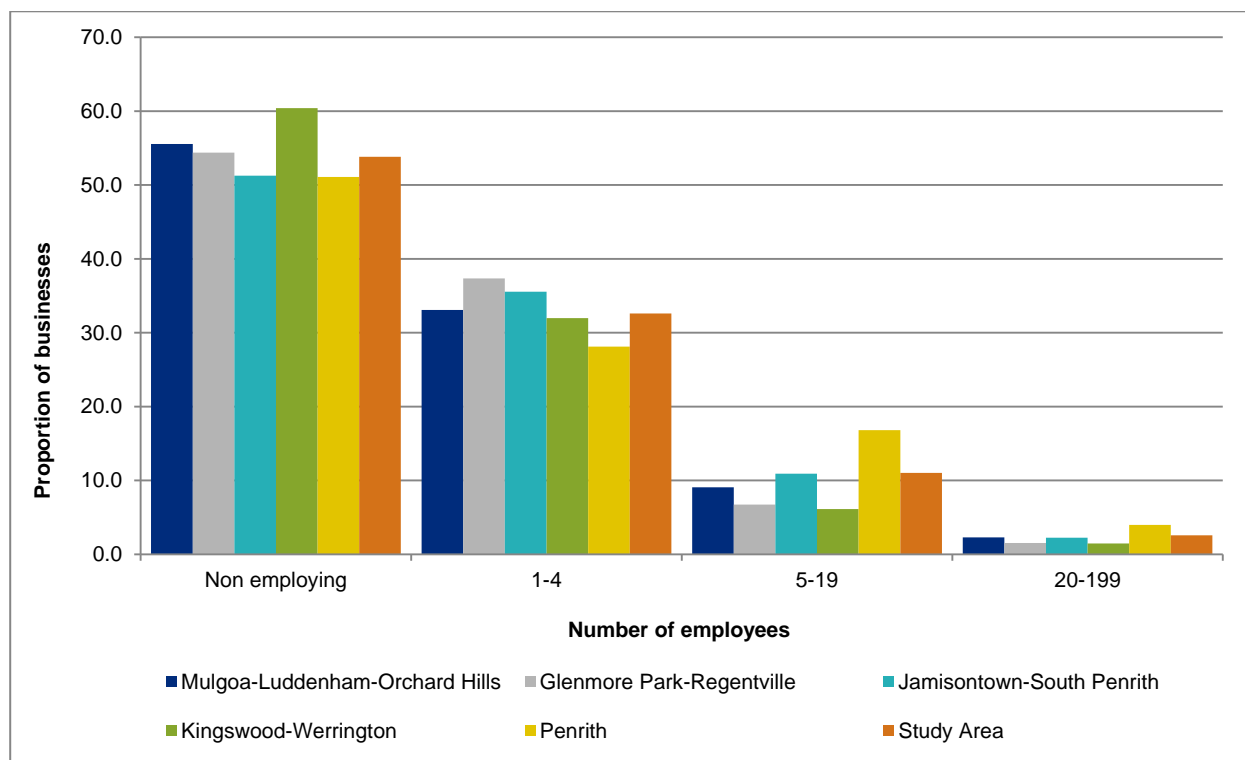
Industry	Mulgoa-Luddenham-Orchard Hills	Glenmore Park-Regentville	Jamisontown-South Penrith	Kingswood-Werrington	Penrith	Study area
Agriculture, forestry and fishing	7.2	1.0	0.4	0.5	0.7	1.8
Mining	0.0	0.0	0.0	0.4	0.2	0.1
Manufacturing	2.8	3.5	5.3	4.7	5.4	4.5
Electricity, gas, water and waste services	0.9	0.3	0.6	0.7	0.3	0.5
Construction	29.4	26.3	26.4	21.1	11.7	21.6
Wholesale trade	2.9	2.1	5.7	2.5	2.9	3.2
Retail trade	4.7	4.7	6.6	6.9	9.6	6.9
Accommodation and food services	1.6	2.4	2.2	3.4	4.5	3.0
Transport, postal and warehousing	11.6	10.1	8.3	14.2	2.9	8.3
Information media and telecommunications	0.8	0.3	1.0	0.7	0.5	0.7
Financial and insurance services	6.1	8.1	5.5	3.4	7.5	6.4
Rental, hiring and real estate services	12.2	7.1	9.9	10.8	17.7	12.4
Professional, scientific and technical services	6.6	11.0	8.0	6.9	11.5	9.2
Administrative and support services	2.4	6.0	4.0	4.7	3.1	3.9
Public administration and safety	0.6	0.9	0.5	0.4	0.5	0.6
Education and training	1.1	1.6	1.4	0.9	2.1	1.5
Health care and social assistance	3.5	6.1	3.3	8.2	9.7	6.5
Arts and recreation services	0.8	1.8	1.5	1.0	1.1	1.2
Other services	3.8	5.2	7.9	7.4	6.8	6.2
Currently unknown	1.1	1.6	1.4	1.5	1.3	1.4
Total	1,046	1,039	1,046	1,046	1,046	5,841

Source: ABS (2016), 81650 Counts of Australian Businesses, including Entries and Exits, June 2011 to June 2015

The majority of businesses in the study area comprise small businesses (refer to Figure 4.4). In June 2015, about 97.9 per cent of businesses in the study area employed less than 20 people. About 53.8 per cent of businesses comprised non-employed businesses (sole proprietorships and partnerships without employees), while 32.6 per cent had between one and four employees, and 11 per cent had 5-9 employees.

About 150 businesses in the study area (2.6 per cent) employed 19-199 employees. About half of these were located in the Penrith SA2 area, which includes businesses in the Penrith CBD. No businesses in the study area employed 200 people or more.

Figure 4.4 : Business size by employees, 2015



Source: ABS (2016), 81650 Counts of Australian Businesses, including Entries and Exits, June 2011 to June 2015

Businesses with an annual turnover of up to \$50,000 comprised the largest group of business in the study area, representing about 22.3 per cent of businesses. This was followed by businesses with an annual turnover of between \$200,000 and \$500,000 and those with a turnover of between \$100,000 and \$200,000. There were about 410 businesses in the study area that had a turnover of more than \$2M per annum, representing about seven per cent of businesses in the study area. Construction had the largest number of businesses with an annual turnover of more than \$2M, followed by retail trade.

Businesses near the proposal

A number of businesses are located near to the proposal that may experience changes from the construction and/ or operation of the proposal. These include a mix of business types including professional services, take away food outlets and retail uses. It is expected that the customer base for businesses near the proposal would include a mix of customers who have deliberately planned to use a particular business as well as customers associated with ‘passing trade’, that is customers who access a business because they see it while they are driving past.

Information on each of these businesses is provided in Table 4.12. These are shown in Figure 4.5.

Table 4.12 : Local businesses near the proposal

Locality	Business	Industry category	Comment
Bringelly Road, Kingswood	Kingswood Medical Imaging Kingswood Medical Centre Kingswood Family Dental Centre Andrew Mizzi Optometrist	Medical and other health care services (medical services; pathology and diagnostic imaging services; allied health	These businesses are located within the one complex near the intersection of Bringelly Road and The Northern Road. The complex includes off-street parking for up

Locality	Business	Industry category	Comment
	In 2 Health Pharmacy	services) Other store-based retailing (pharmaceutical)	to about 50 cars, with access from Bringelly Road.
Aspen Street, South Penrith	Pioneer Tavern Dan Murphy's	Food and beverage services (pubs, taverns and bars) Food retailing (liquor retailing)	These businesses are located on adjacent properties at Aspen Street. Each provides for off-street parking, including for up to about 30 cars at John Cootes Furniture Warehouse and KFC; and up to about 100 cars at the Pioneer Tavern/ Dan Murphy's. Aspen Street is a two way street, connecting The Northern Road at the southern end with Maxwell Street at the northern end. Access to Aspen Street from The Northern Road is left-in/ left-out only. Access at Maxwell Street is via a roundabout, which provides for all movements.
	7-Eleven	Fuel retailing	
	John Cootes Furniture Warehouse	Other store-based retailing (furniture, floor coverings, houseware and textile goods retailing)	
	Kentucky Fried Chicken (KFC)	Food and beverage services (takeaway food services)	
Corner The Northern Road and Castle Road, Orchard Hills	Flower Power Garden Centre Penrith	Other store based retailing (garden supplies retailing)	The Flower Power Garden Centre Penrith was established in 2010 on the site of the former Garden Barn Penrith. The centre is one of 10 Flower Power Centres across the greater Sydney area. The centre provides off-street parking for up to about 50 cars, with access from Castle Road. The Castle Road/ The Northern Road intersection currently allows all movements.
The Northern Road, Orchard Hills	Orchard Hills Farm Fresh	Food retailing (fruit and vegetable retailing)	The business is located on eastern side of The Northern Road, north of Frogmore Road. The business provides off-street parking for up to about 20 cars, with direct left-in/ left-out access from The Northern Road.
The Northern Road, Orchard Hills	Vic's Produce and Pet Centre	Other store based retailing	The business has been operating for over 10 years and provides a range of pet, gardening and rural supplies. The business provides off-street parking for up to about 20 cars, with direct left-in/ left-out access from The Northern Road.
The Northern Road, South Penrith	Penrith Golf and Recreation Club	Sport and recreation activities (sports and physical recreation activities)	An 18-hole private golf course. The clubhouse and off-street car park is located near to The Northern Road boundary. The car park provides parking for more than 50 vehicles. Access to the clubhouse and car park is via left-in access only and left and right out access.
Wentworth Road, Orchard Hills	Orchard Hills Veterinary Hospital	Professional, scientific and technical services (except computer system design and related services (veterinary services)	Provides pet care including health, surgical, and boarding services.



JACOBS NSW SPATIAL - GIS MAP file - I036100_TNR3N_REF_F003_Socio_Business_03v1 | 25/08/2016

Legend

- The Northern Road Upgrade between Glenmore Parkway and Jamison Road
- The Northern Road
- Proposal area
- Education
- Commercial
- Community
- Recreational

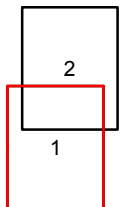
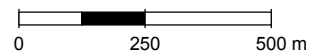


Figure 4-5 | Businesses and community uses near the proposal



JACOBS NSW SPATIAL - GIS MAP file - IA086100_TNR3N_REF_F003_Socio_Business_rv1 | 28/08/2016

Legend

- The Northern Road Upgrade between Glenmore Parkway and Jamison Road
- Proposal area
- The Northern Road
- Education
- Health care
- Commercial
- Community
- Recreational

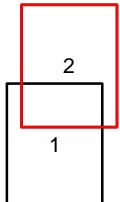
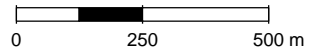


Figure 4-5 | Businesses and community uses near the proposal

4.4 Community values

Community values are values held as important to residents for quality of life and well-being. Local amenity and character in the study area is characterised by a mix of urban and rural land uses including:

- Established, urban residential areas at Kingswood, Werrington, Penrith, South Penrith, and Jamisontown, offering a diversity of housing types and densities.
- More recently developed and developing residential estates at Glenmore Park, which offer a range of urban residential uses and facilities, as well as open space, recreation, and conservation areas.
- Rural and rural residential uses at Orchard Hills, Luddenham, Mulgoa and Regentville, comprising a range of agricultural pursuits including market gardens, hobby farms, poultry farms and fruit growing.
- Commercial and industrial areas, focused on the Penrith CBD, and Penrith, Jamisontown and Kingswood.
- Major community facilities, including major hospitals, universities and tertiary education facilities, and regional and state level sport and recreation uses.

The study area's rural uses and landscapes are important to the character and identity of the study area, while the rural amenity and lifestyles are valued by communities. Agriculture, including poultry farms, orchards, market gardens and horse breeding, is a key contributor to Penrith's economy. Hobby farms and rural residential uses offer local residents lifestyle options that provide the 'country feel' of rural areas, within access to services and facilities in urban areas.

Protection and conservation of the environment, biodiversity and natural assets such as rivers, creeks, and bushland areas is also important to communities in the study area, as is protection and respect of the area's heritage values. Consultation for the proposal identified the need to give consideration to The Cumberland Conservation Corridor and Aboriginal heritage needs. Community concerns relating to potential changes in air quality and noise levels and impacts on non-Aboriginal heritage were also raised.

Maintaining high levels of access and connectivity is valued by communities, with community members identifying issues around traffic flow and congestion, maintenance of local roads to cope with increased traffic and ensuring infrastructure keeps up with the growth community and the airport as being key issues during consultation on the Penrith Community Plan (Penrith City Council, 2013). Support for improved road and public transport access was also reflected in consultation for this proposal, along with the need for improved cycling and pedestrian access. Consultation for the proposal also identified access for people with disability as important, with the need to ensure sufficient time is allowed for people with disability with crossing roads raised as an issue. This was also raised as a key issue in consultation on the Penrith Community Plan (Penrith City Council, 2013).

The importance of a balanced local economy, local employment and creating jobs to keep the community working locally were identified through previous planning and consultation by Penrith Council as key issues in planning for the future. Securing infrastructure that improves economic opportunities for existing and new businesses and the efficient movement of freight are important to building a strong economy (Penrith City Council, 2013).

4.5 Social infrastructure

The study area accommodates a wide range of community services and facilities that cater for the needs of both local and regional communities. This includes education facilities; health, medical and emergency services; sport, recreation and leisure facilities; and community and cultural facilities.

4.5.1 Regional social infrastructure

A number of major community facilities and services are located within the study area that cater for communities in the study area as well as in the broader western Sydney region and beyond. These include tertiary education facilities; major hospitals and health services; and sport and recreation facilities.

Key community facilities located in the broader study area are listed in Table 4.13. Facilities located near to the proposal are described in section 4.5.2.

Table 4.13 : Social infrastructure in the broader study area

Type of facility	Facility	Location
Tertiary education	University of Western Sydney – Kingswood Campus	Second Avenue, Kingswood
	University of Western Sydney – Werrington South (Campus)	Great Western Highway, Kingswood
	University of Western Sydney – Werrington North (Campus)	Great Western Highway, Kingswood
	TAFE Western Sydney Institute – Nepean College Kingswood Campus	Great Western Highway, Kingswood
	TAFE Western Sydney Institute – Nepean College Penrith Campus	Henry Street, Penrith
Primary and secondary education	St Dominics College	The Northern Road, Kingswood
	Penrith High School	High Street, Penrith
	Penrith South Public School	Jamison Road, Penrith
	Kingswood High School	Bringelly Road, Kingswood
	Jamison High School	Evan Street, South Penrith
	York Public School	Evan Street, South Penrith
	Mary Mackillop Primary School	Fragar Road, South Penrith
	Orchard Hills Public School	Kingswood Road, Orchard Hills
	Surveyors Creek Public School	St Andrews Drive, Glenmore Park
	Penrith Anglican College	Wentworth Road, Orchard Hills
Health, medical and emergency services	Nepean Private Hospital	Barber Avenue, Kingswood
	Nepean Hospital	Derby Street, Kingswood
	Nepean Cancer Care Centre	Great Western Highway, Kingswood
Sport, recreation and leisure facilities	Penrith Lakes Regional Park (including Sydney International Regatta Centre and Penrith Whitewater Stadium)	Castlereagh Road, Castlereagh
	Nepean Aquatic Centre	Castlereagh Road, Castlereagh
	Wianamatta Regional Park	Dunheved Road, Werrington Country
	Penrith Showground	Station Street, Penrith
	Penrith Park (including Penrith (Pepper) Stadium, and Howell Oval)	Mulgoa Road, Penrith
	Jamison Park	Jamison Road, South Penrith
Surveyors Creek Softball Facility	Garswood Road, Glenmore Park	
Other community facilities	Orchard Hills Masonic Centre	Homestead Road, Orchard Hills

In addition to the major facilities, the study area also includes a number of child care facilities; community health and support services; cultural facilities such as museums and churches; and local parks, open space and recreation areas.

4.5.2 Social infrastructure near the proposal

A number of community facilities and services are located next to the proposal that may be subject to direct or indirect impacts from the construction and/ or operation of the proposal. Social infrastructure near the proposal is described in Table 4.14. These are shown in Figure 4.5.

Table 4.14 : Social infrastructure near the proposal

Facility type	Facility	Location	Description
Education facilities	Kingswood South Public School	Smith Street, Kingswood	The school offers primary education for students in preschool to Year 6. In 2015, the school had an enrolment of 302 students (My School, 2016a)
	Montgrove College	Bringelly Road, Kingswood	The school offers secondary education for students in Year 7 to Year 12. In 2015, the school had an enrolment of 719 students (My School, 2016b).
	Penrith Christian School	Simeon Road, Orchard Hills	The school offers primary and secondary education for students in preschool to Year 12. In 2015, the school had an enrolment of 710 students (My School, 2016c).
	Penrith Anglican College	Wentworth Road, Orchard Hills	The school offers primary and secondary education for students in Kindergarten to Year 12. In 2015, the school had an enrolment of 1,236 students (My School, 2016d).
Health, medical and emergency services	The Medical Clinic	Jamison Road, South Penrith	Provides general practice services and some allied health services.
	Medical centre (various facilities)	Bringelly Road, Kingswood	A range of separate facilities are located at the property, including <ul style="list-style-type: none"> • Kingswood Medical Imaging • Kingswood Medical Centre • Kingswood Family Dental Centre • Andrew Mizzi Optometrist
Sport, recreation and leisure facilities	Mazepa Avenue and Hilliger Road Reserve	Mazepa Avenue, South Penrith	Park provides informal recreation uses, including playground facilities and open space area.
	Open space	Oag Crescent	Park provides informal recreation uses, including playground facilities and open space area. The playground facilities are generally in poor condition and appear to be underused.
	Rotary Park	Corner Maxwell Street and The Northern Road, South Penrith.	The park comprises 1.2 hectares of open space, with a number of scattered established trees. The park provides informal recreation uses (for example, walking) and landscape amenity values. The park does not include any infrastructure such as seating or playground equipment.
	Kingswood Lions Park	Corner Bringelly Road and Maxwell Street, South Penrith	The park comprises about 0.5 hectares of open space, with circle of established trees around the perimeter of the park. The park provides informal recreation uses (for example, walking) and landscape amenity values. The park does not include any infrastructure such as seating or playground equipment.
	Penrith Golf and Recreation Club	The Northern Road, South Penrith	An 18-hole private golf course. The clubhouse is located near to The Northern Road boundary. Access to the clubhouse is via left-in access only and left and right out access.

Facility type	Facility	Location	Description
Cultural facilities	Nepean Baptist Church	Bringelly Road, Penrith	The church provides church services on Sunday mornings and evenings, Sunday school, youth group on Friday evenings, and Bible study and prayer meetings on Wednesday evenings.
	Image Nations Church	Corner of M4 Western Motorway and The Northern Road	The church provides services on Sunday mornings and evenings. The church also offers a range of other services, such as connect groups, young adults groups, young families groups, and deaf ministry.
	Jehovah's Witnesses Kingdom Hall – Cambridge Park	Homestead Road, Orchard Hills	The Kingdom Hall is located at the corner of The Northern Road and Homestead Road. Access to the property is provided from Homestead Road, with car parking located immediately west of the building. Meetings are conducted weekly on Wednesday evenings and Sunday mornings.

4.6 Transport and access

4.6.1 Transport infrastructure and facilities

The study area is serviced by a range of transport infrastructure and facilities, including major roads, public transport and active transport.

Roads

The Northern Road is a key north-south connection, linking Richmond Road and South Windsor in the north with Camden Valley Way at Narellan in the south. The road provides an important radial connection across western Sydney for residents, business and industry.

Locally, The Northern Road provides access to residential, rural and commercial properties along The Northern Road and in surrounding areas. Right turn access is currently provided for to/ from properties fronting The Northern Road, from just north of Frogmore Road at Orchard Hills. Right turn access is also provided for at intersections with The Northern Road.

Other key roads servicing the study area include:

- Bringelly Road, which is a north-south corridor connecting the Great Western Highway at Kingswood with The Northern Road and Maxwell Street at Bringelly, providing access to residential areas and community facilities
- Mulgoa Road, which is a north-south route located west of The Northern Road and connecting High Street at Penrith with Park Road at Wallacia
- Great Western Highway, which is an east-west route linking Church Street at Parramatta to the M4 Western Motorway at Emu Plains and beyond to the Blue Mountains
- The M4 Western Motorway, which connects the Blue Mountains with Parramatta Road at Strathfield, providing an important connection between the Sydney CBD and western Sydney for residents, business and industry.

Public transport

Two bus services currently operate along The Northern Road through the proposal area. These include:

- Route 789, which connects Penrith to Luddenham
- Route 794, connecting Penrith to Glenmore Park via The Northern Road.

Two other bus services currently cross The Northern Road, including:

- Route 770, connecting Penrith to Mt Druitt via Claremont Meadows, St Marys and Colyton via Jamison Road
- Route 781, connecting Penrith to St Marys via Glenmore Park, Orchard Hills and Claremont Meadows, via Glenmore Parkway/ Wentworth Road.

A number of bus stops are located along The Northern Road between Glenmore Parkway and Jamison Road.

The Western rail line crosses under The Northern Road to the north of the proposal. The rail line connects central Sydney to Emu Plains and further to the Blue Mountains. Stations are located at Kingswood and Penrith.

Active transport

Existing pedestrian and cyclist facilities along The Northern Road are limited.

Between Glenmore Parkway and the M4 Western Motorway, there is a short, isolated section of road shoulder along The Northern Road that is marked for cycle use. North of the M4 Western Motorway, there are currently no pedestrian or cycle facilities along The Northern Road to Maxwell Street/ Bringelly Road. A continuous footpath is provided along both sides of The Northern Road north of Maxwell Street/ Bringelly Road to Jamison Road and beyond.

Pedestrian crossings of The Northern Road are generally limited to signalised intersections at:

- Maxwell Street/ Bringelly Road (northern side)
- Smith Street (northern and southern side)
- Jamison Road (northern side).

In relation to local roads that intersect with the proposal corridor, formal pedestrian facilities are located on:

- Jamison Road, including both east and west of The Northern Road
- Smith Street, including to the east and west (south side only) of The Northern Road
- Bringelly Road and Maxwell Street
- Tukara Road (northern side)
- Garswood Road (northern side)
- Glenmore Parkway, including for a short distance on the northern side, before crossing to the southern side.

No formal cycling facilities are located on the local roads intersecting with the proposal corridor.

4.6.2 Journey to work

Table 4.15 shows information on travel to work for residents in the study area in 2011.

Car travel was the predominant mode of travel to work for residents in the study area, with about 71.8 per cent of people aged 15 years or over using the car for all or part of their journey to work. This was above the NSW average (64.1 per cent), but below the average for the Penrith LGA. Within the study area, Glenmore Park-Regentville had the highest proportion of residents who travelled to work by car. The Penrith SA2 was the only area with proportions of car travel below the NSW average.

Public transport was used for travel to work by about 11.3 per cent of people aged 15 years or over. This was below the NSW average and is likely to reflect the limited public transport access in parts of the study area (for example, Glenmore Park-Regentville, and Mulgoa-Luddenham-Orchard Hills). The Penrith and Kingswood-Werrington SA2s had relatively high proportions of public transport use. This is likely to reflect the presence of train stations in these areas, with both of these areas having proportions of train commuters above the NSW average.

About 2.5 per cent of people in the study area aged 15 years or over walked or cycled to work, compared to 4.8 per cent in NSW. The Penrith SA2 was the only SA2 with levels of walking and cycling above the NSW average, which is likely to reflect the proximity of this area to employment within the Penrith CBD. Walking accounted for the majority of these trips within the Penrith SA2.

The study area generally had relatively low proportions of people who worked from home, with the Mulgoa-Luddenham-Orchard Hills SA2 the only area with proportions of this group about the NSW average. This may reflect the higher proportion of agricultural businesses in this area (refer to section 4.3.2).

Table 4.15 : Travel to work, 2011 (%)

Method of travel	Mulgoa-Luddenham-Orchard Hills SA2	Glenmore Park-Regentville SA2	Jamistown-South Penrith SA2	Kingswood-Werrington SA2	Penrith SA2	Study area	Penrith LGA	NSW
One method:								
Train only	1.5	3.7	4.4	10.7	9.5	6.0	5.4	6.2
Bus only	0.5	0.7	0.8	1.0	1.0	0.8	0.8	3.7
Car only (as driver or passenger)	69.7	74.2	70.9	65.6	60.8	69.2	70.2	62.6
Other motor vehicle only	4.9	1.6	2.6	1.6	1.4	2.1	2.5	1.9
Bicycle only	0.2	0.2	0.4	0.4	0.6	0.4	0.3	0.7
Walked only	2.0	0.8	1.6	2.2	5.6	2.1	1.6	4.1
Other (one method)	0.5	0.3	0.5	0.5	0.8	0.5	0.5	1.0
Two methods:								
Train and car (as driver or passenger)	1.9	3.2	2.3	1.9	2.2	2.4	2.4	1.2
Train and one other method	0.1	1.0	1.5	1.7	2.2	1.4	1.4	1.6
Bus and car (as driver or passenger)	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.3
Bus and one other method	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Other two methods	0.4	0.4	0.7	0.4	0.4	0.5	0.4	0.5
Three methods:								
Train and two other methods	0.3	0.5	0.6	0.6	0.6	0.5	0.5	0.4
Bus and two other methods (excl train)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other three methods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Worked at home	7.1	2.9	2.5	1.8	2.0	2.8	2.8	4.6
Did not go to work	8.5	9.2	9.7	9.9	11.0	9.6	9.4	9.5
Method of travel not stated	2.3	1.0	1.3	1.5	1.9	1.4	1.7	1.5
Total	3,336	11,298	8,419	7,859	5,138	36,050	87,227	3,138,330

5. Impact assessment

This section provides an assessment of potential impacts on the socio-economic environment in the study area from the construction and operation of the proposal.

5.1 Property impacts

5.1.1 Property acquisition

The proposal would require the strip acquisition of properties to allow:

- Widening of The Northern Road to eight lanes
- Upgrade of intersections
- Widening of local roads
- Construction of local access roads.

The proposal would also involve temporary leases over some properties for construction ancillary facilities such as compounds.

In total, about 44 properties would be impacted by partial acquisition or temporary leases for the proposal, including privately owned land and land owned by Penrith City Council. The majority of land affected by partial acquisition or temporary leases comprises residential uses, including rural residential uses. Other properties subject to partial acquisition or lease would include:

- Commercial and business uses, being mainly retail uses
- Undeveloped open space areas adjoining the road reserve (vacant land)
- Community uses, including open space, recreation, education and churches
- Site of the Telstra Orchard Hills telephone exchange.

Generally, properties affected by property acquisition would be partially acquired by Roads and Maritime where only part of the property would be impacted by the proposal.

Impacts of property acquisition on local businesses are discussed in section 5.2.1, while impacts on community uses are discussed in section 5.3.2.

Details of properties to be partially acquired or leased for the proposal are outlined in Table 5.1. The location of properties subject to partial acquisition and/or temporary leases is shown in Figure 5.1, including the associated Area ID number.

Table 5.1 : Summary of property acquisitions and leases

Area ID	Description	Total area (m²)	Acquisition type	Lot and DP	Land use zone (LEP)
1	Private property	3030	Partial	Lot 1 DP 711076	RU4 Primary Production Small Lots
2A	Private property	3420	Partial	Lot 2 DP 711076	RU4 Primary Production Small Lots
2B	Private property	16050	Partial (Lease)	Lot 2 DP 711076	RU4 Primary Production Small Lots
3	Private property	3330	Partial	Lot 3 DP 711076	RU4 Primary Production Small Lots

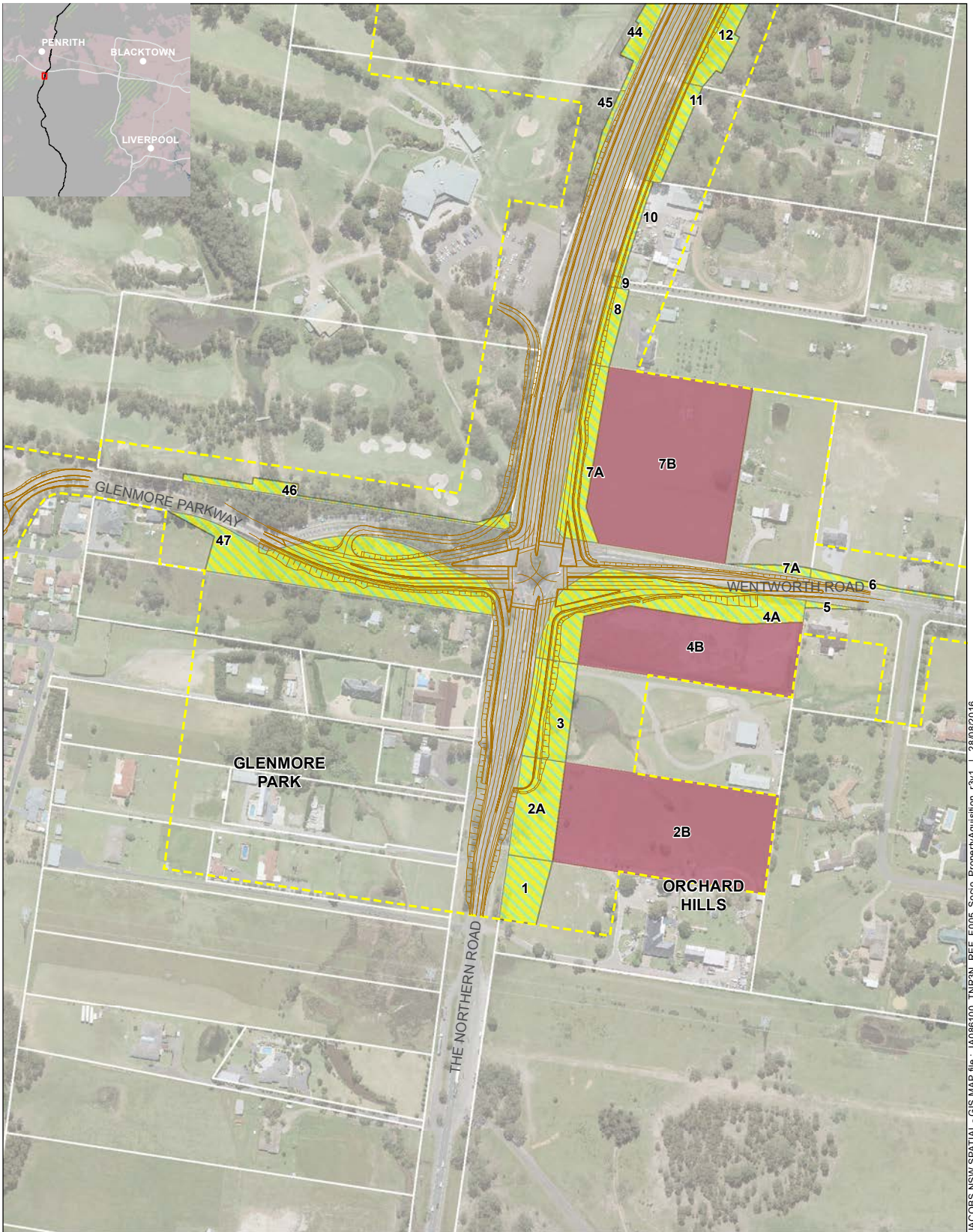
Area ID	Description	Total area (m²)	Acquisition type	Lot and DP	Land use zone (LEP)
4A	Private property	7870	Partial	Lot 40 DP 853672	RU4 Primary Production Small Lots
4B	Private property	11120	Total (Lease)	Lot 40 DP 853672	RU4 Primary Production Small Lots
5	Private property	190	Partial	Lot 1 DP 803128	RU4 Primary Production Small Lots
6	Private property (Orchard Hills Veterinary Hospital)	570	Partial	Lot 6 DP 548308	RU4 Primary Production Small Lots
7A	Private property	3580	Partial	Lot 5 DP 548308	RU4 Primary Production Small Lots
7B	Private property	19750	Total (Lease)	Lot 5 DP548308	RU4 Primary Production Small Lots
8	Private property	1330	Partial	Lot 5 DP 540425	RU4 Primary Production Small Lots
9	Private property	110	Partial	Lot 5231 DP 1013008	RU4 Primary Production Small Lots
10	Private property (Vic's Produce and Pet Centre)	800	Partial	Lot 5232 DP 1013008	RU4 Primary Production Small Lots
11	Private property	1620	Partial	Lot 2 DP 550005	RU4 Primary Production Small Lots
12	Private property	2770	Partial	Lot 3 DP 550005	RU4 Primary Production Small Lots
13	Private property (Jehovah's Witnesses)	5510	Partial	Lot 1 DP 543975	RU4 Primary Production Small Lots
14	Private property	220	Partial	Lot 55 DP 850645	RU4 Primary Production Small Lots
15A	Private property	9800	Partial	Lot 27 DP 238741	RU4 Primary Production Small Lots
15B	Private property	11700	Total (Lease)	Lot 27 DP238741	RU4 Primary Production Small Lots
16	Private property	1090	Partial	Lot 2 DP 238339	RU4 Primary Production Small Lots
17	Private property	720	Partial	Lot 3 DP 238339	RU4 Primary Production Small Lots
18A	Private property (Penrith Christian School and Imagine Nations Church)	14000	Partial	Lot 11 DP 831409	RU4 Primary Production Small Lots
18B	Private property (Penrith Christian School and Imagine Nations Church)	5955	Partial (Lease)	Lot 11 DP831409	RU4 Primary Production Small Lots
19	Private property (Penrith Christian School and Imagine Nations Church)	1145	Partial	Lot 121 DP 1135914	RU4 Primary Production Small Lots

Area ID	Description	Total area (m²)	Acquisition type	Lot and DP	Land use zone (LEP)
20A	Private property (Penrith Christian School and Imagine Nations Church)	3630	Partial	Lot 13 DP 831409	RU4 Primary Production Small Lots
20B	Private property (Penrith Christian School and Imagine Nations Church)	5590	Partial (Lease)	Lot 13 DP831409	RU4 Primary Production Small Lots
21	Private property (Orchard Hills Farm Fresh)	1440	Partial	Lot 1 DP 218571	RU4 Primary Production Small Lots
22	Private Property	1080	Partial	Lot 2 DP 218571	RU4 Primary Production Small Lots
23	Private Property	470	Partial	Lot 2 DP 602150	RU4 Primary Production Small Lots
24	Private property (Telstra)	440	Partial	Lot 1 DP 602150	RU4 Primary Production Small Lots
25	Private Property	1530	Partial	Lot 4 DP 218571	RU4 Primary Production Small Lots
26A	Private Property	830	Partial	Lot 19 DP 1028818	RU4 Primary Production Small Lots
26B	Private Property	3210	Total (Lease)	Lot 19 DP1028818	RU4 Primary Production Small Lots
27	Private Property	580	Partial	Lot 17 DP 1028818	RU4 Primary Production Small Lots
28	Private Property	590	Partial	Lot 16 DP 1028818	RU4 Primary Production Small Lots
29	Private Property	380	Partial	Lot 15 DP 1028818	RU4 Primary Production Small Lots
30	Private Property	220	Partial	Lot 41 DP 1037264	RU4 Primary Production Small Lots
31A	Council land	2560	Partial	Lot 26 DP 247948	RE1 Public Recreation
31B	Council land – Kingswood Lions Park	3400	Total (Lease)	Lot 26 DP247948	RE1 Public Recreation
32	Place of public worship (Nepean Baptist Church)	55	Partial	Lot27 DP 250337	R2 Low Density Residential
33	Council land – Oag Crescent Reserve	2460	Total	Lot 220 DP 260512	RE1 Public Recreation
34	Council Land	1100	Total (Lease)	Lot 11 DP220581	RE1 Public Recreation
35	Council Land	1145	Total (Lease)	Lot 12 DP220581	RE1 Public Recreation
36	Council Land – Mazepa Avenue and Hilliger Road Reserve	7190	Partial (Lease)	Lot 10 DP 236368	RE1 Public Recreation
37A	Council land – Rotary Park	10000	Partial	Lot 11	RE1 Public Recreation

Area ID	Description	Total area (m²)	Acquisition type	Lot and DP	Land use zone (LEP)
				DP 236368	
37B	Council land – Rotary Park	2640	Total (Lease)	Lot 11 DP236368	RE1 Public Recreation
38	Council land – Maxwell Street (road reserve)	4540	Partial	Lot 131 DP 258807	R2 Low Density Residential
39	Council land – Aspen Street (road reserve)	2420	Partial	Lot 1 DP 264332	RE1 Public Recreation
40	Private property (KFC)	605	Partial	Lot 8 DP 264332	B6 Enterprise Corridor
41	Private Property	580	Partial	Lot 262 DP 869597	E4 Environmental Living
42	Private Property	680	Partial	Lot 261 DP 869597	E4 Environmental Living
43	Private property (Penrith Golf and Recreation Club)	365	Partial	Lot 14 DP 128940	RE2 Private Recreation
44	Private property (Penrith Golf and Recreation Club)	1580	Partial	Lot 15 DP 128940	RE2 Private Recreation
45	Private property (Penrith Golf and Recreation Club)	405	Partial	Lot 1617 DP 871803	RE2 Private Recreation
46	Private property (Penrith Golf and Recreation Club)	1440	Partial	Lot 18 DP 128940	RE2 Private Recreation
47	Private property (Penrith Golf and Recreation Club)	10340	Partial	Lot 8299 DP 1003801	E4 Environmental Living






Potential impacts of partial property acquisition on local businesses are described in section 5.2.1, while impacts on community uses are described in section 5.3.1.

Partial acquisition of the property accommodating the Telstra Orchard Hills telephone exchange at 1814 The Northern Road would impact on the landscape area fronting The Northern Road and would not impact on the exchange building. The proposal is not expected to impact on the operation of the exchange. Consultation with Telstra would be undertaken prior to construction.



JACOBS NSW SPATIAL - GIS MAP file : IA086100_TNR3N_REF_F005_Socio_PropertyAcquisition_rv1 | 28/08/2016

Legend

- | | | | |
|---|---|---|---------------------|
|  | The Northern Road Upgrade
between Glenmore Parkway and
Jamison Road |  | Partial acquisition |
|  | The Northern Road |  | Lease |
|  | Proposal area | | |

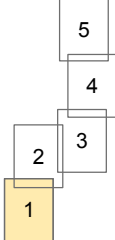
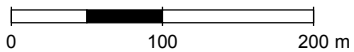
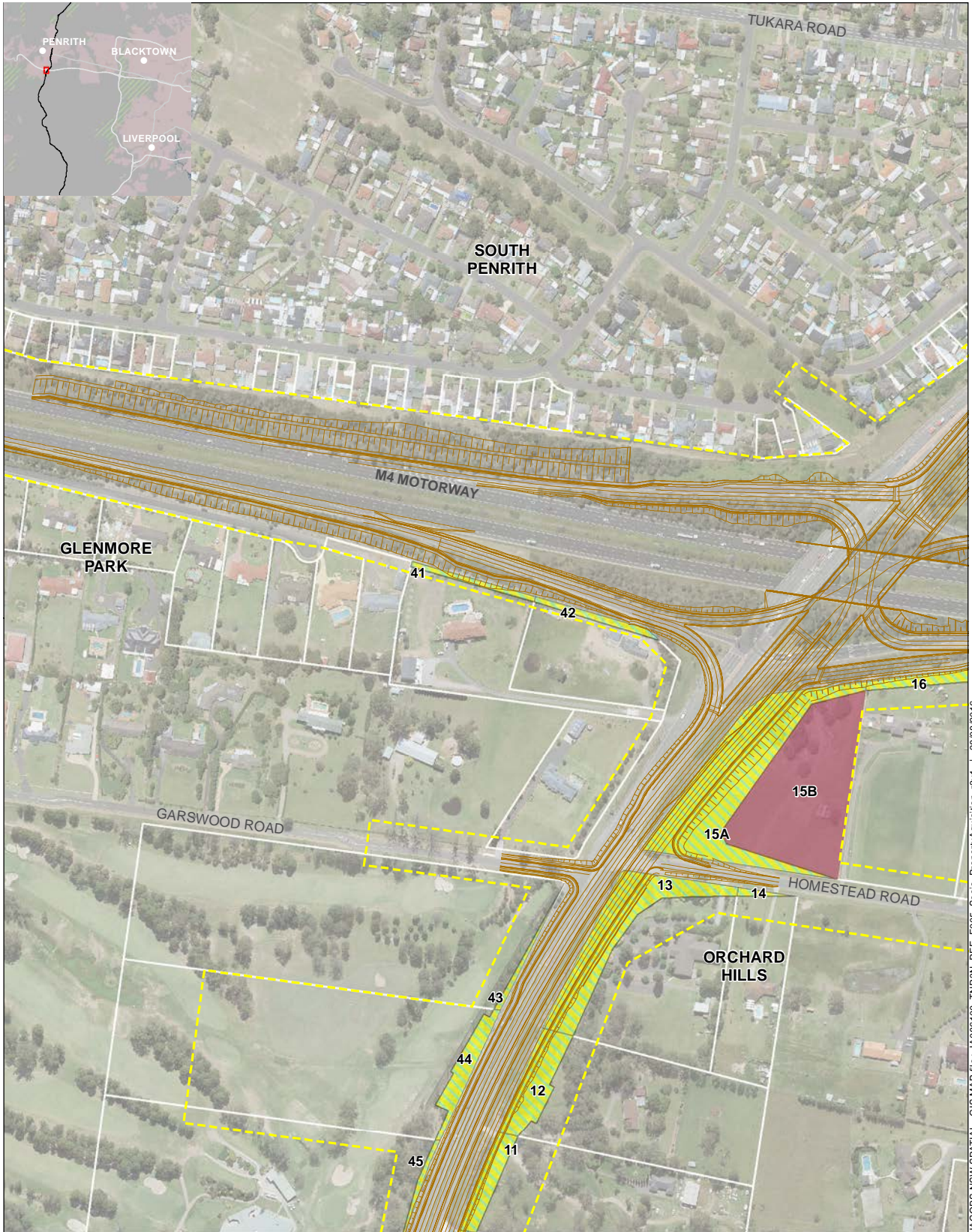







Figure 5-1 | Property acquisition and leasing



JACOBS NSW SPATIAL - GIS MAP file - IA086100_TNR3N_REF_F005_Socio_PropertyAcquisition_r3v1 | 28/09/2016

Legend

-  The Northern Road Upgrade between Glenmore Parkway and Jamison Road
-  The Northern Road
-  Proposal area
-  Partial acquisition
-  Lease

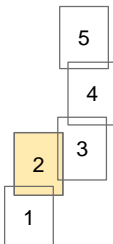
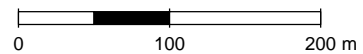


Figure 5-1 | Property acquisition and leasing



JACOBS NSW SPATIAL - GIS MAP file - IA086100_TNR3N_REF_F005_Socio_PropertyAcquisition_r3v1 | 28/09/2016

Legend

- The Northern Road Upgrade between Glenmore Parkway and Jamison Road
- The Northern Road
- Proposal area
- Acquisition type: Partial acquisition
- Acquisition type: Lease

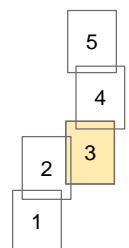
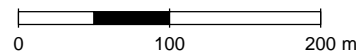


Figure 5-1 | Property acquisition and leasing



JACOBS NSW SPATIAL - GIS MAP file - IA086100_TNR3N_REF_F005_Socio_PropertyAcquisition_r3v1 | 28/09/2016

Legend

- The Northern Road Upgrade between Glenmore Parkway and Jamison Road
- The Northern Road
- Proposal area
- Partial acquisition
- Lease

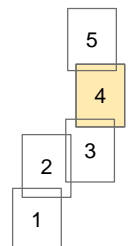
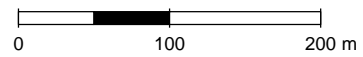
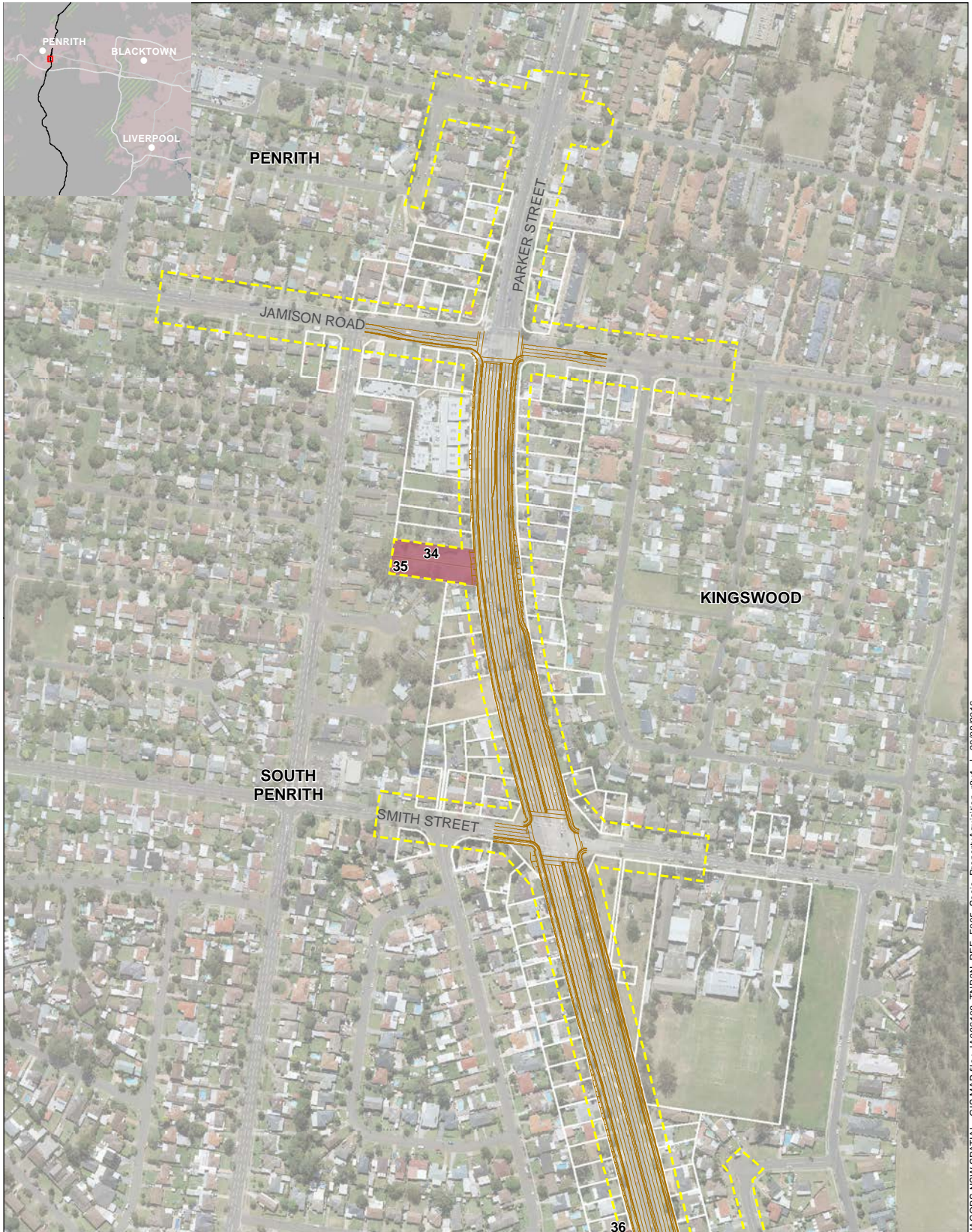







Figure 5-1 | Property acquisition and leasing



JACOBS NSW SPATIAL - GIS MAP file - IA086100_TNR3N_REF_F005_Socio_PropertyAcquisition_r3v1 | 28/09/2016

Legend

-  The Northern Road Upgrade between Glenmore Parkway and Jamison Road
-  The Northern Road
-  Proposal area
-  Partial acquisition
-  Lease

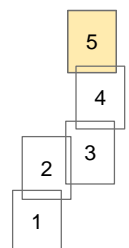
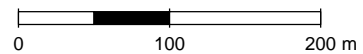


Figure 5-1 | Property acquisition and leasing

Temporary leases of land would also be required during construction to accommodate ancillary construction facilities such as worksites and laydown areas. These are listed in Table 5.1 and shown in Figure 5.1. Properties identified for temporary lease mainly comprises vacant land, road reserves and open space areas. Following construction, land occupied by construction work but not required for the ongoing operation of the proposal would be reinstated to its pre-construction use.

Impacts on the temporary use of land accommodating local business and community uses are discussed in section 5.2.1 and section 5.3.1 respectively.

Property required for the operation of the proposal would be acquired by Roads and Maritime in accordance with the provisions of the NSW *Property Acquisition (Just Terms Compensation) Act 1991*. Among other things, the Act provides the basis for assessing compensation.

Roads and Maritime has started consultation with potentially affected property owners about the acquisition process and potential adjustments required to properties for the proposal. Consultation will continue during the detailed design and construction phases of the proposal.

5.1.2 Impacts of property acquisition

Property acquisitions for the proposal would mostly involve partial acquisition of a strip of property frontage to allow for widening of the roadway and upgrade of intersections. This would impact on one building, being the shed housing the main retail facility at Orchard Hills Farm Fresh (1832-1838 The Northern Road). Roads and Maritime would consult with the owner/proprietor of this business regarding relocation of this shed to a suitable location on the same property. No other buildings would be impacted on the affected properties and no (other) relocation of residents or businesses would be required.

Uncertainty about potential property impacts and proposed changes and impacts of the proposal may cause stress and anxiety for some residents and business owners located near to the proposal. This may potentially impact on the health and well-being of some people. Concerns were raised during consultation for The Northern Road Upgrade in October 2015 about potential property impacts and uncertainty relating to property acquisition. Issues raised mainly related to uncertainty around property impacts and the need for acquisition; the land valuation process and the level of compensation for affected properties, and the property acquisition process.

The need for decisions about property acquisition to be made as quickly as possible was identified during consultation for the proposal. This would help to reduce uncertainty for some community members. Roads and Maritime are continuing to consult with property owners and other stakeholders who may be affected by property impacts through the detailed design of the proposal about specific property impacts, including the acquisition process and possible compensation.

Where partial acquisition of properties occurs, impacted infrastructure such as fencing and driveways would be rebuilt and relocated. This would be undertaken as part of the proposal. Consultation would be conducted with the property owner prior to the relocation of this infrastructure.

Partial acquisition of residential properties for the proposal would not require the relocation of residents. Consequently, the proposal is not anticipated to change, either directly or indirectly, population and demography within the study area or disrupt social networks and community relationships as a result of property acquisition.

5.1.3 Other property impacts

Consultation for the proposal identified a number of concerns for property owners and local communities about potential property impacts.

Concerns were raised around the proposal's impacts on property values. This included potential changes to property values along The Northern Road due to the road widening and changes to local amenity (for example, visual amenity, air and noise pollution) for those properties that have been partially acquired. Concerns around the proposal's effects on overall land values in the area were also raised.

Property values are driven by a range of factors. It is likely that external factors would influence property values more than perceived or actual impacts as a result of road upgrades. Potential impacts of the proposal associated with changes in amenity are discussed in section 5.4. More detailed assessment of impacts on visual amenity, air and noise are discussed in the respective impact assessment chapters of the REF, along with measures to avoid, minimise or manage potential impacts. Roads and Maritime will continue to consult with property owners and other stakeholders who may be affected by property impacts through the planning and development of the proposal. This would include discussion around property values.

Concerns about changes to property access for properties along The Northern Road were also identified during consultation for the proposal. These included:

- The need to consider grade changes between the road and property driveway as this currently causes issues for certain vehicle types accessing properties
- Concerns that removing the right turn into properties will prevent access to driveways, particularly for caravans and other large vehicles
- Use of the bus lane for property access.

Access arrangements to individual properties along The Northern Road would be finalised during detailed design for the proposal. This includes consideration of levels between the upgraded road and property driveways. Potential impacts associated with removing the right turn into properties and use of the bus lane are discussed in section 5.5.

5.2 Local business impacts

This section assesses potential impacts on local businesses in the study area. It describes potential impacts on businesses directly affected by property acquisition as well as other businesses in the study area that may experience changes due to such things as changes in local access or changes in local amenity. This assessment provides a qualitative assessment of potential impacts and does not quantify the impacts on the individual businesses or on levels of expenditure.

5.2.1 Directly affected businesses

Partial property acquisition and temporary leases of land for the proposal would impact on five properties that currently contain local businesses. These mainly include retail businesses, but also include a veterinary hospital. Partial property acquisition would also directly impact on the Penrith Golf and Recreation Club. These impacts are described in section 5.3.1.

Potential impacts on businesses affected by property acquisition would generally be associated with:

- Loss of land used for landscaping, storage and display of products or signage,
- Potential changes to the layout of outdoor areas, for example car parking and storage and display areas
- Changes in access due to restrictions of right turns to/ from The Northern Road, increasing travel distances for some customers, employees and deliveries.

Overall, impacts on businesses affected by property acquisition are not expected to impact on the ongoing operation of individual businesses. Businesses impacted by property acquisition would be compensated in accordance with Roads and Maritime policies. This would include compensation for any temporary disruption to business operations.

Table 5.2 summarises potential impacts on individual businesses located on properties that would be partially acquired for the proposal. The physical extent of impacts on individual businesses is shown in Figure 5.1

Table 5.2 : Impacts on directly affected businesses

Business	Location	Area ID	Summary of impact
Orchard Hills Veterinary Hospital	377 Wentworth Road, Orchard Hills	6	<p>Realignment of Wentworth Road for the upgrade of the Glenmore Parkway intersection would directly impact a property that accommodates the veterinary hospital. The veterinary hospital is located in the south east corner of a much larger property that also includes a dwelling. The area of the property accommodating the veterinary hospital would not be directly impacted. Access to the hospital would be maintained from Wentworth Road. Improvements to the intersection of Wentworth Road with The Northern Road would support improved access for customers of the veterinary hospital.</p> <p>The proposal would not impact on the ongoing operation of the business.</p>
Vic's Produce and Pet Centre	1974 The Northern Road, Orchard Hills	10	<p>Widening of The Northern Road would require the partial acquisition of a strip of this business' property along The Northern Road.</p> <p>The land to be acquired is currently used for the storage and display of rainwater tanks and other products. Access to, and use of this land by the business would no longer be available. Partial acquisition for the proposal would not impact on any buildings on the property.</p> <p>Acquisition for the proposal may require minor reconfiguration of on-site car parking, although this is not expected to impact on overall parking on the site.</p> <p>Existing access arrangements to/ from The Northern Road would be maintained.</p> <p>These impacts are not expected to impact on the ongoing operation of the business.</p>
Orchard Hills Farm Fresh	1832 The Northern Road, Orchard Hills	21	<p>Widening of The Northern Road would require the partial acquisition of a strip of this business' property along The Northern Road. This would impact on a shed that is currently used as retail shop, which would need to be demolished and where practicable, relocated within the property prior to construction. Property acquisition would also impact on landscaping areas (grass and trees), which are used for freestanding signage advertising produce sold at the business. This area would no longer be available for use by the business.</p> <p>Existing access arrangements to/ from The Northern Road would be maintained.</p> <p>Roads and Maritime has commenced consultation with potentially affected property owners about the acquisition process and will continue to consult with the business owner to identify measures to manage any disruptions to business operations and the ongoing operation of the business. As indicated previously, businesses impacted by property acquisition would be compensated in accordance with Roads and Maritime policies. This would include compensation for reasonable disturbance costs likely to arise (Roads and Maritime, 2014).</p> <p>Potential changes to business amenity, including for customers and staff may be experienced due to the removal of existing vegetation and relocation of the roadway. Changes in traffic noise are described in the noise chapter and technical report of this REF, along with proposed management measures.</p>
Flower Power Garden Centre Penrith	1794-1802 The Northern Road, Orchard Hills	N/A	<p>No acquisition is proposed at this property; however there would be changes to The Northern Road / Castle Road intersection which would restrict right turns to/from The Northern Road. This would require changes for some customers accessing the business. For example, customers currently turning right into Castle Road from The Northern Road would be required to turn left into Maxwell Street and make a u-turn or turn right into Frogmore Road and travel north via Kingswood Road. Customers currently turning right out of Castle Road would be required to travel to Frogmore Road and make a u-turn at the proposed roundabout on Frogmore Road.</p> <p>These changes would result in increases in travel distances of up to about 1.7 kilometres (or 3.4 minutes) for some customers. While the additional travel may be an inconvenience for some customers, any associated drop in customers is likely to be balanced by the projected increase in traffic volumes using The Northern Road and is not expected to impact on overall customer levels,</p> <p>Potential changes to business amenity, including for customers and staff may be experienced due to the relocation of the roadway. Changes in traffic noise are described in the noise chapter and technical report of this REF, along with proposed management measures.</p>

Business	Location	Area ID	Summary of impact
KFC	1 Aspen Street, South Penrith	40	<p>Widening of The Northern Road would require the partial acquisition of a small area of land at the corner of Aspen Street and The Northern Road.</p> <p>This area is currently used for advertising signage for the business. This would be relocated as part of the proposal prior to construction. Consultation would be conducted with the business owner prior to the relocation of this advertising signage. It is expected that this could be relocated close to its existing location.</p> <p>Existing access arrangements to the property from Aspen Street would be maintained.</p> <p>This impact is not expected to affect the ongoing operation of the business.</p>

Issues were raised by the community during consultation for the proposal about the availability of financial compensation where business operations become unviable due to property impacts. In particular, feedback identified concerns that partial acquisition of land may impact negatively on the operations of existing businesses. Roads and Maritime would continue to consult with business owners during the detailed design phase to inform the detailed design and any further management measures. As indicated in section 5.1.1, compensation for properties directly impacted by the proposal would be assessed in accordance with the NSW *Property Acquisition (Just Terms Compensation) Act 1991*.

5.2.2 Impacts on businesses near the proposal

Construction

During construction impacts on local businesses in the study area may result from:

- Increased expenditure by construction workers on local goods and services, resulting in beneficial impacts for local businesses
- Changes in local access to businesses, and traffic disruptions and delays due to construction activities
- Demand for construction worker parking near construction compounds and other work areas
- Increased noise, dust and construction traffic, impacting on business amenity at businesses near the proposal.

Compensation for businesses to cover loss of trade during construction was raised as a concern by some community members during consultation for the proposal. As indicated in section 5.1.1, compensation would be determined in accordance with the NSW *Property Acquisition (Just Terms Compensation) Act 1991*.

The construction phase is likely to have a positive effect for some local businesses through increased demand for local goods and services. This includes local shops and food outlets near construction work that are likely to benefit from increased business in response to day-to-day needs of construction workers. Businesses supplying goods and services to construction are also likely to experience benefits from increased construction activities locally.

Access to businesses near the proposal would be maintained during construction. Where temporary changes are required, these would be determined in consultation with individual business to ensure that potential impacts are appropriately managed. Further discussion on potential impacts on local access and connectivity during construction is provided in section 5.5.1.

A detailed assessment of potential impacts associated with construction traffic changes, demand for worker parking and impacts on business amenity is provided in the traffic, noise, and air quality chapters of this REF. Ongoing consultation with business owners and managers during construction would also be carried out to assist in managing potential impacts.

Operation

At a regional level, the proposal would have beneficial impacts on business and industry through improved access and connectivity to growth areas in western Sydney. In particular, The Northern Road Upgrade would improve travel times and reliability for freight and commercial vehicles, reducing transport costs.

Locally, the proposal would improve road safety and accessibility, supporting general improvements to local business and industry in or near to the study area. However, the proposal would require changes in access to some businesses in the study area. In particular, as indicated in section 5.5.2, some motorists may be required to travel further to access businesses near to the proposal. This was raised as a concern by some business owners during consultation for the proposal.

Access changes to businesses affected by property acquisition are described in Table 5.2. For most businesses in the broader study area, current access arrangements would be maintained during operation of the proposal. However, removal of right-turn access at Castle Road would increase travel distance for some customers, staff and delivery drivers by up to 1.7 km (or 3.4 minutes). While this additional travel may be an inconvenience for some customers, particularly those associated with 'passing' traffic, any associated drop in customers is likely to be balanced by the projected increase in traffic using The Northern Road and is not expected to impact on overall customer levels for local businesses.

Ensuring local communities and business customers are aware of changes in access to local businesses would be important in minimising potential business impacts associated with local road changes, particularly during the initial operational phase. This may include measures such as the use of appropriate road signage, notifications or advertising (for example, through business websites or other publications) prior to and following the start of access changes. These measures would be implemented by a combination of Roads and Maritime and local business owners. Mitigation measures proposed by Roads and Maritime to manage potential impacts associated with local road changes are provided in section 7. It is likely that any potential impacts on businesses associated with changes in customer access would reduce over time as customers and local and regional communities become familiar with the new access arrangements.

Some businesses near to the proposal may experience changes to business amenity from changes in traffic noise and visual values, including removal of existing vegetation in the road corridor. These impacts and possible management measures are discussed in the noise, visual amenity, urban design and landscaping chapters and technical reports of this REF.

Roads and Maritime would continue to consult with business owners and/ or managers near the proposal about business impacts and proposed management measures. This includes businesses at Castle Road such as the Flower Power Garden Centre Penrith as well as the group of businesses at Aspen Street.

5.3 Impacts on social infrastructure

5.3.1 Directly affected social infrastructure

Partial property acquisition and temporary leases of land for the proposal would impact seven properties that currently accommodate community uses. These include churches, open space and recreation areas, and education uses.

Potential impacts on community uses as a result of the proposal would generally be associated with:

- Partial permanent loss of land including areas used for recreation and landscaping
- Changes in access for users of community facilities due to turn restrictions, increasing travel distances for some customers
- Changes in amenity at some properties due to movement of the road boundary closer to the facility and removal of established trees and landscaping.

Overall, impacts on community uses are not expected to impact on the ongoing operation of individual facilities.

Table 5.3 summarises potential impacts on individual community uses located on properties that would be partially acquired or temporarily leased for the proposal. The physical extent of impacts on individual community facilities is shown on Figure 5.1.

Potential impacts of the proposal's construction and operation on amenity for users of these facilities and community uses in the study area more broadly are discussed in section 5.3.2.

Table 5.3 : Impacts on directly affected community uses

Community use	Location	Area ID	Summary of impact
Jehovah's Witness Kingdom Hall	328 Homestead Road, Orchard Hills	13	<p>Widening of The Northern Road and changes to the intersection of Homestead Road would require the strip acquisition of land accommodating the Jehovah's Witness Kingdom Hall at Homestead Road.</p> <p>Affected land is located along The Northern Road and Homestead Road frontage and includes grassed areas and trees that provide a landscaped screen between The Northern Road and the Hall. The acquisition would not impact on the car park or building.</p> <p>The proposal would require the removal of trees within the boundary of the Kingdom Hall site. The loss of these trees and landscaped buffer is likely to be a concern for users of the Kingdom Hall and would impact on the visual amenity and setting of the Hall. Removal of the trees would also reduce the visual screening of the roadway, increasing visibility of the traffic from the Hall and possibly increasing community perceptions about impacts of traffic noise.</p> <p>Following construction, new trees or landscaping within the property would be established in consultation with the Jehovah's Witnesses. Over time, this is likely to reduce the potential visual impacts of the road as the trees and landscaping become established. Roads and Maritime would continue to consult with the Jehovah's Witnesses to inform the detailed design and any further management measures.</p> <p>Access to the Hall would be maintained from Homestead Road, although changes to the Homestead Road/ The Northern Road intersection would restrict users of the hall from making right turn movements at Homestead Road. Access would be provided via the intersection at Wentworth Road and new extension to Cross Road. This would result in increases in travel distances of up to 2 kilometres (one way) for some motorists. Overall, it is considered that the impacts associated with the longer travel distances to some facilities (for example, the Jehovah's Witness Kingdom Hall) would be outweighed by the improved safety outcomes for motorists and users of these community facilities.</p>
Penrith Golf and Recreation Club	1939 The Northern Road, Glenmore Park	43, 44, 45, 46	<p>The proposal would require the strip acquisition of land within the Penrith Golf and Recreation Club for the upgrade of the intersection with Glenmore Parkway and Wentworth Road and widening of The Northern Road. The proposal would also include the provision of a new service road to service the golf course, accessed from the proposed single lane roundabout on Glenmore Parkway.</p> <p>The proposal is not expected to directly impact on any holes within the golf course. Roads and Maritime would consult with the golf club during detailed design to inform the detailed design and any further management measures.</p> <p>The new access to the golf course and club house from Glenmore Parkway would remove the existing right out movements from the golf course to The Northern Road. This would improve safety for members and visitors accessing the golf course, as well as for motorists on The Northern Road. This would increase the distance visitors would be required to travel by up to about one kilometre (1.9 minutes).</p> <p>The upgrade of the intersection and widening of The Northern Road would require the clearing of some trees within the road reserve and golf course along Glenmore Parkway and The Northern Road. The loss of these trees may be a concern for the golf course managers and its members, as well as some community members. The loss of these trees may also impact on the visual amenity of the golf course. Following construction, new landscaping would be established, which may assist in reducing any longer term impacts</p>

Community use	Location	Area ID	Summary of impact
Penrith Christian School and Imagine Nations Church	116-124 / 110 Frogmore Road, Orchard Hills	18, 19, 20	<p>on amenity for users of the golf course and local communities.</p> <p>Widening of The Northern Road and upgrade of the M4 Western Motorway interchange and The Northern Road/ Frogmore Road intersection, as well as the proposed new roundabout on Frogmore Road providing access to the property would require the strip acquisition of land along the M4 Western Motorway, The Northern Road and Frogmore Road.</p> <p>This land mainly includes grassed areas and trees next to the school playing fields.</p> <p>The proposal would require the clearing of some trees within the road reserve or within the school grounds along the school boundary with The Northern Road. The loss of these trees may temporarily impact on amenity of the school groups until new trees or landscaping becomes established following construction. No other trees within the school grounds are expected to be impacted by the proposal.</p> <p>During construction, a compound site would also be established on the school grounds, south-east of the intersection of The Northern Road and Frogmore Road. Access and use of the compound site would be arranged so as not to impede access and use of the school and church on this property, and to ensure the safety of school children and other users/passers-by. There would be some temporary noise, dust and visual impacts, however these would be mitigated through the implementation of relevant safeguards during construction. Following construction, this area would be rehabilitated and reinstated.</p> <p>Additionally the school playing fields would need to be moved to accommodate the proposal; however this would be subject to a separate assessment and consultation process to be undertaken by Roads and Maritime Services, impacts of which are not assessed as part of this report.</p>
Rotary Park	237 The Northern Road and Maxwell Street, Penrith	37	<p>The proposal would require the partial acquisition of the Council owned Rotary Park for the upgrade of the Maxwell Street intersection with The Northern Road, and upgrade of the roundabout at Aspen Street to a four-leg roundabout linking Maxwell Street to Hilliger Road. As indicated in section 4.5.2, the park provides informal recreation uses (for example, walking) and landscape amenity values. The park does not include any infrastructure such as seating or playground equipment.</p> <p>Acquisition for the proposal would impact on most of Rotary Park (about 10,000 m² out of about 1.2ha), although part of the area to be acquired would be for a grassed stormwater detention basin in the northern portion of the park. The area used for the detention basin would remain accessible for use as open space and informal recreation during operation and is not expected to impact on the overall use of the park in the longer term. The area of land that would be permanently lost to the roadway is mainly grassed area along the boundary of the park with The Northern Road and Maxwell Street and at the corner of Maxwell Street and Hilliger Road.</p> <p>Land would also be temporarily leased for a construction compound. The use of the park for construction would result in the temporary loss of access to, and use of, land within the construction footprint. This would temporarily disrupt the use of this land for informal recreation and may require some park users to travel further to access these facilities elsewhere. The nearest open space area is located about 500 m west of the park.</p> <p>Following construction, areas of the park that are not permanently lost to the roadway would be rehabilitated and reinstated as park and would be available for ongoing informal recreation uses.</p> <p>The proposal would require the clearing of some established trees within the park for construction and longer term operation of the proposal. These trees have not been identified as having heritage or biodiversity values, although the loss of these trees may be a concern for some community members and may temporarily impact on the amenity of the park until new landscaping becomes established.</p>

Community use	Location	Area ID	Summary of impact
Kingswood Lions Park	238 The Northern Road and Bringelly Road, Kingswood	31	<p>The proposal would require the partial acquisition of Kingswood Lions Park for the upgrade of the Bringelly Road/ The Northern Road intersection. As indicated in section 4.5.2, the park provides informal recreation uses (for example, walking) and landscape amenity values. The park does not include any infrastructure such as seating or playground equipment.</p> <p>Acquisition for the proposal would result in the permanent loss of about half of Kingswood Lions Park (about 2,560 m² out of about 5,000 m²). The affected land is mainly grassed area along The Northern Road and Bringelly Road. As indicated in section 4.5.2, this park is currently used for informal recreation.</p> <p>Additional land would also be temporarily leased for a construction compound. The use of the park for construction would result in the temporary loss of access to and use of land within the construction footprint. This would temporarily disrupt the use of this land for informal recreation. This may require some park users to travel further to access these facilities elsewhere. The nearest open space area is located about 600 m west of the park. This would require some park users to cross The Northern Road, which may impact on perceptions of safety for some park users. Land affected by construction and not required for operation, would be reinstated following construction. The proposal would require the clearing of established trees within the park for construction and longer term operation of the proposal. These trees have not been identified as having heritage or biodiversity values, although the loss of these trees may be a concern for some community members and may temporarily impact on the amenity of the park until new trees or landscaping becomes established.</p>
Nepean Baptist Church	236 The Northern Road and Bringelly Road, Kingswood	32	<p>Widening of The Northern Road would require the strip acquisition of a small area of land (about 55m²) within this property. The affected land is the western end of a pedestrian path, which generally runs at a right angle to The Northern Road. Any impacts on pedestrian access would be temporary and acquisition of this land would not affect the ongoing use or amenity of this community facility. Pedestrian access is also available from Bringelly Road. Informal access is also available through the adjoining Kingswood Lions Park.</p>
Oag Crescent Reserve	206a Parker Street, Kingswood	33	<p>As indicated in section 4.5.2, this park at Oag Crescent provides informal recreation uses, including playground facilities and open space areas,</p> <p>Open space at Oag Crescent would be used as a stormwater detention basin for the operation of the proposal. About 350 m³ of on-site detention storage is proposed at this location as an above ground basin within the reserve. The land used for the detention basin would continue to be available for use as open space during operation of the proposal and is not expected to impact on the overall use of the park in the longer term.</p> <p>During construction, the park would also be leased for use as a temporary construction compound. This would result in the temporary loss of access to and use of this area, including playground facilities during the construction period. As indicated in section 4.5.2, the playground facilities are in poor condition and appear to be underused, and the temporary loss of these facilities is not expected to impact on recreational values in the local area.</p> <p>The establishment of construction facilities may also require the clearing of some trees in the park, which may be of concern for some local residents. Following construction, the park would be rehabilitated and reinstated with new landscaping work to replace any trees or landscaping required to be cleared for construction activities.</p>
Mazepa Avenue and Hilliger Road Reserve	205A Parker Street, South Penrith	36	<p>The Mazepa Avenue and Hilliger Road Reserve would be leased for use during construction for a construction compound. As indicated in section 4.5.2, this park provides informal recreation uses, including playground facilities and open space areas. The extent of the temporary lease area excludes the playground area, which would remain available for public use during construction. The use of the park for construction would result in the temporary loss of access and use of the open space area of the park. Noise, dust and</p>

Community use	Location	Area ID	Summary of impact
			<p>traffic from construction activities may also adversely impact on amenity for users of the park area not required for construction. This is likely to temporarily impact on the potential use and enjoyment of the park for some users, and may deter them from using the park during construction. This may require some park users to travel further to access these facilities elsewhere. The nearest open space area is located about 700 m west of the park.</p> <p>The establishment of construction facilities may also require the clearing of some trees in the park along The Northern Road. The loss of these trees may be of concern for some residents and park users. Following construction, the park would be rehabilitated and reinstated with new planting and landscaping works to replace any trees or landscaping required to be cleared for construction activities.</p>

5.3.2 Impacts on social infrastructure in the study area

Construction

During construction, potential impacts on social infrastructure near the proposal may result from:

- Increased noise, dust and construction traffic, impacting on amenity for users and workers of community services and facilities
- Changes in local access and traffic disruptions and delays due to construction activities.

Impacts on amenity may be experienced by users of community services and facilities located close to construction work and compounds due to increased noise and dust from construction activities and increased traffic, including heavy vehicles.

As indicated in section 4.5.2, a number of schools are located near to the proposed work. Students, teachers and visitors at the schools may experience temporary amenity impacts due to increased noise and dust from construction activities. Amenity impacts on Kingswood South Public School, Montgrove College and Penrith Anglican College would generally be manageable, due to the extent of work in these areas and the distance between the work and the school buildings. Without management, noise and dust from construction activities associated with the construction of the M4 Western Motorway interchange and widening of The Northern Road may impact on amenity for students, teachers and visitors to Penrith Christian School and users of the Imagine Nations Church, which is also located within the school grounds. These effects would be more noticeable in outdoor teaching and recreation areas. Ongoing consultation would be undertaken with the school and church during the construction phase to manage potential impacts (refer to section 6). Further discussion on potential impacts associated with construction noise and dust is provided in the noise and air quality chapters and technical reports of this REF.

An increase in construction traffic including heavy vehicles near to schools may present possible safety risks for students and impact on community perceptions about safety for children, particularly during school drop-off and pick-up times. Traffic management measures would be implemented, which would help to minimise potential safety impacts for students. Possible measures could include limiting heavy vehicle access near schools during drop-off and pick-up times. Ongoing consultation with the schools and school communities would also be carried out during the detailed design and construction phases of the proposal to assist in managing potential impacts. Further discussion on potential noise, dust and traffic impacts is provided in the respective chapters and technical reports of this REF.

Without management, health care facilities near the proposal and cultural facilities such as the Jehovah's Witnesses Kingdom Hall at Orchard Hills and the Nepean Baptist Church at Bringelly Road, may also experience impacts on local amenity through increased noise, dust and construction traffic. Further information on potential impacts is discussed in the noise, air quality and traffic chapters and technical reports of this REF. Ongoing consultation with owners and managers of these facilities during construction would also be carried out to assist in managing potential impacts.

Operation

During operation, the proposal would improve access and connectivity to community services and facilities within or near to the study area through improved travel time savings and improved travel time reliability. This includes:

- Education uses such as the University of Western Sydney, TAFE Western Sydney Institute, and schools near the proposal including Kingswood High School, Montgrove College, Penrith Christian School and Penrith Anglican College
- Major medical and health care facilities, including hospitals and facilities at the Nepean Hospital campus
- Regional open space, sport and recreation uses
- Community support services and service organisations located in the Penrith CBD.

This would have beneficial impacts for local communities as well as communities across the broader western Sydney region.

Users of some social infrastructure located near to the proposal may experience impacts associated with changes in local access and amenity.

Access to social infrastructure near the proposal would be maintained during operation, although some changes to local access may be required for some users due to changes to existing intersections and establishment of a median along The Northern Road. These changes will restrict right turns into properties and at some intersections. Overall, this would provide safer access for motorists accessing community facilities near the proposal, but may require users of some facilities to drive longer distances to access some facilities.

Restrictions of right turn movements at some intersections would also require some motorists to use local roads to access properties. This may increase traffic volumes on local roads and near to some community facilities. For example, motorists accessing properties at Castle Road at Orchard Hills from the south would need to use Frogmore Road with connection to Castle Road via Kingswood Road. This may increase traffic volumes on Kingswood Road past the Orchard Hills Public School, which may present possible risks to school students. Changes to local traffic volumes are discussed in the traffic chapter of this REF.

Some facilities located near to the proposal may experience impacts on amenity from changes in traffic noise and changes to visual values, including removal of existing vegetation in the road corridor. These impacts and possible management measures are discussed in the noise and visual impact chapters and technical reports of this REF.

5.4 Impacts on community values

5.4.1 Construction

Construction of the proposal would impact positively on local employment through the creation of direct construction related employment on the proposal and indirect employment in businesses and industries that support the construction work.

Potential impacts on community values during construction may be experienced due to:

- Temporary changes in local amenity due to noise and dust from construction activities for residents, businesses and facilities near to construction worksites and work areas
- Temporary changes in local access and connectivity, including for motorists, public transport users, pedestrians and cyclists
- Changes in visual amenity due to the removal of established vegetation within construction areas.

Changes to amenity during construction may temporarily impact on the potential use and enjoyment of some properties closest to construction work, particularly of outdoor areas. This would include impacts from work

carried out outside of standard day-time work hours. Noise and lighting from this work may impact on the night-time amenity or sleeping patterns for some residents closest to the construction activities.

If unmanaged, noise, light spill, and dust from construction activities may impact on the health and wellbeing of some residents and occupants of buildings nearest to construction sites. In particular, the potential for dust from construction activities to impact on health of some sections of the community who may be more sensitive to changes in air quality (such as children or elderly people who suffer asthma or similar conditions), is likely to be of concern for some community members near to construction activities. This impact is most likely to occur where night-time work results in sleep disturbance over extended periods or where construction activities create extended periods of high noise or dust levels.

Further discussion about potential impacts on construction noise and air quality is provided in the respective chapters and technical reports of this REF. Impacts of construction traffic are also discussed in the traffic chapter and technical report of the REF.

The proposal would require the removal of some established vegetation within the road reserve and areas affected by construction activities. This may be a concern for some people and impact on community values relating to visual amenity. Following construction, areas impacted by construction work that are not required for permanent infrastructure would be rehabilitated, including with new trees and landscaping. Over time, this is likely to reduce the potential visual impacts for local communities. Further discussion about potential visual impacts is provided in the visual amenity chapter of the REF.

5.4.2 Operation

As indicated in section 4.4, maintaining high levels of access and connectivity is valued by communities in the study area, as is support for improved road and public transport access and safe access for people with disability. Overall, the proposal would support improved travel and accessibility to work, business and leisure activities in the study area and broader western Sydney region. At a regional level, improved access and more efficient travel is likely to provide benefits for community cohesion. Travel facilitates social interactions and economic transactions across the wider region. Where access on major routes is constrained, people avoid making trips that have unacceptable travel times. The proposal would assist in decreasing travel times for these trips, helping to facilitate community interaction.

In addition to improved access for private, commercial and freight vehicles, the proposal would support better access for public transport users, pedestrians and cyclists. This would have positive benefits around access to local employment, community services and facilities, and recreation.

The widening of The Northern Road may present a perceived barrier to local access and connectivity for some community members. In particular, changes to local access and increased width of crossing for pedestrians may discourage some people from making some local trips. The proposal would improve pedestrian crossings at intersections, providing safer access for pedestrians and cyclists across The Northern Road, and allowing better access between residential areas west of The Northern Road and community services and facilities to the east. Restrictions on turning movements would change access and impact people who travel certain routes, although this would be balanced by safer access for motorists and other road users.

Operation of the proposal is likely to change local amenity for some community members near to the proposal. Detailed discussion about potential impacts relating to changes in noise, air quality, traffic and visual amenity is provided in the respective chapters and technical reports of this REF.

5.5 Access and connectivity

5.5.1 Construction

During construction, potential impacts on local access and connectivity would generally relate to:

- Traffic delays and disruptions for some motorists on both regional and local road, including from the temporary closure of some traffic lanes near to the proposal

- Increased construction traffic on local roads, including heavy vehicles for the delivery of materials and equipment and construction worker vehicles, potentially impacting on road safety for motorists, pedestrians and cyclists
- Changes to road conditions, potentially impacting on road safety
- Potential disruption or changes to bus services, including the temporary relocation of some bus stops near to construction work for safety
- Changes to pedestrian and cycle access near to construction work, including temporary closure or changes to footpaths, resulting in possible disruptions or impacts on safety for users

Access to private properties next to the proposal is expected to be maintained during construction. Where temporary changes are required, suitable access arrangements would be implemented in consultation with affected property owners.

Potential impacts of construction traffic on community uses near the proposal are discussed in section 5.3.

A detailed assessment of potential construction traffic impacts on local access and connectivity is provided in the traffic chapter of the REF.

5.5.2 Operation

During operation, the proposal would improve regional access and connectivity for road users, through improved driving conditions, reduced travel times, improved connections to the regional road network and key growth areas, and improved road safety.

At a local level, the proposal would improve road safety in relation to property access and access for motorists to/ from surrounding areas. This would be achieved through such things as restrictions to right turns to/ from properties fronting The Northern Road and at some intersections, and the upgrade of some intersections to provide signals. These changes may require some motorists to travel further distances to access residential properties, businesses and other facilities near to the proposal. In particular, further travel distances may be required for some motorists accessing:

- Properties along The Northern Road where there is currently not a constructed median (for example, between just north of Frogmore Road and Castle Road; and north of Bringelly Road and Maxwell Street). Motorists accessing these properties would be required to use local streets to access all movement intersections at Frogmore Road, Bringelly Road/ Maxwell Street and Smith Street
- Residential properties, businesses and other facilities at Castle Road, with motorists required to use Kingswood Road and Caddens Road to access all movement intersections at Frogmore Road and Bringelly Road
- Residential properties, businesses and community facilities at Homestead Road, with motorists required to use the extended Cross Road to access the all movement intersection at Wentworth Road
- Businesses in Aspen Street, due to restrictions on right turn movements from Aspen Street to Maxwell Street. These restrictions would mainly impact motorists wanting to head south from Aspen Street, with these motorists required to travel westbound on Maxwell Street to U-turn at the roundabout at Fragar Road, to access the all movement intersection at Maxwell Street and The Northern Road.

Further discussion about potential impacts of access changes on specific businesses near the proposal are discussed in section 5.2.1, while impacts on specific community uses are discussed in section 5.3.2. Further discussion about traffic and noise impacts of these changes are provided in the respective chapters of this REF.

Concerns were raised by community members during consultation for the proposal about potential impacts associated with removal of right hand turns to properties from The Northern Road and at Castle Road. In particular, feedback suggested that changes to Castle Road would separate the community and distribute traffic across the network, while removing the right turn movement from The Northern Road would prevent access to driveways. The desire to retain these movements was identified through consultation for the proposal. While it is recognised that these impacts are likely to be a concern for directly affected motorists and owners of properties,

businesses and facilities affected by these changes, on balance it is considered that the impacts associated with the longer travel distances to access some residential properties, businesses and facilities would be outweighed by the improved safety outcomes for motorists and local communities.

Additional issues raised during consultation for the proposal about pedestrian and cycle access included:

- Need to ensure that sufficient time is allowed for people with disability when crossing roads
- Preference for a separate continuous on-road cycle facility
- Bus and bicycle lanes should be combined
- Cycle infrastructure should consider needs of likely future users.

During operation, the proposal would provide improved opportunities for active transport within the study area through the provision of new pedestrian and cycle facilities. These include a shared path along the western side of The Northern Road and the eastern side (between Wentworth Road and Bringelly Road) and a footpath on the eastern side of The Northern Road (between Bringelly Road and Jamison Road). The shared path will connect to the existing cycle network path and provide a framework for future local connections. The dedicated bus lanes could also be used by on road cyclists.

Pedestrian crossings would also be provided at upgraded intersections, which would support improved pedestrian access and safety outcomes for pedestrians and cyclists. Pedestrian crossings would be designed to meet current safety standards. Consideration would also be given to staged pedestrian crossings through the design development process. Provision of pedestrian crossings at intersections such as Glenmore Parkway and Wentworth Road, Frogmore Street, and Smith Street would support improved pedestrian and cycle access for students between schools on the eastern side of The Northern Road and residential areas on the western side of The Northern Road. As indicated in section 4.6.2, all SA2s have levels of cycling to work below the NSW average, while all SA2s apart from Penrith also have levels of walking below the NSW average. Improved pedestrian and cycle access provided by the proposal would help to support increased levels in the use of these transport modes, which in turn would support improved community health outcomes.

The provision of a dedicated bus lane in each direction would also support improved public transport access for local and regional communities through improved travel times and reliability for bus users.

Issues were raised during consultation for the proposal about potential impacts on visitor parking for properties at The Northern Road and concerns that visitors would no longer be able to park conveniently because of the proposed bus lane and road upgrade. Discussion about potential impacts on on-street parking from the proposal are discussed in the traffic and transport chapter and technical report of this REF.

Detailed discussion about potential operational traffic impacts is provided in the traffic and transport chapter of the REF.

5.6 Cumulative impacts

Cumulative impacts include the incremental effects of an action when added to other past, present or reasonably foreseeable future actions.

A range of other transport infrastructure and urban development projects have commenced or are planned in or near to the study area. These include such things as major road infrastructure upgrades associated with the Western Sydney Infrastructure Plan, and the planned future development of the South West Priority Land Release Area and Western Sydney Priority Growth Area. Interaction with these projects may change the social impacts or benefits of the project.

During construction, potential cumulative impacts may be associated with:

- Prolong duration of construction impacts, resulting in:
 - Extended periods of traffic disruptions for motorists, public transport users, pedestrians and cyclists, and commercial vehicle movements

- Extended periods of impacts on amenity for communities in the study area, associated with increased noise, dust and traffic
- Construction fatigue, particularly for communities closest to the construction works
- Increase in construction traffic, associated with haulage of materials, plant and equipment for the various construction projects, impacting on community perceptions of safety
- Increased demand for construction workers, providing opportunities for local workers
- An influx of construction workers in the study area associated with construction of various projects and potential increased demand for goods and services locally and regionally.

During operation, potential cumulative impacts would be associated with improved travel benefits for regional communities, business and industry, including freight, associated with the completion of the whole The Northern Road program of works.

Mitigation measures would be implemented for each project to manage the impacts of the individual projects. Coordination between the various projects in the planning of major works and possible disruptions, if possible, would assist in minimising potential cumulative impacts.

6. Environmental management measures

This section provides an overview of the measures to manage the socio-economic impacts of the proposal's construction and operation. It provides an overview of the broad objectives for management of socio-economic impacts, as well as key strategies for addressing various issues.

The broad objectives of the proposal for managing potential socio-economic impacts during construction and operation are:

- Avoid or minimise impacts on amenity, health and well-being, and access and connectivity for local and regional communities
- Avoid or minimise impacts on social infrastructure
- Avoid or minimise impacts on local businesses and industry
- Ensure local communities, including residents, business owners and managers of community facilities are informed about the proposal's construction and operation.

6.1.1 Community and stakeholder engagement

Community participation in on-going planning, construction, environmental management and monitoring would help to avoid, minimise or manage potential socio-economic impacts of the proposal.

Communication and Engagement Plan

A Communication and Engagement Plan (Community Involvement Plan) will be prepared to guide community engagement during construction of the project and would be updated throughout construction.

The Communication and Engagement Plan would detail such things as:

- Consultation purpose and objectives
- Stakeholders who are likely to have an interest in the project's construction activities (for example, property owners; business owners and business associations; local and regional communities; road users; including public transport users, pedestrian and cycle groups; government, media)
- Likely community and stakeholder issues for the construction phase, for example traffic management, property access, access for pedestrians and cyclists, business impacts, impacts on community facilities, noise and vibration impacts and management, environmental management measures
- Communication and engagement tools relevant to specific stakeholders and key issues, for example project newsletters, stakeholder meetings, webpage, toll-free number and other community feedback mechanisms
- Process, procedures and protocols for receiving, recording, handling and responding to community and stakeholder enquiries and complaints
- Procedures for monitoring, reporting, evaluating and updating the Community and Stakeholder Engagement Plan.
- Procedures for the preparation of implementation plans to be prepared in advance of key milestones or to respond to specific issues that may arise during the construction phase.

A complaints management system would also be developed and implemented prior to the start of construction. The system would be maintained for the duration of construction activities. Details of how to make a complaint or enquiry would be included in consultation materials such as community updates, advertisements and webpage.

Further information regarding community and stakeholder engagement planned during construction of the proposal can be found in section 5 of the REF.

The recommended measures to mitigate or manage socio-economic impacts generated during the construction and operation of the project are summarised in Table 6.1.

Table 6.1 : Summary of environmental management measures

Impact	Safeguard	Responsibility	Timing
General	A Communication Plan (CP) will be prepared and implemented as part of the Construction Environmental Management Plan (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"> mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions contact name and number for complaints. <p>The CP will be prepared in accordance with the Community Involvement and Communications Resource Manual (RTA, 2008)</p>	Contractor	Pre-construction
	On-going consultation will be carried out during construction with managers and users of potentially impacted businesses and community facilities regarding the timing, duration and likely impact of construction activities on the use of the facility or business.	Contractor	Construction
	On-going consultation will be carried out with staff of Penrith Christian School and other schools near the construction works about timing of construction activities, to manage potential impacts on exam periods and any temporary access changes	Roads and Maritime	During construction
Property acquisition	All property acquisition will be carried out in accordance with the <i>Land Acquisition Information Guide</i> (Roads and Maritime, 2012) and the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> .	Roads and Maritime	Pre construction / detailed design
Traffic and transport	A Traffic Management Plan (TMP) will be prepared and implemented as part of the CEMP.	Contractor	Detailed design / Pre-construction
(refer to Section 6.1 of the REF for further details)	Consultation will be undertaken with property owners between Maxwell Street / Bringelly Road and Smith Street to review front yard storage and vehicle manoeuvrability.	Contractor	Detailed Design
	Requirements for any changes to local traffic and access arrangements will be confirmed during detailed design in consultation with the local road authority and any affected landowners, including any temporary alternative access arrangements as required.	Contractor	Detailed design / Pre-construction
	Consultation will be undertaken with potentially affected businesses and residences prior to the commencement of and during work in accordance with Roads and Maritime's Community Involvement and Communications Resource Manual. Consultation will include but not limited to door knocks, newsletters or letterbox drops providing information on the proposed work, working hours and a contact name and number for more information or to register complaints.	Contractor	Pre-construction
	Consultation will be carried out with emergency services to ensure adequate emergency vehicle access is provided and maintained at all times for the duration of construction.	Contractor	Pre-construction and construction
	Pedestrian and cyclist access will be maintained throughout construction. Where that is not feasible or necessary, temporary alternative access arrangements will be provided following consultation with affected landowners and the local road authority.	Contractor	Construction
	Access for public transport services, including school bus services, will be maintained. The requirements for any temporary changes will be confirmed following consultation with local bus operators and the community.	Contractor	Construction

Impact	Safeguard	Responsibility	Timing
Noise and vibration (refer to Section 6.2 of the REF for further details)	A Noise and Vibration Management Plan (NVMP) will be prepared and implemented as part of the CEMP. Refer to Section 6.2 of the REF for further details.	Contractor	Detailed design / pre-construction
	All sensitive receivers (eg schools, local residents) likely to be affected will be notified at least five days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of: <ul style="list-style-type: none"> the project the construction period and construction hours contact information for project management staff complaint and incident reporting how to obtain further information. 	Contractor	Detailed design / pre-construction
	Construction programming will be developed in consultation with the affected community to minimise noise impacts - this may include agreement on completing construction in as short a time as possible or implementing time and duration restrictions and respite periods.	Contractor	Pre-construction
	All noise complaints will be investigated and appropriate mitigation measures implemented where practicable to minimise further impacts.	Contractor	Pre-construction / construction
Air quality (refer to Section 6.8 of the REF for further details)	An Air Quality Management Plan (AQMP) will be prepared and implemented as part of the CEMP.	Contractor	Detailed design / pre-construction
	Construction work will not be carried out during strong winds or in weather conditions where high levels of dust or airborne particulates are likely.	Contractor	Construction
	Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transportation.	Contractor	Construction
	Truck movements will be restricted to designated access areas.	Contractor	Construction
	Any material or exposed areas will be secured during project shutdown periods to prevent any dust emanating.	Contractor	Construction
Landscape character and visual impact (refer to Section 6.8 of the REF for further details)	An Urban Design Plan will be prepared to support the final detailed project design and implemented as part of the CEMP.	Contractor	Detailed design / pre-construction
	The Urban Design Plan is to provide details on tree planting with an emphasis on reinstating Cumberland Plain Woodland vegetation character, framing views and providing amenity in public open space.	Contractor	Detailed design
	Detailed design solutions to minimise the visual impacts of noise walls will be developed in consultation with Penrith City Council and the Penrith Christian School, and implemented during construction. The design will be prepared in accordance with the RTA Noise wall design guideline.	Contractor	Detailed design
	Project work sites, including construction areas and supporting facilities (such as storage compounds and offices) will be managed to minimise visual impacts, including appropriate fencing or screening (eg use of shade cloth), storage of equipment, parking, stockpile screening and arrangements for the storage and removal of rubbish and waste materials.	Contractor	Construction
	Compound and ancillary facilities will be decommissioned and the sites rehabilitated to their existing condition or as otherwise agreed with the landowner on completion of works.	Contractor	Construction

7. References

Australian Bureau of Statistics (2012a), *2011 Census of Population and Housing Basic Community Profile (Catalogue number 2001.0)* (for New South Wales, Mulgoa-Luddenham-Orchard Hills Statistical Area Level 2, Glenmore Park-Regentville Statistical Area Level 2, Penrith (C) Local Government Area), released 28 March 2013, available from www.abs.gov.au

Australian Bureau of Statistics (2013), *2011 Census QuickStats* (for New South Wales, Mulgoa-Luddenham-Orchard Hills Statistical Area Level 2, Glenmore Park-Regentville Statistical Area Level 2, Penrith (C) Local Government Area), released 28 March 2013, available from www.abs.gov.au

Commonwealth of Australia (2013a), *Census of Population and Housing Socio-Economic Indexes for Areas (SEIFA), Statistical Area Level 1 2011 (Catalogue number 2033.0.55.001)*, available from www.abs.gov.au

Commonwealth of Australia (2016a), *Regional Population Growth, Australia (Catalogue number 3218.0)*, Population estimates for Statistical Area Level 2 and Population estimates by Local Government Area (ASGS 2015), 2005 to 2015, released 30 March 2016, available from www.abs.gov.au

Commonwealth of Australia (2016b), *Counts of Australian Businesses, including Entries and Exits, Jun 2011 to Jun 2015 (Catalogue number 81650)*, released 26 February 2016, available from www.abs.gov.au

NSW Government (2014a), *A Plan for Growing Sydney*, December 2014

NSW Government (2014b), Department of Planning & Environment *New South Wales State and Local Government Area Population, Household and Dwelling Projections: 2014 Final*, available from <http://www.planning.nsw.gov.au/Research-and-Demography/Demography/Population-Projections>

NSW Roads and Maritime Services (2014), *Property acquisition*, April 2014

Penrith City Council (2011), *Penrith Community Engagement Strategy*, Adopted 21 June 2010, Amendment No. 1 11 April 2011

Penrith City Council (2015), *Penrith Community Plan*, Adopted 24 June 2013/ Amendment No. 1 29 June 2015

Websites:

www.flowerpower.com.au

<http://www.planning.nsw.gov.au/Plans-for-Your-Area/Sydney/A-Plan-for-Growing-Sydney>

www.myschool.edu.au

www.producedirect.net.au

<http://profile.id.com.au/penrith/about>

Appendix A. Demographic information

Table A.1 : Dwellings, 2011

Locality	Separate house (%)	Semi-detached dwelling, etc (%)	Flat, unit or apartment (%)	Other dwelling (%)	Occupancy rate (%)	Total private dwellings
Glenmore Park-Regentville SA2	88.3	7.6	0.7	0.0	96.7	6,574
Mulgoa-Luddenham-Orchard Hills SA2	86.2	1.1	2.8	2.6	92.6	2,152
Penrith SA2	43.5	23.3	23.9	0.1	91.9	5,366
Kingswood-Werrington SA2	56.0	22.8	14.3	0.2	93.4	6,565
Jamisontown-South Penrith SA2	80.5	6.4	8.2	0.0	95.2	6,387
Study area	69.6	13.6	10.5	0.3	94.3	27,044
Penrith LGA	77.3	10.3	6.8	0.4	94.8	62,632
NSW	62.8	9.6	17.0	0.8	90.3	2,736,637

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile

Table A.2 : Travel to work, 2011 (%)

Method of travel	Mulgoa-Luddenham-Orchard Hills SA2	Glenmore Park-Regentville SA2	Jamisontown-South Penrith SA2	Kingswood-Werrington SA2	Penrith SA2	Study area	Penrith LGA	NSW
One method:								
Train only	1.5	3.7	4.4	10.7	9.5	6.0	5.4	6.2
Bus only	0.5	0.7	0.8	1.0	1.0	0.8	0.8	3.7
Car only (as driver or passenger)	69.7	74.2	70.9	65.6	60.8	69.2	70.2	62.6
Other motor vehicle only	4.9	1.6	2.6	1.6	1.4	2.1	2.5	1.9
Bicycle only	0.2	0.2	0.4	0.4	0.6	0.4	0.3	0.7
Walked only	2.0	0.8	1.6	2.2	5.6	2.1	1.6	4.1
Other (one method)	0.5	0.3	0.5	0.5	0.8	0.5	0.5	1.0
Total one method	79.4	81.6	81.1	82.0	79.7	81.1	81.3	80.2
Two methods:								
Train and car (as driver or passenger)	1.9	3.2	2.3	1.9	2.2	2.4	2.4	1.2
Train and one other method	0.1	1.0	1.5	1.7	2.2	1.4	1.4	1.6
Bus and car (as driver or passenger)	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.3
Bus and one other method	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Other two methods	0.4	0.4	0.7	0.4	0.4	0.5	0.4	0.5

Method of travel	Mulgoa-Luddenham-Orchard Hills SA2	Glenmore Park-Regentville SA2	Jamisontown-South Penrith SA2	Kingswood-Werrington SA2	Penrith SA2	Study area	Penrith LGA	NSW
Total two methods	2.5	4.8	4.7	4.2	4.7	4.4	4.3	3.7
Three methods:								
Train and two other methods	0.3	0.5	0.6	0.6	0.6	0.5	0.5	0.4
Bus and two other methods (excl train)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other three methods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total three methods	0.3	0.5	0.6	0.6	0.6	0.6	0.6	0.4
Worked at home	7.1	2.9	2.5	1.8	2.0	2.8	2.8	4.6
Did not go to work	8.5	9.2	9.7	9.9	11.0	9.6	9.4	9.5
Method of travel not stated	2.3	1.0	1.3	1.5	1.9	1.4	1.7	1.5
Total	3,336	11,298	8,419	7,859	5,138	36,050	87,227	3,138,330

Source: ABS (2012), 2011 Census of Population and Housing, Basic Community Profile