

Newcastle Inner City Bypass – Rankin Park to Jesmond

Environmental impact statement

Technical Paper 5 – Socio-Economic Assessment

November 2016

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Aurecon Australasia Pty Ltd

Newcastle Inner City Bypass - Rankin Park to Jesmond Technical Paper 5 - Socio-economic Assessment

November 2016

Executive summary

Purpose of this report

The purpose of the socio-economic assessment (SEA) is to assess potential socio-economic issues arising from construction and operation of the Rankin Park to Jesmond section of the Newcastle Inner City Bypass between (the project), and where required, identify feasible and reasonable management measures. The SEA has been prepared to inform an environmental impact statement (EIS) for the project.

Preparation of the SEA was guided by the Secretary's Environmental Assessment Requirements (SEARs) for the project, Roads and Maritime Services (Roads and Maritime) *Environmental Impact Assessment Practice Note - Socio-economic assessment 2013*, international social impact assessment principles and a literature review.

Study area

The study area for the socio-economic assessment has been based on nearby communities that have the potential to experience changes to socio-economic conditions as a result of the project.

Approach to the SEA

The SEA involved the following steps.

- Identification of a study area to mark the project's social area of influence.
- Scoping of potential socio-economic issues that may arise from the construction and operation activities of the project.
- Establishing a socio-economic baseline to understand the existing social context of the social area of influence.
- Review of feedback from community consultation carried out during the options development and EIS preparation to identify the range of issues relevant to the socio-economic environment of the study area and the nature of the likely potential impact of the project.
- Impact identification and assessment of potential socio-economic impacts.
- Development of management measures to enhance positive impacts and avoid/minimise negative impacts.

Socio-economic impacts and mitigation measures

The construction and operation of the project has the potential to generate a number of long-term socio-economic positive impacts for the surrounding communities and the wider area of influence, as well as generate short-term negative impacts and some long-term land use changes.

Potential impacts arising from the construction and operation of the project include:

- Improved local and regional connectivity and reduced travel time along the Newcastle Inner City Bypass as the project would ease congestion on both the bypass and key parts of the surrounding road network. This would result in benefits to all road users, residents and local communities and improve emergency response.

- The John Hunter Hospital precinct would benefit with improved accessibility as there would be reduced traffic volumes on Lookout Road and congestion on the existing eastern entrance and an additional entrance on the western side provided off the bypass.
- The project would improve pedestrian and cyclist connectivity in the local area through provision of additional shared paths in the study area, including a shared path bridge (for use by both pedestrians and cyclists) over Newcastle Road and a new shared path on the eastern side of Lookout Road, enhancing options for walking and cycling.
- Reduction in traffic volumes along Lookout Road, Croudace Road and Newcastle Road would result in improved amenity for residents in the area due to reduced noise levels and improved air quality.
- The project would provide improved accessibility to the bushland area for bushfire management services including new connections to the existing fire trail network within the bushland.
- The project would permanently change the land use of the area under the proposed road corridor from residential, bushland and recreational use to infrastructure. The project would acquire small sections of Jesmond Park and George McGregor Park resulting in the loss of about 3.1 hectares of parkland representing about nine per cent of these areas.
- The project would directly impact about 57.7 hectares, of which about 23.4 hectares is already owned by Roads and Maritime and about 33 hectares is publicly owned. Most of the land directly impacted is designated as a road corridor for the project and is either already owned by Roads and Maritime, or by other Government agencies where acquisition is not required and ownership would be transferred to Roads and Maritime in accordance with the *Roads Act 1993*.
- The acquisition and land use changes would result in changed use of recreational areas within the bushland which are informally used for bushwalking and mountain bike riding and would require removal and potential relocation of part of the Disc Golf course at Jesmond Park.
- The project would sever existing informal access between the John Hunter Hospital precinct and residential areas to the west and partially impact on the western portion of a bicentennial walking trail.
- Temporary disruptions to property access during construction for some properties including those on Lookout Road and Newcastle Road. Where access to property would be disrupted for an extended period, alternative access would be provided.
- Temporary disruptions to existing pedestrian paths, shared paths and on-road cycleways during construction.
- Construction of the project would impact on roads within and immediately next to the work with modified arrangements such as changes to speed limits, which could lead to short-term travel delays for motorists.
- Amenity impacts on nearby sensitive receivers associated with construction activities.
- Increased noise levels during operation for some sensitive receivers near the project.

Roads and Maritime will implement a range of management measures to minimise or avoid negative impacts arising from the project. Roads and Maritime will carry out further consultation with the community and stakeholders during detailed design and construction in accordance with the draft Community Consultation Framework that will be finalised during detailed design.

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Appendices

Appendix A – Demographic summary

Appendix B – Social infrastructure by suburb

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1. Introduction

1.1 Project overview

Roads and Maritime Services (Roads and Maritime) is seeking approval to construct the fifth section of the Newcastle Inner City Bypass between Rankin Park and Jesmond (the project). The approval is sought under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Newcastle Inner City Bypass is part of Roads and Maritimes' long-term strategy to provide an orbital road within Newcastle's road network to connect the Pacific Highway at Bennetts Green with the Pacific Highway at Sandgate.

Construction of the project would form part of the Newcastle Inner City Bypass. This would provide improved traffic flows across the western suburbs of Newcastle and connect key regional destinations such as Bennetts Green, Charlestown and Jesmond shopping centres, John Hunter Hospital precinct, The University of Newcastle and the Pacific Highway.

The north-south road corridor was first planned in the 1950s and incorporated into the Northumberland County Planning Scheme in 1957.

Sections of the Newcastle Inner City Bypass have opened progressively since the early 1980s as outlined in Table 1-1.

Table 1-1 Newcastle Inner City Bypass sections status

Section	Route	Length	Status
A	West Charlestown Bypass	6 km	Completed in 2003
B	Kotara to Rankin Park	2.4 km	Completed in 1983
C	Rankin Park to Jesmond	3.4 km	Subject to this planning approval
D	Jesmond to Shortland	3.2 km	Completed in 1993
E	Shortland to Sandgate	2.3 km	Completed in 2014

A strategic design for the Rankin Park to Jesmond project was displayed for community comment in 2007. Community feedback was considered to finalise the preferred route corridor, which was reserved in Newcastle City Council's local environmental plan.

In June 2014 the NSW Government announced it would complete the \$280 million Rankin Park to Jesmond section of the bypass, including \$150 million from Restart NSW to progress the project. Roads and Maritime has since carried out a comprehensive review of the 2007 strategic design and a refined strategic design was displayed for community feedback in May and June 2016. A concept design has since been developed for the project, which forms the basis of this assessment that has been prepared to support the environmental impact statement (EIS) for the project.

1.2 The project

The project would involve the construction of about 3.4 km of new four lane divided road between Lookout Road at New Lambton Heights and Newcastle Road at Jesmond. The project is located in the Newcastle local government area (LGA), about 11 km west of the Newcastle central business district and about 160 km north of Sydney (Figure 1-1).

Key features of the project (Figure 1-2) include:

- New road with two lanes in each direction, separated by a median.
- Three interchanges, consisting of:
 - Northern interchange providing access to Newcastle Road and the existing Jesmond to Shortland section of the Newcastle Inner City Bypass. The full interchange provides all movements to/from the bypass and Newcastle Road.
 - Hospital interchange providing access between John Hunter Hospital precinct and the bypass. The half-interchange providing access to/from the north.
 - Southern interchange providing access to Lookout Road and the existing Kotara to Rankin Park section of the Newcastle Inner City Bypass. The bypass would travel under McCaffrey Drive. The half interchange provides connection in both directions on Lookout Road.
- Structures along the road to allow for drainage, animal and bushwalker access.
- Tie in and upgrades to connecting roads, including Lookout Road, McCaffrey Drive and Newcastle Road.
- Large cut and fill embankments due to steep and undulating terrain.
- Pedestrian and cycling facilities, including a shared path bridge over Newcastle Road.
- Noise barriers and/or architectural treatment, as required.
- Permanent operational water quality measures.

Ancillary work to facilitate construction of the project (Figure 1-3), including:

- Adjustment, relocation and/or protection of public utilities and services
- Mine subsidence treatment, as required
- Temporary construction facilities, including sedimentation basins, compounds and stockpile sites
- Temporary and permanent access tracks
- Concrete/asphalt batching plant, as required

1.3 Project objectives

The key objectives of the project are to:

- Provide continuity of the Newcastle Inner City Bypass between Bennetts Green and Sandgate
- Reduce travel times and congestion on the Newcastle Inner City Bypass
- Provide traffic relief on key parts of the surrounding road network

In so doing, it is intended to:

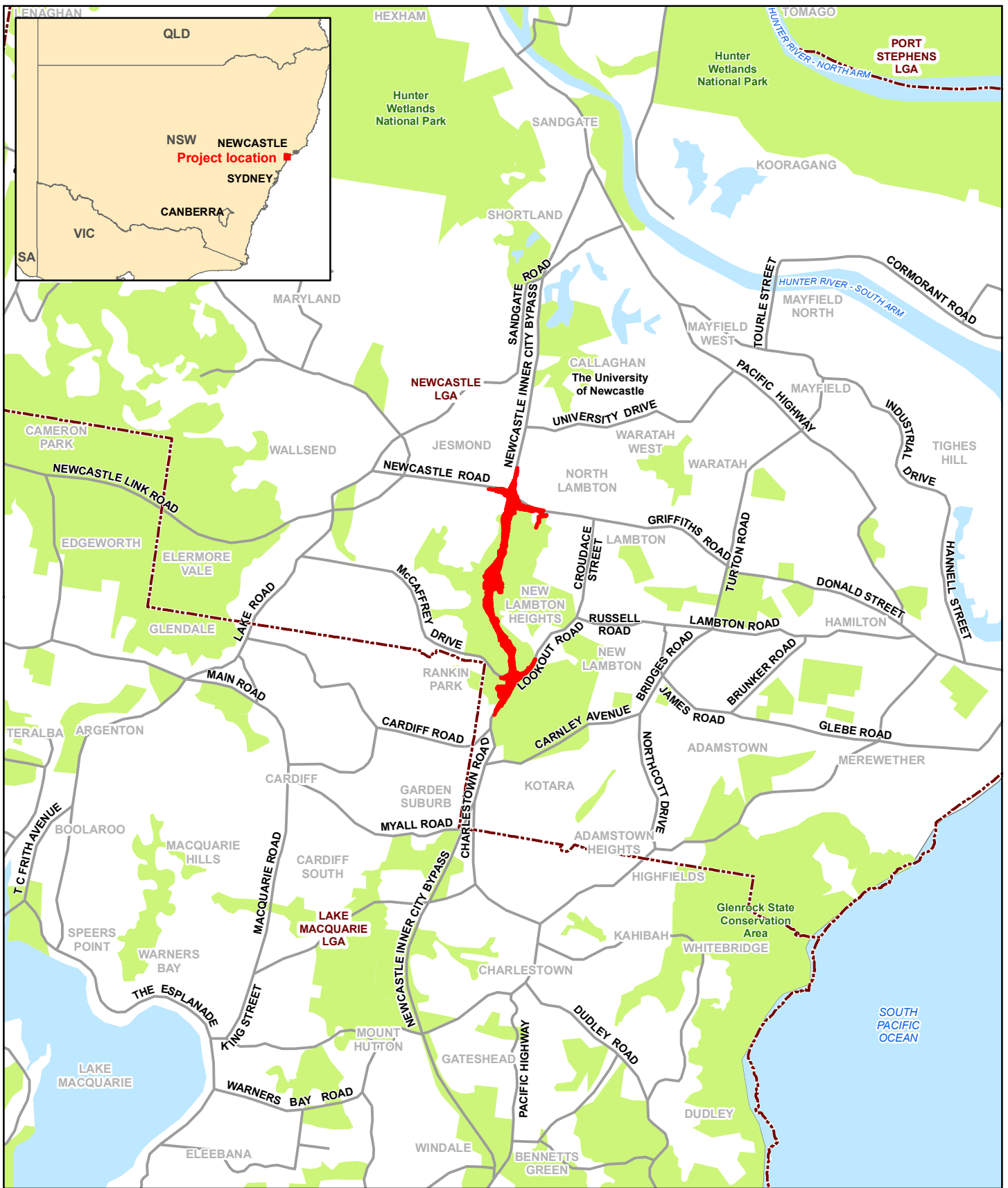
- Improve road safety
- Minimise impacts on the natural and built environment

- Provide value for money

To support the project objectives, the concept design and EIS has been developed by:

- Designing the project to consider the environmental constraints and avoid or minimise impacts to the environment.
- Satisfying the technical requirements for the design of the project.
- Optimising the concept design to ensure the project can be constructed and maintained both practically and efficiently.
- Applying appropriate urban design, landscape and visual principles in the concept design of the project elements.
- Carrying out appropriate community and stakeholder consultation.
- Designing all connections, modifications and improvements necessary to link the project to the existing road network.
- Planning temporary arrangements which minimise disruption to local and through traffic and maintain access to adjacent properties during construction.

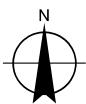
The overall project goal is to achieve the best possible result for each of these tasks, both in isolation and when considered together.



LEGEND

- The Project
- National Parks and Wildlife Service Estate and bushland reserves
- Road
- Local government area
- Watercourse area

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 Grid: GDA 1994 MGA Zone 56

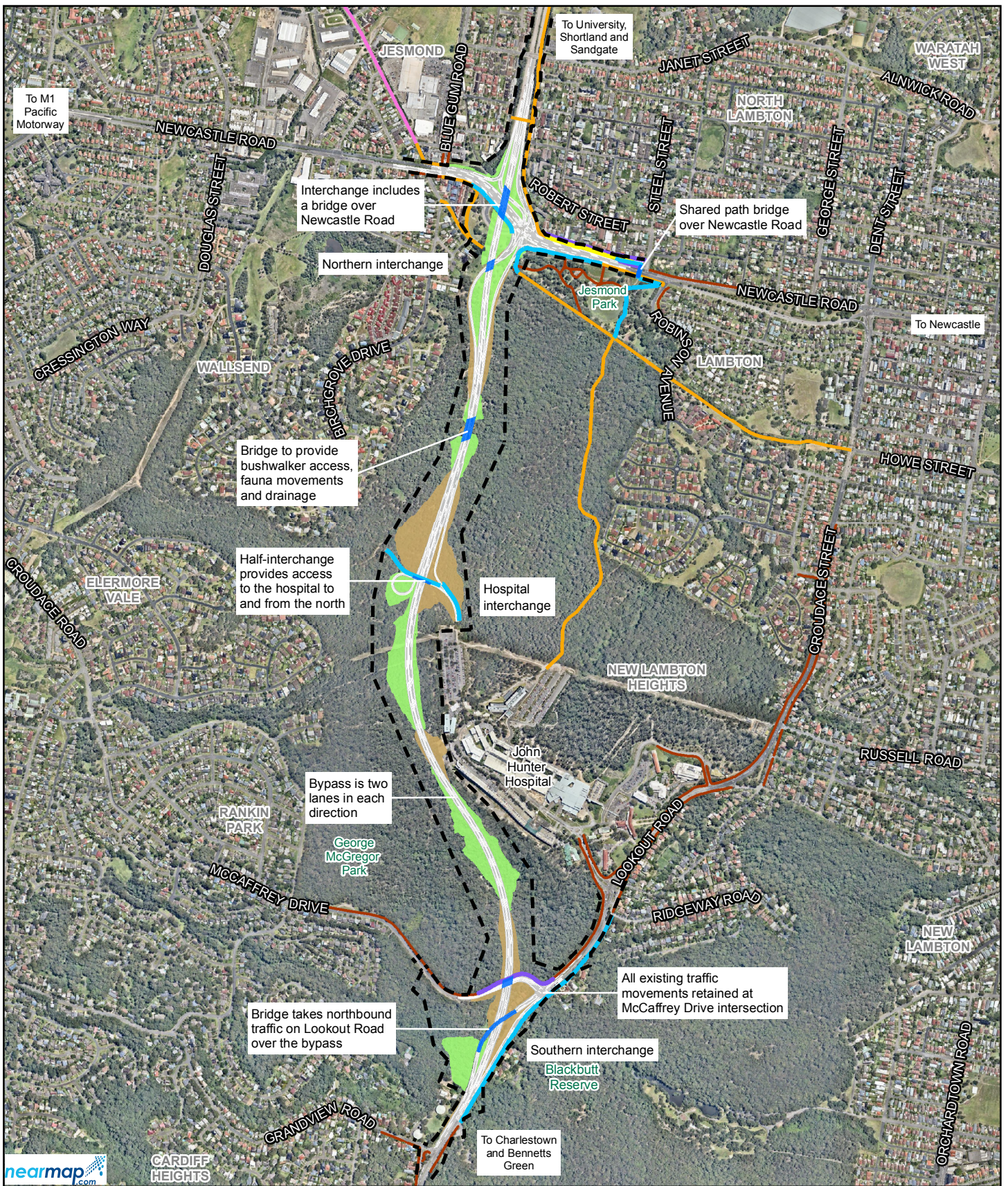


Rankin Park to Jesmond
 Socio-economic Impact Assessment

Job Number 22-17656
 Revision 0
 Date 26 Aug 2016

Project locality

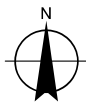
Figure 1-1



LEGEND

- | | | | |
|----------|------------------------|---------------------------|---------------------------|
| Design | Earthworks cut | Existing on-road cycleway | Existing footpath |
| Pavement | Earthworks fill | Existing shared path | Proposed footpath |
| Bridge | Proposed road corridor | Proposed shared path | Proposed on-road cycleway |

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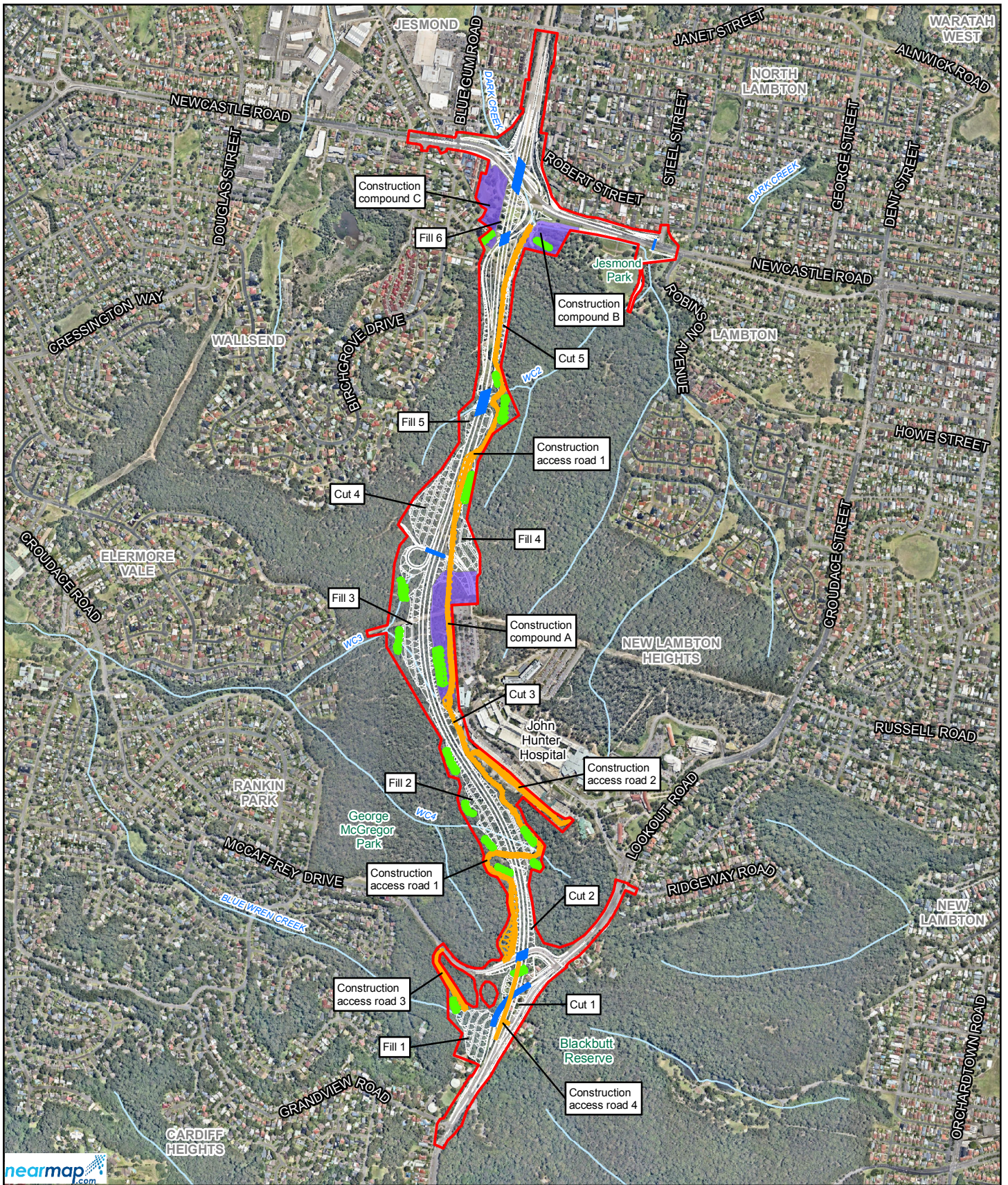


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Project overview

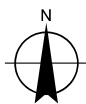
Figure 1-2



LEGEND

- Construction footprint
- Construction compound
- Construction access tracks
- Construction sedimentation basin
- Design
- Bridge
- Watercourse

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 Metres
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 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Rankin Park to Jesmond
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Construction ancillary facilities

Figure 1-3

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Data source: Neamap: Aerial Imagery, 20160331; Aurecon: Construction footprint/ Design / Water quality structures, 2016; LPI: DTDB, 2012. Created by: tmorton

1.4 Purpose of this report

The purpose of this report is to assess potential socio-economic issues from the project operation and construction, and where required, identify feasible and reasonable management measures.

This socio-economic impact assessment (SEA) has been prepared to address the Secretary's Environmental Assessment Requirements for the Newcastle Inner City Bypass between Rankin Park and Jesmond for the purpose of seeking project approval for State significant infrastructure under Part 5.1 of the *Environmental Planning and Assessment Act 1979*. Table 1-2 outlines the requirements relevant to this assessment and where they are addressed in the report.

Table 1-2 Secretary's Environmental Assessment requirements

Secretary's Environmental Assessment requirements	Where addressed
The environmental impact statement must include the following:	
Land Use, Social and Economic — including, but not limited to:	
<ul style="list-style-type: none"> A description of the existing socio-economic environment 	Section 2
<ul style="list-style-type: none"> Social and economic impacts to businesses and to the community within the vicinity of the project including those associated with property acquisition, traffic, access, property, public domain and amenity related changes. 	Section 3.1, 3.2 and Section 3.5
<ul style="list-style-type: none"> Impacts on recreational use of surrounding land and measures to maintain availability for recreational uses during construction and operation. Assessment should consider (but not be limited to) actual and perceived impacts on Jesmond Park during construction and operation. 	Section 3.3 and Section 3.6
<ul style="list-style-type: none"> Impacts on the management of residual publicly owned land in the vicinity of the project. 	Section 3.3
<ul style="list-style-type: none"> Impacts on mineral resources, including operating mines, extractive industries, known mineral or petroleum resources, and exploration activities in the vicinity of the proposed development. 	Section 3.3
<ul style="list-style-type: none"> Identification of properties required to be acquired for the works (full and partial acquisition) and an assessment of the scale of impact of this acquisition. 	Section 3.3
<ul style="list-style-type: none"> Potential impacts on utilities (including communications, electricity, gas and water) and the relocation of these utilities. 	Section 3.3

Secretary's Environmental Assessment requirements	Where addressed
<ul style="list-style-type: none"> • A draft community consultation framework identifying relevant stakeholders, procedures for distributing information and receiving/responding to feedback and procedures for resolving stakeholder (including John Hunter Hospital) and community complaints during construction and operation. Key issues that should be addressed in the draft strategy shall include: <ul style="list-style-type: none"> – Traffic management (including property access, pedestrian access) – Landscaping/urban design matters – Construction activities including out of hours work – Noise and vibration mitigation and management – Disruption to the operation of the hospital 	<p>EIS Chapter 6 and EIS Appendix C</p>

The SEA was prepared as part of the environmental impact statement (EIS) for the project. The scope of the SEA is to:

- Identify the socio-economic area of influence of the project by way of identifying the area and communities that would be impacted by construction and operation of the project.
- Establish a socio-economic baseline of the study area to form a basis against which the project's socio-economic impacts could be measured.
- Identify and assess potential socio-economic impacts of the construction and operation of the project on the study area communities. Include relevant stakeholder feedback into the assessment process.
- Recommend management strategies to avoid/minimise or manage potential socio-economic impacts.

1.5 Study area

The socio-economic benefits and impacts are often not contained within the construction footprint. Various factors are considered while determining the social area of influence, they include but not limited to, areas that may experience adverse impacts from the project such as noise, dust and visual changes, areas that may experience land use changes and areas that may potentially supply goods and services and workforce to the project.

To appropriately capture the socio-economic influences of the project the following definitions have been used in this report:

- Construction footprint – this defines the area that would be directly impacted by construction activities.
- Proposed road corridor – this defines the area under the project's operational footprint and road reserve and encompasses land that would be acquired for the project. It is expected that the property and land use impacts would occur in this area (Figure 1-2).
- SEA study area – this includes the suburbs adjacent to the proposed road corridor namely Jesmond, Lambton, New Lambton Heights, Rankin Park, Wallsend and Elernmore Vale. It is likely that these suburbs may experience direct socio-economic impacts (such as changes to amenity, community values, lifestyle, access and impacts on local businesses) from the project's construction and operation activities (Figure 1-1). The suburb boundaries and corresponding statistical data (suburb (SSC) level) were aligned with the Australian Bureau of Statistics (ABS) definition of the suburbs.

- Wider area of influence – this includes the broader Newcastle and Lake Macquarie LGAs and the State of New South Wales (NSW). These areas provide a wider socio-economic context to the project and may potentially provide workforce and other goods and services as well as experience wider benefits from the project (Figure 1-1). The LGA and State boundaries and corresponding statistical data were aligned with the ABS definition of the LGAs and the State.

1.6 Methodology

1.6.1 Approach to the SEA

The preparation of the SEA was guided by the following:

- Secretary's Environmental Assessment Requirements for the Newcastle Inner City Bypass between Rankin Park and Jesmond dated 3 March 2015 (Section 1.4).
- Roads and Maritime Services *Environmental Impact Assessment Practice Note - Socio-economic assessment 2013* - as defined in the practice note it was determined that the project would require a 'moderate' level of assessment, because of the potential moderate nature and duration of socio-economic impacts predicted during scoping of impacts.
- International social impact assessment principles and practice as described by Goldman (2000), van Schooten et al, (2003) and Vanclay (2002 and 2003) and endorsed by the International Association for Impact Assessment (IAIA). Key principles applied to this SEA were 'precautionary' and 'uncertainty' principles implying that all potential social issues even though they were not fully confirmed were considered during the investigation and assessment of impacts.
- Review of literature on the potential social and economic impacts of town bypasses.

1.6.2 Steps in the SEA

The SEA has involved the following steps.

Identification of study area

To assess socio-economic impacts an appropriate area of socio-economic influence was determined (Section 1.5).

Scoping of socio-economic issues

A preliminary scoping of potential social issues that may arise from the construction and operation of the project was carried out. Factors influencing the range of potential issues and benefits include previous social and economic assessment carried out during the options assessment phase of the project, site visits and consultation carried out for the project pre and during the preparation of the EIS.

Establishing a socio-economic baseline

A socio-economic baseline of the study area was established. The baseline includes a description of the land use, demographic and economic characteristics, key transport and travel patterns, social infrastructure and businesses in the area. Required information for the baseline was sourced from, Australian Bureau of Statistics (ABS) Census 2011, City of Newcastle website, community plans, land use maps, a drive through survey of local businesses and on-line maps. A full list of references is provided in Section 6.

Consultation inputs

To confirm potential social impacts and benefits. The consultation chapter of the EIS provides an overview of the community and stakeholder consultation carried out for the project, along with the key issues raised by the stakeholders. Key issues that were raised by stakeholders and the community include:

- The impact on local residents, including potential noise, air quality, traffic and visual impacts.
- The impact on the bushland corridor and flora and fauna species.
- The impacts of not providing a northbound on-ramp and/or southbound off-ramp at McCaffrey Drive at the southern interchange.
- The impacts of not providing south facing ramps at the hospital interchange.
- The impacts to pedestrian and recreational access in the bushland.
- The impacts to the existing east-west shared path at the northern end of the project.

Impact identification and assessment

Identification of the potential socio-economic impacts was informed by the project description, social baseline, stakeholder consultations and other EIS technical studies. Other technical studies reviewed included:

- *Newcastle Inner City Bypass - Rankin Park to Jesmond, Noise and Vibration Assessment* (GHD 2016a)
- Air quality assessment prepared for the project (EIS Chapter 17) (GHD 2016b)
- *Newcastle Inner City Bypass - Rankin Park to Jesmond, Urban Design and Landscape Character and Visual Impact Assessment* (KI Studio 2016)
- *Newcastle Inner City Bypass - Rankin Park to Jesmond, Traffic and Transport Assessment* (Aurecon 2016)

The assessment of potential socio-economic impacts included identifying the nature (positive/negative), type (direct/indirect), duration (temporary, short-term, medium-term, long-term), and level (negligible, minor, moderate, major) of each impact. Table 1-3 provides more detail on the impact assessment criteria.

Table 1-3 Impact assessment criteria

Criteria	Definition
Nature	<p>Positive - Impacts that result in net benefits for the community.</p> <p>Negative - Impacts that result in detriments for the community or specific stakeholder groups.</p> <p>Neutral - A change that does not result in a positive or negative impact but allows continuation of the usual function.</p>
Type of impact Direct/Indirect	<p>Direct - Impacts resulting directly from socio-economic changes caused by the project.</p> <p>Indirect - Impacts which occur firstly in the biophysical environment caused by the project.</p>

Criteria	Definition
Duration and project phase	<p>Temporary - Less than one year.</p> <p>Short-term - one year or more and less than five years.</p> <p>Medium-term - five years or more and less than 10 years.</p> <p>Long-term - 10 years or more.</p> <p>Pre-construction – before construction of project starts.</p> <p>Construction – when project is being constructed.</p> <p>Operation – when project is in use.</p>
Level of impact	<p>Negligible – Marginal change from the baseline conditions so no discernible effect is expected and a function recovery occurs within several months.</p> <p>Minor – A small but measurable change from the baseline conditions. Changes are expected to be temporary and/or only affect only a small number of people. Functional recovery is expected within five years.</p> <p>Medium – Noticeable and relatively substantial change from the baseline conditions. Changes may be longer term or temporary and affect a large number of people. A functional recovery is expected within five years.</p> <p>Major – A change fundamentally altering the baseline conditions in the community and affecting a large number of people, and/or a moderate number of people over the long-term. A functional recovery is expected to take more than 10 years, if at all.</p>
Stakeholders	<p>Groups within the community are identified for each impact, including:</p> <ul style="list-style-type: none"> • The general community • Landholders • Businesses • Users of community facilities/recreational areas • Target groups (e.g. seniors, Indigenous groups and culturally and linguistically diverse groups) • Road users

Development of mitigation, enhancement and monitoring strategies for the project

The SEA draws on a number of mitigation and management measures recommended in other technical studies within the EIS for the project. In addition, relevant management strategies to enhance positive impacts and avoid/minimise negative impacts were developed in consultation with key stakeholders.

2. Existing socio-economic environment

This section provides the policy context for the project, describes the relevant socio-economic characteristics of the study area with suitable references made to the demographic data of the LGAs within which the project is located (also referred to as the wider area of influence).

2.1 Policy context

2.1.1 National and State policy context

The project would improve road safety, reduce traffic congestion and travel times and as a result, provide economic benefits and support growth for NSW, the Hunter Region and Newcastle. Therefore, the project meets the objectives of a number of National and State strategic planning and policy documents including:

- NSW Long Term Transport Master Plan (Transport for NSW 2012)
- NSW 2021: A Plan to Make NSW Number One (NSW State Plan) (NSW Department of Premier and Cabinet 2011)
- State Infrastructure Strategy (Department of Premier and Cabinet 2012)
- National Road Safety Strategy 2011–2020 (Australian Transport Council 2011)
- NSW Government State Priorities
- NSW Bike Plan 2010 (Transport for NSW 2010)
- NSW Freight and Ports Strategy (Transport for NSW 2013)

2.1.2 Regional and local policy context

At a regional and local level there are a number of strategic planning and policy documents of direct relevance to the project and its socio-economic impacts. These are discussed briefly in the following sections.

Hunter Regional Transport Plan

The Hunter Regional Transport Plan (Transport for NSW 2014) has been prepared to support the Long Term Transport Master Plan (Transport for NSW 2012) and outlines specific actions for the Hunter region. The plan looks at population changes in the Hunter region and considers the fact that it has the largest regional workforce in NSW, with more than 80 per cent of the population living in the towns and cities of the Lower Hunter. There is a focus on Newcastle and its metropolitan centres, with a range of actions, including:

- Deliver road upgrades
- Support revitalisation of Newcastle city centre
- Improve road capacity

To support these actions, the Hunter Regional Transport Plan targets opportunities to invest in the road and rail network to improve transport connections and efficiency and specifically references the Newcastle Inner City Bypass. Overall, the project would help in fulfilling these actions as it would improve transport infrastructure within Newcastle and its metropolitan centres.

The project addresses the three specific actions of the plan as discussed further in the following sections.

Deliver road upgrades

One of the specific actions under the 'Deliver road upgrades' is to continue to deliver the Newcastle Inner City Bypass in the medium to longer term. Delivery of the project would meet this commitment.

Support revitalisation of Newcastle city centre

The project would support the revitalisation of Newcastle city centre by improving the efficiency of the broader Newcastle road network. The project would improve pedestrian and cyclist connectivity in the local area through provision of additional shared paths (for use by both pedestrians and cyclists) in the study area, including a shared path bridge over Newcastle Road and a new shared path on the eastern side of Lookout Road, enhancing options for walking and cycling.

Improve road capacity

The plan identifies the need to continue to invest in the Newcastle road network to address capacity constraints that impact on travel time reliability and public transport options. The project would support and contribute to this action as it would improve capacity, travel time reliability and provide for additional transport options.

Hunter Strategic Infrastructure Plan 2013

The Hunter Strategic Infrastructure Plan (NSW Government 2013) aims to provide the strategic infrastructure framework to inform future urban growth of the Hunter Metropolitan Area. In the infrastructure plan, the project is identified as a project that should be planned for in the next five years, so that it can be delivered in the following six to 20 years. The infrastructure plan notes that:

“Completing this final section of a long term Newcastle Inner City Bypass validates decades of government planning and expenditure on the Hunter Metropolitan Area (HMA)’s north–south axis route. It will improve north– south traffic flow in the inner suburbs; improve connectivity and access to key regional facilities including John Hunter Hospital and Newcastle University; and reduce congestion on primary routes to major employment and retail centres in Bennetts Green, Charlestown and Jesmond. This link would increase the productivity of the HMA by reducing travel distance, time and delays and enhance the liveability of the HMA by improving the community’s access to key social, retail and educational infrastructure.”

This EIS, which this SEA supports, aims to obtain planning approval for the construction of the Rankin Park to Jesmond section of the Newcastle Inner City Bypass, thereby aligning with the actions identified in the infrastructure plan.

Lower Hunter Regional Strategy 2006-31

The Lower Hunter Regional Strategy (Department of Planning 2006) applies to the five local government areas of Newcastle, Lake Macquarie, Port Stephens, Maitland and Cessnock, and is one of a number of regional strategies prepared by the then Department of Planning. The regional strategy represents an agreed NSW Government position on the future of the Lower Hunter. It is the primary planning document for the Lower Hunter Region and has been prepared to complement and inform other relevant State planning instruments.

The primary purpose of the strategy is to ensure that adequate land is available and appropriately located to sustainably accommodate the projected housing and employment needs of the region's population over the next 25 years. The regional strategy also refocuses development in the Lower Hunter towards the strengthening of vibrant centres that support the role of Newcastle City Centre as the regional city.

The project aligns with the strategy by improving traffic movement through Newcastle to facilitate the increase in traffic anticipated due to increases in housing and employment lands in the area. Traffic volume forecasts that informed the development of the project are based on land use assumptions, forecast population and employment growth as predicted in the strategy.

Draft Hunter Regional Plan and Draft Plan for Growing Hunter City

In March 2013, the NSW Government released the document *The Lower Hunter over the next 20 years: A Discussion Paper*. This was a first step in the development of the proposed Draft Hunter Regional Plan (Department of Planning and Environment 2015a) and the Draft Plan for Growing Hunter City (Department of Planning and Environment 2015b), which would replace the existing Lower Hunter Regional Strategy (Department of Planning 2006).

At the time of publication of this report, the public exhibition period for the Draft Hunter Regional Plan and Draft Plan for Growing Hunter City had closed and the NSW Department of Planning and Environment were reviewing submissions with the view to finalising the plans. As such, the project has been considered against the draft plans.

The Draft Hunter Regional Plan outlines a vision, goals and actions for sustainable growth of this region between now and 2036. The Draft Plan for Growing Hunter City has been developed as a companion to the Draft Hunter Regional Plan to reflect the importance of Newcastle to the Hunter Region and the State. Both plans identify a series of goals and actions for the Hunter Region. Those of relevance to the project are discussed in the following section.

Goal 2: Grow the largest regional economy in Australia

Direction 2.3 – Enhance inter-regional transport connections; Action 2.3.1 – Identify and deliver transport corridors to enhance inter-regional networks.

Action 2.3.1 identifies the need to improve transport corridors to maintain efficiencies in the network, particularly for freight, and to allow for future growth. Improvements include the completion of the Newcastle Inner City Bypass.

The project would assist in meeting these goals as it would complete the fifth section of the Newcastle Inner City Bypass therefore improving regional and inter-regional connections and transport corridors within the region.

Newcastle 2030 Community Strategic Plan (Revised 2013)

The Newcastle 2030 Community Strategic Plan (Revised 2013) (Newcastle City Council 2013) was prepared to provide a shared community vision to inform policies and actions for Newcastle for the next 20 years. The plan sets seven strategic directions that are supported by objectives, the following are of relevance to the project:

- Linked networks of cycle and pedestrian paths
- A transport network that encourages energy and resource efficiency

The objectives are supported by a series of more detailed strategies relating to pedestrian and cyclist opportunities, road safety and freight efficiency.

The project would assist council in meeting its objectives through the provision of on-road cycleways, shared paths and pedestrian paths and by providing a safer and more efficient transport route.

Local Planning Strategy

The Local Planning Strategy (Newcastle City Council 2015) is a land use strategy to guide the future growth and development of Newcastle to 2030 and beyond. The strategy implements land use directions from the Newcastle 2030 Community Strategic Plan (The City of Newcastle Future City Group 2013) through principles, strategies and actions which are based upon the core objectives from the strategic plan. The strategy incorporates the outcomes of council's other core strategies as they relate to land use.

The strategy also aligns with other strategic land use strategies at the State level such as the Lower Hunter Regional Strategy (Department of Planning 2006) and complements the Newcastle Urban Renewal Strategy (Department of Planning and Environment 2014) for the Newcastle city centre. The strategy underpins the Newcastle LEP providing a land use planning platform to move towards a smarter, more liveable and sustainable Newcastle. One objective in the strategy identifies the need to *'protect bushland areas within Jesmond Park and surrounds while allowing for construction of the Newcastle Inner City Bypass'*.

The strategy establishes a number of principles and actions relating to economic development, transport network efficiency and infrastructure (including roads) to support growth. Local planning strategy principles relevant to the project include:

- P2 – Walking and cycling will be viable options for the majority of trips by linking networks of cycle and pedestrian paths.
- P6 – Opportunities to enhance and connect the natural environment will be pursued.
- P8 – Development will protect culture, heritage and place.
- P10 – The urban environment will promote active and healthy communities with physical, mental and spiritual wellbeing by providing opportunities for social interaction, by encouraging physical activity and by providing access to essential services and community facilities by all people close to their homes.

The project would assist in meeting the strategy and its principles by providing a safer and more efficient route for private, commercial and freight transport, and ensures connectivity of cycle and pedestrian networks. It would also ensure that bushland areas are protected as much as possible during construction of the project. The project would therefore support principle 10 by promoting active and healthy communities through retaining bushland areas for public use.

Newcastle Cycling Strategy and Action Plan

The Newcastle Cycling Strategy and Action Plan (The City of Newcastle, 2012) represents Newcastle City Council's commitment to enhancement of cycling in Newcastle. The document aligns with other government policies such as the *NSW Bike Plan* (Transport for NSW, 2010).

The plan recognises that a combination of different strategies is needed to increase participation. It identifies a range of infrastructure improvements and social initiatives, with associated priorities and responsible service units. It also establishes a framework to monitor implementation of actions and progress towards nominated targets.

As part of the strategy, bike routes across the Newcastle local government area were mapped and potential future routes identified. Potential cyclist routes are identified along the bypass as an on-road route, and across the bypass as off-road routes. The project would provide for these potential routes in addition to modification and improvements to existing off-road routes planned by Newcastle City Council.

Newcastle Transport Strategy

The Newcastle Transport Strategy (Newcastle City Council 2014) was prepared to guide council's transport related decisions and actions within the limits of council's roles and responsibilities. The strategy sets a number of objectives, including:

- Linked networks of cycle and pedestrian paths
- A transport network that encourages energy and resource efficiency

The objectives are supported by a series of more detailed strategies and actions relating to pedestrian and cyclist opportunities, road safety and freight efficiency, which include:

- Enhance transport links to and within Newcastle including investigations of high speed rail and freight by-pass.
- Develop a network of safe, linked cycle and pedestrian paths integrated with key destinations and green space.
- Plan for cyclists and pedestrians in planning for new developments.
- Give greater priority to cyclists and pedestrians in planning for new developments.
- Enhance support infrastructure such as end of trip facilities to encourage walking and cycling.
- Consider the need for all modes of transport in planning for new development and infrastructure networks.
- Maintain and enhance safe local road networks and provide appropriate levels of parking in urban centres.

The project would assist council in meeting these objectives and strategies as it would reduce vehicle travel times through Newcastle and improve the efficiency of regional traffic movements. The project also includes provisions of on-road cycleways, shared paths and pedestrian paths.

2.2 Socio-economic profile

Key demographic characteristics of Newcastle are summarised in the following sections. Detailed demographic data for Newcastle LGA and NSW state is provided in Appendix A.

The following information is based on ABS Census data from 2006 and 2011 (ABS 2006 a-d and ABS 2011 a-d) unless otherwise stated.

2.2.1 Population

- The population of Newcastle LGA in 2011 was 148,535 persons compared with 141,753 persons in 2006. The population of NSW also increased across the period from 6,549,177 persons in 2006 to 6,917,658 persons in 2011.
- The populations of the suburbs immediately surrounding the project are as follows:
 - Jesmond - 2607 people
 - Lambton - 5003 people
 - New Lambton Heights - 2155 people

- New Lambton - 9758 people
- Rankin Park - 2451 people
- Wallsend - 12307 people
- Elernmore Vale - 5186 people
- Newcastle City Council identifies a surging population with significant growth in Newcastle's western corridor. The population of Newcastle LGA is predicted to steadily increase to 180,643 by 2036 (Newcastle City Council 2013). To reflect the 2036 growth prediction, the Newcastle population would be increasing at a rate of about 0.9 per cent annually. This is compared to NSW population forecast of 9.7 million at 2036, which represents a 1.3 per cent annual growth rate from 2016.
- Newcastle has a female population of 75,383 (50.8 per cent) and a male population of 73,152 (49.2 per cent). NSW reported a female population of 50.7 per cent and a male population of 49.3 per cent.
- The population Lake Macquarie LGA in 2011 was 189,005 persons (48.8 per cent male and 51.2 per cent female) compared to 183,140 in 2006 (48.9 per cent male and 51.1 per cent female).

2.2.2 Age

- Largest proportion of people were in the 20-24 years age bracket: 12,939 persons (8.7 per cent); followed by 25-29 year age group, 11,827 persons (8 per cent). In NSW, the largest proportion of the population was in the 35-39 years age bracket (7.1 per cent). This was followed by the 40-44 and 45-49 years age groups.
- The largest proportion of people in the Lake Macquarie LGA were in the age bracket of 50-54 years (13,396 persons 7.1 per cent).
- There were 25,304 people (17.1 per cent) aged 14 years and under and 22,940 (15.4 per cent) aged 65 years or older. These results were highly similar to the State which reported 19.2 per cent aged 14 years and under and 14.7 per cent aged 65 years or older.
- The median age of the population is 37 years in Newcastle LGA, 41 years in Lake Macquarie LGA and 38 years in NSW.
- The largest proportional population increases are forecasted to be among residents aged 70-74 years and within the 20-34 years age groups (Newcastle City Council 2013).

2.2.3 Cultural and ethnic composition

- Aboriginal and Torres Strait Islander people made up 2.6 per cent of the population with 3927 persons; 50 per cent male and 50 per cent female. This was consistent with the Aboriginal and Torres Strait Islander population of 2.5 per cent recorded for the State.
- Median age of Aboriginal and Torres Strait Islander population is 23 years. This was higher than the median age of 21 years reported for NSW.
- In Newcastle, 12.5 per cent of the population were born overseas. The most common other countries of birth were England (2.1 per cent), New Zealand (1.1 per cent) and China (0.6 per cent). The State recorded almost double this percentage with 25.7 per cent of the population born overseas.
- In Newcastle, 8.3 per cent of people spoke a language other than English at home. Other common languages spoken at home include Macedonian, Italian, Mandarin, Greek and Arabic. This was significantly lower than the 22.5 per cent recorded for the State.

- In Lake Macquarie, 3 per cent of the population were Aboriginal or Torres Strait Islander people. 9.7 per cent of the population were born overseas and 3.8 per cent spoke a language, other than English at home.

2.2.4 Family composition and household structure

- There were a total of about 58,582 households in Newcastle LGA. Family households comprised 63.8 per cent of households, 29.5 per cent were lone person households, and 6.6 per cent were group households. In Lake Macquarie LGA, a higher number of family households were recorded at 73.8 per cent and fewer lone person (23.9 per cent) and group households (2.3 per cent). NSW reported a higher number of family households than Newcastle LGA, with 71.9 per cent and fewer lone person (24.2 per cent) and group households (3.8 per cent).
- The average number of bedrooms per occupied private dwellings was 2.8 and the average household size was 2.4 people in Newcastle LGA. Both the average number of bedrooms and the average household size was lower in Newcastle LGA compared with NSW.
- Of the 37,907 families in Newcastle LGA, 40.5 per cent were couple families with children, 38.8 per cent were couple families without children, and 18.5 per cent were one parent families. This was consistent with the percentages recorded for the State.

2.2.5 Housing and accommodation

- In Newcastle, 92.3 per cent of private dwellings were occupied and 7.7 per cent were unoccupied. There were a total of 63,341 private dwellings. Lake Macquarie and NSW had a slightly higher number of unoccupied private dwellings with 8.3 percent and 9.7 per cent respectively.
- Of occupied private dwellings in Newcastle LGA, 73.5 per cent were separate houses, 13.9 per cent were flats, units or apartments, 12.1 per cent were semi-detached, row or terrace houses, or townhouses, and 0.3 per cent were other dwellings. NSW recorded a slightly higher percentage of flats, units or apartments with 18.8 per cent and a lower percentage of separate houses (69.5 per cent) and semi-detached, row or terrace houses, or townhouses (10.7 per cent).
- In Lake Macquarie, in relation to private dwellings 79.2 percent were separate houses, 6.6 were semi-detached, row or terrace houses and 4.9 were apartments.
- Of occupied private dwellings in Newcastle LGA, about 60 per cent of the dwellings were privately owned (31.8 per cent were owned with a mortgage, 30.9 per cent were owned outright) and 33.9 per cent were rented. This was consistent with the percentages recorded for the State.
- It is estimated that 12,900 new dwellings will be required to accommodate an additional 11,900 households by 2036 (Newcastle City Council 2013).
- Housing vacancy rate was 10.5 percent in Newcastle and 7.5 per cent in the suburb of Jesmond (Real estate investar, 2016).

2.2.6 Education

- Newcastle had a slightly lower rate of high school completion (46.4 per cent) compared to the NSW average (49.2 per cent); however, the rate had increased since 2006 (39.3 per cent). The Newcastle average is significantly higher than Lake Macquarie LGA (33.8 per cent).

2.2.7 Transport

- Newcastle LGA has high rates of car ownership, with 85.1 per cent of households owning at least one motor vehicle and almost half of the population having two or more vehicles (46.5 per cent), which is consistent with the averages for the State. There were 6686 households (11.4 per cent) that did not own a motor vehicle.
- 49,995 (86.9 per cent) people travelled to work by car as driver or passenger. This was higher than the percentage of 78.4 (1,972,448 people) recorded for the State but slightly lower than that recorded in Lake Macquarie (88.1 per cent).
- Around 10 per cent of workers travelled by public transport, walked (4.7 per cent) or cycled (2.2 per cent) to work. NSW reported a larger number of workers travelling by public transport, walking or cycling to work with 18.65 per cent. This is much higher than Lake Macquarie where 2.9 per cent of people travel by public transport, 1.9 per cent walk and 0.5 per cent cycle.

2.2.8 Socio-economic indicators for area (SEIFA) and need for assistance

- The ABS Index of Relative Socio-economic Disadvantage (SEIFA) provides an indicator of the relative disadvantage of an area based on attributes such as low income, low educational attainment, high unemployment, jobs in relatively unskilled occupations and other variables. The average SEIFA score is 1000 with a higher score indicating a lower level of disadvantage and a lower score indicating a higher level of disadvantage.
- The SEIFA Index of Disadvantage for Newcastle was 991 indicating that the LGA has close to average levels of disadvantage. This places Newcastle in the 8th decile for NSW or the third highest decile.
- There were 8730 persons in Newcastle that required assistance according to 2011 census data. This equated to 5.9 per cent of the population, which was slightly higher than the percentage of 4.9 recorded for NSW but lower than Lake Macquarie (11,572 persons, 6.1 per cent).

2.3 Existing land use

2.3.1 The project

The project is located within the suburbs of Jesmond, Lambton and New Lambton Heights.

Most of land traversed by the project is existing bushland and parkland, with the southern and northern extents joining existing road infrastructure at Lookout Road, New Lambton Heights and Newcastle Road, Jesmond respectively. The project passes through 15 residential/private lots comprised of 14 near Lookout Road (on which there are nine existing houses) at the southern end and one near Jesmond Park (which is a paddock and does not contain any houses) at the northern end. Most (13) of the impacted lots have already been acquired by Roads and Maritime.

The project encompasses the following land use zonings under the *Newcastle Local Environmental Plan 2012* (Figure 2-1):

- B2 Local Centre
- SP2 Infrastructure
- R3 Medium Density Residential
- R2 Low Density Residential
- E3 Environmental Management

- RE1 Public Recreation

Land use within and near the project includes the following (Figure 2-2):

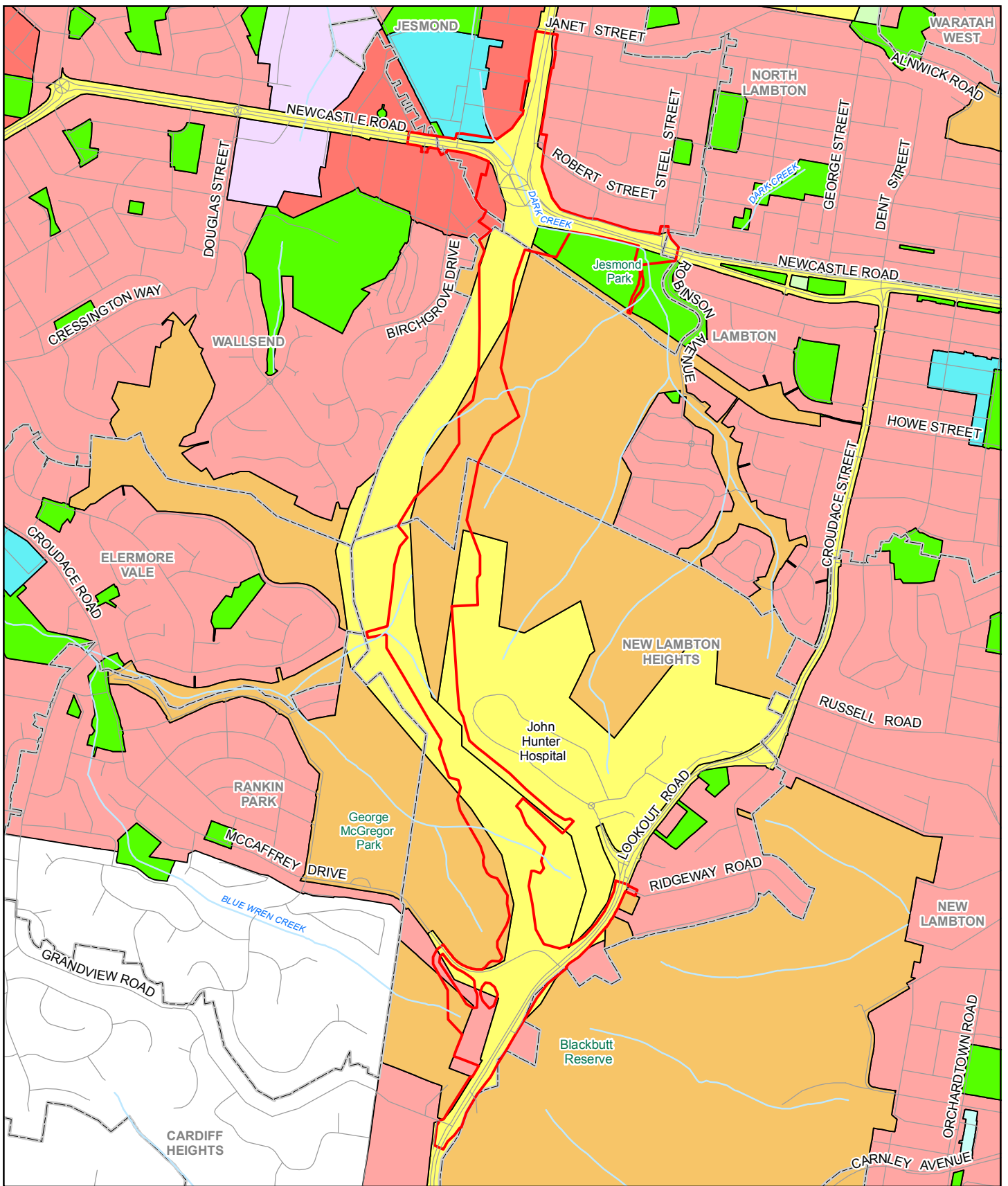
- Commercial (including retail)
- Education
- Hospital/medical – associated with the John Hunter Hospital precinct
- Road infrastructure – associated with existing roads
- Shared paths
- Residential – existing residential houses
- Recreational bushland
- Parkland

The project encompasses land owned by (Figure 2-3):

- Roads and Maritime
- Newcastle City Council
- Hunter New England Local Health District
- Crown lands
- Privately owned

A search was carried out of the Department of Resources, Minerals and Energy (MinView) on 7 July 2016. There is no current coal, petroleum or mineral titles or other applications that exist over the study area. A petroleum exploration licence (PEL 0458) held by Hunter Gas Pty Ltd that encompassed the study area, expired on 6 June 2016.

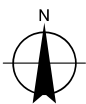
The project is underlain by historical underground coal mine workings associated with the former Lambton Colliery. Within the area, coal was extracted from both the Borehole and Victoria Tunnel Seams. Records of underground workings within these seams indicate that bord and pillar and total extraction mining methods were used. First workings in the study area occurred between 1890 and 1895, with areas of total extraction being mined between 1912 and 1935.



LEGEND

- | | | | |
|----------------------------|--------------------------------|-------------------------|-------------|
| Construction footprint | IN2, Light industrial | RE2, Private recreation | Watercourse |
| B1, Neighbourhood centre | R2, Low density Residential | SP2, Infrastructure | Road |
| B2, Local centre | R3, Medium density Residential | Suburb boundary | |
| E3, Environment management | RE1, Public recreation | | |

Paper Size A4
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 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

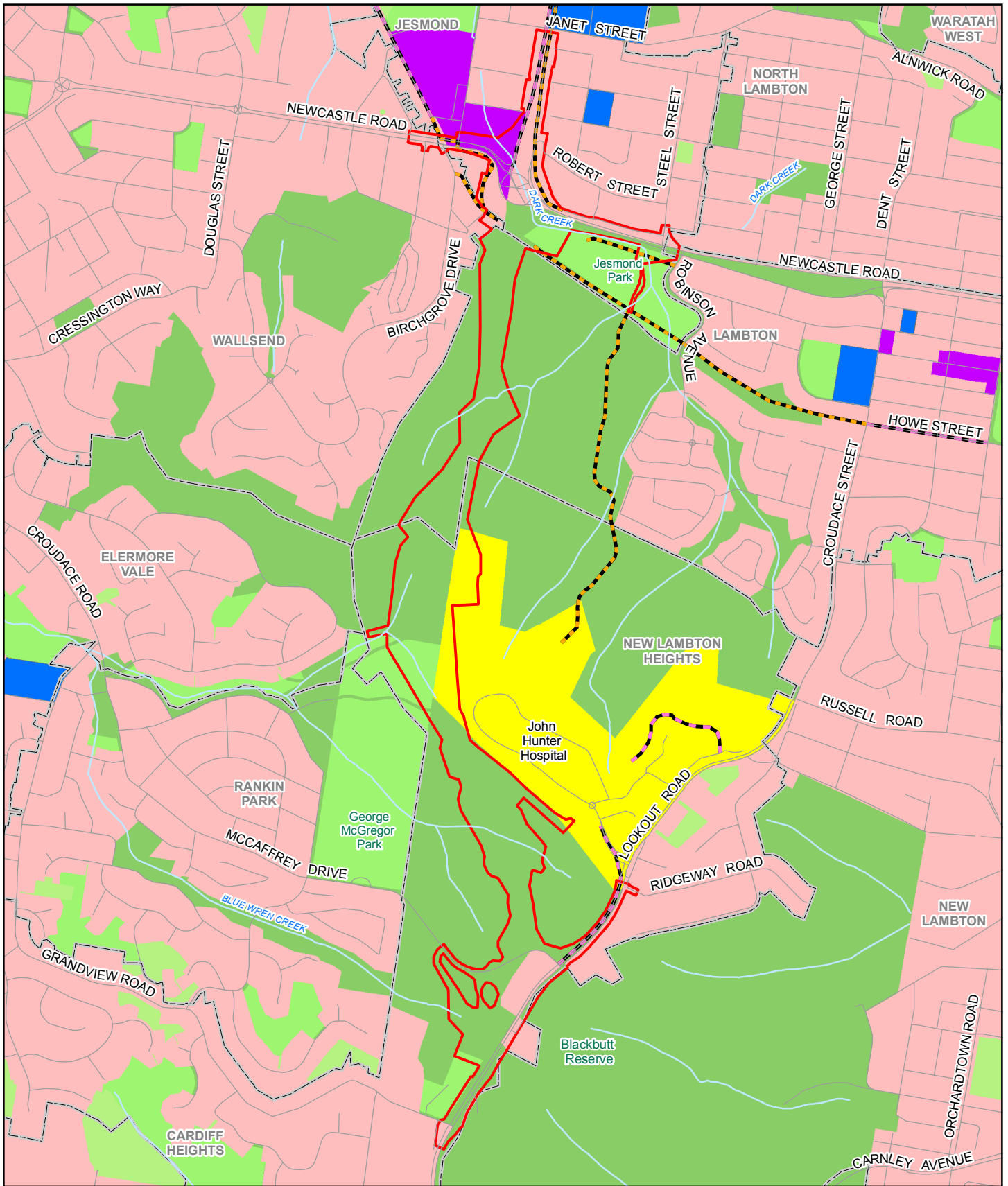


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Land use zones

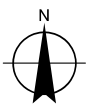
Figure 2-1



LEGEND

- | | | | | |
|------------------------|-------------------------------|-----------------------|---------------------------|-------------|
| Construction footprint | Commercial (including retail) | Residential | Existing on-road cycleway | Watercourse |
| Suburb boundary | Education | Recreational bushland | Existing shared path | Road |
| Hospital/Medical | Parkland | | | |

Paper Size A4
 0 62.5 125 250 375 500
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

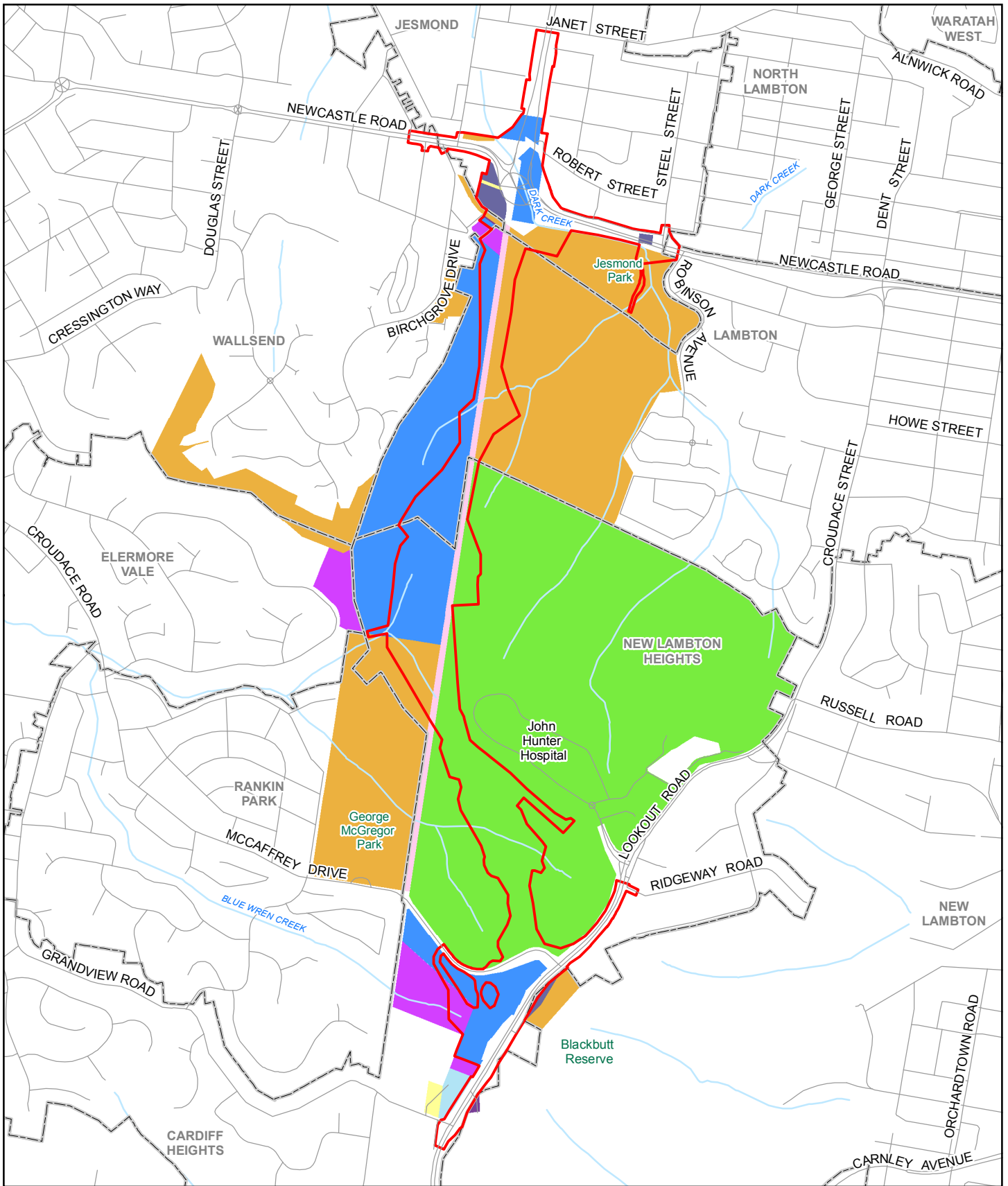


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 Date | 26 Aug 2016

Existing land use

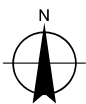
Figure 2-2



LEGEND

- | | | | |
|-------------------------------------|--|---------------------------|-------------|
| Construction footprint | Privately owned | Hunter Water Corporation | Watercourse |
| Newcastle City Council road reserve | Hunter New England Local Health District | Minister for Public Works | Road |
| The Commissioner of Main Roads | Newcastle City Council | Suburb boundary | |
| Crown road | Roads and Maritime Services | | |

Paper Size A4
 0 62.5 125 250 375 500
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Rankin Park to Jesmond
 Socio-economic Impact Assessment

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Land ownership

Figure 2-3

2.3.2 Area surrounding the project

The area directly adjacent to the project consists of mostly bushland reserve and parks. The northern section of the project adjoins residential land in Jesmond located around Newcastle Road and the existing Jesmond to Shortland section of the Newcastle Inner City Bypass. Jesmond Park, which includes sporting and picnic areas and a shared path, is located immediately to the east of the project on the southern side of Newcastle Road. Commercial development along Blue Gum Road, including Stockland Jesmond Shopping Centre, is located immediately to the north-west. The University of Newcastle campus is located to the north-east of the northern extent of the project on University Drive.

The project south of Newcastle Road is surrounded by bushland areas that provide a buffer to residential areas of about 100 m to the west in Wallsend and about 400 m to the east in Lambton.

In the central section, the project continues to pass through bushland areas in the suburb of New Lambton Heights. The John Hunter Hospital precinct is located immediately to the east and includes the John Hunter Hospital, Hunter Medical Research Institute, Newcastle Private Hospital, Royal Newcastle Centre, Forensic Medical Centre, Hunter Area Pathology Service and accommodation facilities including Ronald McDonald House. Residential areas within the suburbs of Elmore Vale and Rankin Park are located about 180 m and 240 m to the west respectively. The project passes through the north-eastern corner of George McGregor Park near the hospital precinct.

In the southern section the project is bounded by the hospital precinct to the north and bushland to the south before re-joining Lookout Road, to the south of McCaffrey Drive, in the suburb of New Lambton Heights. At this point it is largely surrounded by bushland areas including Blackbutt Reserve to the east. There are a number of residential properties on Lookout Road with the main residential areas in Rankin Park located about 300 m to the west.

Table 2-1 summarises the existing land uses and key features in the suburbs near the project. Further detail is provided in Appendix B.

Table 2-1 Existing land use and key features within surrounding suburbs

Suburb	Profile
Jesmond	<p>Land use within Jesmond is mostly low density residential development with some areas for public recreation and the Stockland Jesmond Shopping Centre and businesses along Blue Gum Road identified as a local centre. Medium density residential development is concentrated between Blue Gum Road and the existing Jesmond to Shortland section of the Newcastle Inner City Bypass.</p> <p>Jesmond is home to a variety of facilities that make it a convenient residential area. The suburb provides a commercial centre as well as residential area for both students of The University of Newcastle and the aging, with specific aged housing facilities. Jesmond has become a multicultural area due to many international university students living in the suburb.</p> <p>The suburb has a number of parks and nature reserve areas housing children’s play equipment, multiuse paths, picnic areas and a skate ramp. Jesmond also contains two primary schools, one secondary school and two childcare/early education centres. Jesmond’s commercial centre is situated on Blue Gum Road. There are a number of mixed businesses as well as a large shopping complex, Stockland Jesmond Shopping Centre. The area serves Newcastle with a district centre function.</p> <p>The area of Jesmond nearest the project contains parks and recreation space, with close proximity to the large shopping complex, residential area and Jesmond Park.</p>
Lambton	<p>Lambton is a residential suburb located around some of Newcastle’s main roads including Croudace Street, Griffiths Road, Turton Road and Newcastle Road.</p> <p>Elder Street provides Lambton with necessary mixed businesses. The street is not near a main road but is still successful in serving the local community. A local centre zone is identified along Elder Street and light industrial and business use fronting Griffiths Road in the eastern part of the suburb.</p> <p>Zoning maps indicate land within Lambton is primarily low density residential. There are small pockets of public (parks) and private (bowling club) recreation. The suburb has a large swimming centre, tennis facilities and multi-use paths that link to surrounding suburbs and Lambton heritage walk.</p> <p>Lambton houses two primary schools and one secondary school with a public library located on Morehead Street.</p> <p>The area of Lambton nearest the project contains bushland reserve.</p>

Suburb	Profile
New Lambton Heights/New Lambton	<p>New Lambton is a mostly residential area situated in the centre of Newcastle, providing easy access to all areas of the city. The suburb of New Lambton also contains commercial and retail uses. New Lambton's main commercial centre runs along Regent Street and Lambton Road with a smaller centre on Orchardtown Road. Blackbutt Reserve borders the project along Lookout Road and provides an extensive buffer to these residential areas. The suburb also contains a number of parks and children's facilities as well as picnic areas and walking tracks.</p> <p>New Lambton has a high percentage of person's ages less than five years and houses two infant schools and three primary schools.</p> <p>New Lambton Heights is a residential suburb that is located within both Newcastle LGA to the east and Lake Macquarie LGA to the west. A large portion of the suburb comprises the John Hunter Hospital precinct and bushland areas. Low density residential land is located along Lookout Road.</p> <p>New Lambton Heights Infants School borders the project to the South. The John Hunter Hospital precinct also houses Possum Place Child care centre as well as the John Hunter Children's Hospital and research institute.</p> <p>The area of New Lambton and New Lambton Heights nearest the project contains bushland reserve, John Hunter Hospital precinct and parking areas as well as residential areas.</p>
Rankin Park	<p>Rankin Park is a residential suburb that is located within both Newcastle LGA to the north and Lake Macquarie LGA to the south. Land within the suburb is zoned low density residential with small areas of environmental conservation and public recreation. Rankin Park contains George McGregor Park, a 24 hectare bushland reserve as well as Muranbarnbah Park which houses children's play equipment.</p> <p>The suburb contains one early education facility. The area of Rankin Park nearest the project contains George McGregor Park.</p>
Wallsend	<p>Wallsend is the hub of western Newcastle offering both commercial and residential spaces. Most of the residential land is low density.</p> <p>Wallsend has a large commercial district offering mixed businesses, supermarkets, takeaway outlets, banks and facilities. The area extends from Stockland Wallsend Plaza to the shops along Cowper and Nelson streets and is identified on land zoning maps as a local centre. Land surrounding the local centre is zoned as medium density residential.</p> <p>There are a large number of parks within the suburb and Summerhill Waste Management Centre takes up a large portion of the suburb. Land fronting Minmi Road is zoned as neighbourhood centre and light industrial land.</p> <p>The suburb contains a swimming and squash centre, two early education centres and childcare as well as one of Newcastle's largest libraries. Wallsend houses three primary schools and one high school.</p> <p>The area of Wallsend nearest the project contains residential areas.</p>

Suburb	Profile
Elernmore Vale	<p>Elernmore Vale benefits from good access to schools, shopping, and other Newcastle suburbs.</p> <p>A large portion of the suburb was previously part of the Gretley Colliery that is now closed.</p> <p>The suburb has numerous parks and reserve areas as well as an aquatic and fitness centre. It has its own shopping centre, Elernmore Vale Shopping Centre which contains a supermarket and small businesses.</p> <p>There are three childcare facilities in Elernmore Vale and two primary schools.</p> <p>The suburb is mostly low density residential land with Elernmore Vale Shopping Centre identified as a local centre and several educational establishments, reserves, parks and sporting fields are located in the suburb.</p> <p>The area of Elernmore Vale nearest the project contains residential space, bushland reserve and small areas of parkland.</p>

Source: Lake Macquarie City Council 2014 and Newcastle City Council 2014

2.3.3 Existing utilities

Major utilities in the proposed road corridor include:

- Ausgrid own and maintain electricity cables, including street lighting, low voltage cables and high voltage distribution cables
- Sewer, water supply and stormwater assets owned by Hunter Water Corporation and Newcastle City Council
- Gas assets owned and maintained by Jemena
- Telecommunication networks including optic fibre owned by Telstra, Optus and Ausgrid

2.4 Economic characteristics

2.4.1 Key industries, occupation and employment

Newcastle is the economic hub of the Hunter Region, accounting for about 30 per cent of the Hunter's developed industrial space and 80 per cent of the office space (Newcastle City Council 2014). Newcastle's economy has experienced significant change over the past twenty years; moving from an economy based on heavy industry to one that is now more diversified and based around the service sectors (Newcastle City Council 2014). This is reflected in the two largest single employers in Newcastle which are the Hunter New England Area Health Service and The University of Newcastle (Newcastle City Council 2013).

Despite the diversification of the economy, Newcastle still has an industrial focus and the Port of Newcastle is Australia's largest coal export port by volume (Newcastle City Council 2014). The Gross Regional Product is estimated at \$14.23 billion, which equates to 2.89% of the NSW Gross State Product. The manufacturing industry adds \$6885 million towards the gross revenue for Newcastle and is the highest contributor followed by construction with \$2849 million (Economic Profile 2016).

Employment data from ABS for 2011 shows that Newcastle had a total labour force of 74,541 persons aged 15 years and over (ABS 2011b). Of the total labour force, 57.6 per cent worked full-time, 30.8 per cent worked part-time and 5.8 per cent were away from work (ABS 2011b). The rate of unemployment in Newcastle in 2011 was 5.7 per cent.

In 2011, the main industry of employment in Newcastle was health care and social assistance which dominated 15.9 per cent of employment with 11,203 persons employed in the field (ABS 2011d). This was followed by retail trade (7339 persons), education and training (6636 persons) and manufacturing (6463 persons) (ABS 2011d). Newcastle's education and health care facilities are world class and serve a wider population of about 600,000 people and are a nationally recognised centre for medical and environmental research (Newcastle City Council 2013).

The most common occupations in Newcastle LGA included professionals (25.7 per cent), clerical and administrative workers (14.1 per cent), technicians and trades workers (13.7 per cent), community and personal service workers (10.5 per cent) and managers (9.9 per cent) (ABS 2011b).

The median weekly personal income for people aged 15 years and over in Newcastle LGA was \$563 (ABS 2011b). This was marginally higher than the average income reported for NSW which was \$561 (ABS 2011a). Compared to NSW, average household incomes in Newcastle were lower with \$1165 compared to \$1237 for the State.

The suburbs surrounding the project are self-sufficient in terms of commercial and retail facilities or are in close proximity to a local centre. Most suburbs have a mixed businesses area serving the local community. Local businesses and shopping precincts in proximity to the project are detailed in Appendix B.

Tourism statistics for a four-year annual average to the year ending September 2014 indicate that there were a total of 3,494,000 overnight and domestic day trip visitors to Newcastle LGA. This was about 4.4 per cent of the total visitors to NSW. The total spend from visitors was \$774 million, which is 2.9 per cent of the overall visitor spend across NSW. International and Domestic travellers visit Newcastle for holidays, visiting friends and relatives and for business. A main attraction for Newcastle is its surf beaches and coastal walks. It also has an interesting maritime history, art culture and emerging food scene. Most visitors to Newcastle use a private or company vehicle (Destination NSW 2014).

Lake Macquarie LGA economy represents 19 per cent of the revenue generated in the Hunter Region. Employment data from ABS for 2011 shows a total labour force of 88,251 persons (ABS 2011e). Most work full time (60.3 per cent) with a smaller percent working part-time (33.3 per cent). The rate of unemployment in Lake Macquarie in 2011 was 5.3 per cent.

The main occupation for Lake Macquarie was professionals (19 per cent) followed by technicians and trades (16.7 per cent). The key industries for Lake Macquarie in 2011 were health care and social assistance (14.5 per cent), retail trade (11.7 per cent) and manufacturing (10.3 per cent). The median weekly personal income was \$520 per week and the median household income was \$1,117 per week (ABS 2011e).

The largest growth in employment opportunities in Lake Macquarie occurred in the health, community and social services area. Across the city, retail, health, social and community services, and manufacturing remain strong job providers (Lake Macquarie 2013).

2.4.2 Local businesses surrounding the project

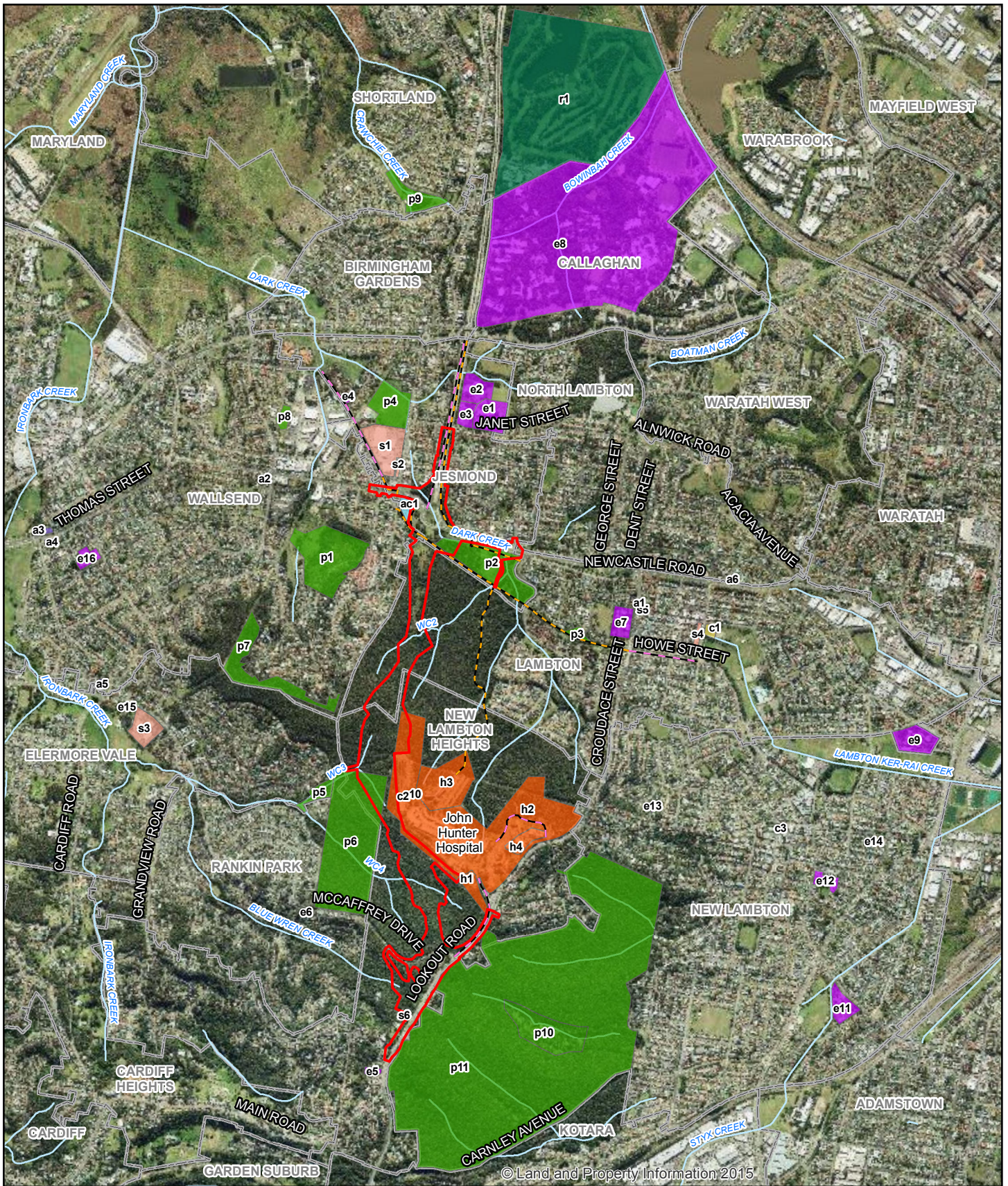
The following businesses are located near the project:

- Mobil petrol station with 7-Eleven located at 21 Croudace Street, Lambton
- Thomas Cooper beauty/hair salon located at 23 Croudace Street, Lambton
- Lambton shopping precinct located on Elder Street, Lambton
- Businesses within the John Hunter Hospital precinct
- Executive Villas Jesmond an accommodation facility located at 185-193 Newcastle Road, Jesmond
- Jesmond commercial centre including Stockland Jesmond Shopping Centre located on Blue Gum Road
- In addition to the petrol station on Croudace Street there are several petrol stations located in the surrounding area including:
 - BP petrol station on the corner of Newcastle Road and Douglas Street, Wallsend, to the west of the project.
 - Two Coles Express petrol stations on Thomas Street, Wallsend, to the west of the project. Coles Express Wallsend West (Newcastle Bound) and on the opposite side of the road is Coles Express Wallsend East.
 - Caltex petrol station on Cardiff Road near Croudace Road, Wallsend, to the west of project.
 - Caltex Australia petrol station corner of Newcastle Road and Nerong Road, North Lambton, to the east of the project.
- A music teaching and recording business located in a private residence at 136 Lookout Road

A drive through survey of businesses located along Lookout Road, Croudace Street and Newcastle Road confirmed that the Mobil petrol station with 7-Eleven located at 21 Croudace Street, Lambton, is the only business likely to attract passing trade on a regular basis.

The Mobil petrol station with 7-Eleven may partly receive passing trade from traffic on Croudace Street. Currently only southbound traffic on Croudace Street can access the service station due to a concrete median strip that divides the road to separate the southbound traffic from the northbound traffic. It is anticipated that the petrol station, due to the attached 7-Eleven, would attract local trade from the residents and visitors to the surrounding residential area, who would come to buy supplies from 7-Eleven.

Figure 2-4 provides a map showing the location of the key businesses and facilities.

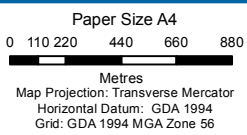


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LEGEND

- Construction footprint
- Suburb boundary
- Watercourse
- Existing on-road cycleway
- Existing shared path
- Accommodation
- Automotive
- Commercial (including retail)
- Community Facilities
- Education
- Hospital
- Public Open Space
- Recreation

Refer to figure 2-4b for social infrastructure information











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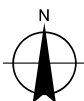
Social infrastructure and
businesses - sheet 1 of 2

Figure 2-4a

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 Data source: Aurecon: Construction footprint, 2016; LPI: DCTB, 2012, Aerial Imagery, 2016. Created by: tmorton, fmackay

Legend	Category	Name
	Accommodation	ac1) Executive Villas Jesmond
	Automotive	a1) Mobil Petrol Station and 7/11
		a2) BP Petrol
		a3) Coles Express petrol Station
		a4) Coles Express petrol station
		a5) Caltex petrol station
		a6) Caltex Australia petrol station
	Commercial (including retail)	s1) Stockland Jesmond Shopping Centre
		s2) Jesmond Commercial Centre
		s3) Elermore Vale Shopping Centre
		s4) Lambton Shopping precinct
		s5) Thomas Cooper Hair Salon
		s6) Home music business
	Community Facilities	c1) Lambton Library
		c2) Yallarwah Cottages
		c3) New Lambton Library
	Education	e1) Callaghan College Jesmond
		e10) Possum Place Child Care Centre
		e11) New Lambton South Primary School
		e12) St Therese's Primary School
		e13) Blinky Bill Child Care Centre
		e14) Goodstart Early Education Learning Childcare Centre
		e15) Elermore Vale Early Learning Centre
		e16) Wallsend Public School
		e2) Heaton Primary School
		e3) Jesmond Community Preschool
		e4) Jesmond Early Education Centre Inc
		e5) New Lambton Heights Infants School
		e6) Cambridge Hills Preschool
		e7) Lambton Public School
	e8) The University of Newcastle	
	e9) Lambton High School	
	Hospital	h1) Ronald McDonald House
		h2) John Hunter Hospital
		h3) Hunter Medical Research Institute
		h4) Newcastle Private Hospital
	Public Open Space	p1) Wallsend Brickworks Park
		p10) Richley Recreation Reserve
		p11) Blackbutt Reserve
		p2) Jesmond Park
		p3) Rudd Park
		p4) Heaton Park
		p5) Sygna Close Reserve
		p6) George McGregor Park
		p7) Invermore CI Reserve and Dangerfield Drive Reserve
	p8) Whitegates Reserve	
	p9) Northcott Park	
	Recreation	r1) Shortland Waters Golf Club

Paper Size A4
0 110 220 440 660 880
Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



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Social infrastructure and
businesses legend - sheet 2 of 2 **Figure 2-4b**

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Created by: tmorton, fmackay

2.5 Access and connectivity

Transport is a major theme of the *Newcastle 2030 Community Strategic Plan* (The City of Newcastle, 2013). The plan aims to reduce congestion and greenhouse gas emissions by increasing the efficiency of the transport network (Newcastle City Council 2013). The project is also consistent with several other strategic plans including the *NSW Long Term Transport Master Plan* (NSW Government 2012), *Hunter Regional Transport Plan* (Transport for NSW 2014), State Priorities and *National Road Safety Strategy 2011–2020* (Australian Transport Council 2012).

The road network surrounding the project currently suffers from traffic congestion and delays at key intersections. These issues are likely to worsen in the future as traffic volumes increase, with existing traffic volumes along this route currently in the order of 40,000 to 60,000 vehicles per day. Significant road user delays are experienced within the network, particularly during peak periods. At-grade intersections currently produce conflict points, resulting in congestion and traffic delays. The risk of maintaining the current configuration of the network is increased congestion and the costs to the community of that congestion. The existing road network within the John Hunter Hospital precinct is heavily congested and carries about 18,000 vehicles per day (in 2015). The primary access to the hospital is off Lookout Road via Kookaburra Circuit and this access is also subject to heavy congestion associated with peak travel times on Lookout Road.

The main destinations to the north of the project include The University of Newcastle, industrial areas and the main thoroughfare to the Pacific Highway for northbound traffic. Travellers using the bypass in a southbound direction would be accessing the John Hunter Hospital precinct and the southern suburbs of Newcastle. The project would create a direct route for the north-south movement of traffic and reduce congestion on the existing route (Lookout Road, Croudace Street and Newcastle Road) and from the east-west thoroughfare, Newcastle Road, which is used to access the Newcastle central business district.

There are a number of constraints along the existing route which include:

- Eleven sets of existing traffic lights on Lookout Road, Croudace Street and Newcastle Road from the McCaffrey Drive intersection to the existing roundabout at Jesmond on Newcastle Road.
- Sixteen uncontrolled intersections with local and regional roads.
- A large number of driveways to private properties, which reduce traffic speed below the posted speed limit and contribute to traffic congestion.
- A public school located on Croudace Street with 40 km/h school zones in place during peak hours.

2.6 Social and recreational infrastructure

There are a range of social infrastructure services and facilities, servicing the suburbs surrounding the project. These include educational facilities, hospitals and health services, and a considerable range of recreation facilities. Major facilities and services available in the surrounding suburbs were identified from council plans, reports and websites. These are detailed in Appendix B and those near the project are shown in Figure 2-4.

There are a number of parks and bushland reserves in the area, namely Jesmond Park, Brick Pit Park, Wallsend Brickworks Park, Rudd Park, Heaton Park, George McGregor Park, a quarry park on Birchgrove Drive, Richley Recreation Reserve and Blackbutt Reserve. These contain shared paths, pedestrian paths, walking tracks, picnic areas and sporting fields.

Jesmond Park is located immediately to the east of the project and is bounded by Newcastle Road to the north, Robinson Avenue to the east and the shared path to the south. The western boundary of the park is located to the east of the existing Jesmond roundabout and borders open space located in the road reserve of Newcastle Road (refer to further discussion in the following section). It occupies an area of about 8.4 hectares and is comprised of mature trees with a mown grass understorey and various garden beds. The park contains a range of facilities including a car park (off Robinson Avenue), concrete paths, playground areas, BBQ facilities, seating, picnic tables, shelters, public toilets, basketball court and a sports field with lights used mostly for soccer and cricket. A disc golf course consisting of nine holes (baskets) is located within the park. Four of the holes are located at the western end of the park, two are located in the central portion and a further three at the eastern end. Based on consultation to date with the Newcastle Disc Golf club and a review of the club website indicates the course is used regularly for informal competitions, and more formally on an occasional basis including annual events.

Land located generally south and west of the existing Jesmond roundabout forms an area of open space that is continuous with Jesmond Park. However, this land is not part of the designated park and is primarily owned by Roads and Maritime and forms part of the road reserve for Newcastle Road. Apart from the two most western disc golf holes, there is no other formal park infrastructure in this area.

George McGregor Park is located immediately to the west of the project and is bounded by McCaffrey Drive to the south and residential areas to the west. It occupies an area of about 24.3 hectares and is comprised entirely of native bushland. There is a formal walking trail within the park.

There are three formal shared paths near the project as follows:

- A shared path runs along the southern edge of Jesmond Park providing an off-road east-west connection between Croudace Street and Newcastle Road, near its intersection with Blue Gum Road.
- A shared path that provides a north-south connection between the John Hunter Hospital precinct and the shared path in Jesmond Park.
- A shared path that provides a north-south connection along the eastern edge of the existing Jesmond to Shortland section of the Newcastle Inner City Bypass. This path provides a north-south connection between Coles Street and University Drive. It connects with an overbridge on the existing bypass section providing access across the bypass about 270 m north of the existing Jesmond roundabout.

The *Newcastle Cycling Strategy and Action Plan* (The City of Newcastle 2012) proposes a number of on-road and off-road cycling routes near the project (Figure 2-5).

There are a number of fire trails and other informal tracks and trails within the bushland through which the project passes that are currently used for general bushwalking, mountain biking and access to the hospital precinct. Some of these informal trails are mapped and described on biking group websites such as the New South Wales Mountain Bike (NSWMTB). The website states that the informal trails near Jesmond Park and Rankin Park will “one day be used as part of the bypass” (NSWMTB 2015).

A bicentennial walking trail established by Newcastle City Council is a short walking loop located through the bushland area from the existing shared path that connects John Hunter Hospital to Jesmond Park. The trail uses existing fire trails and informal tracks.

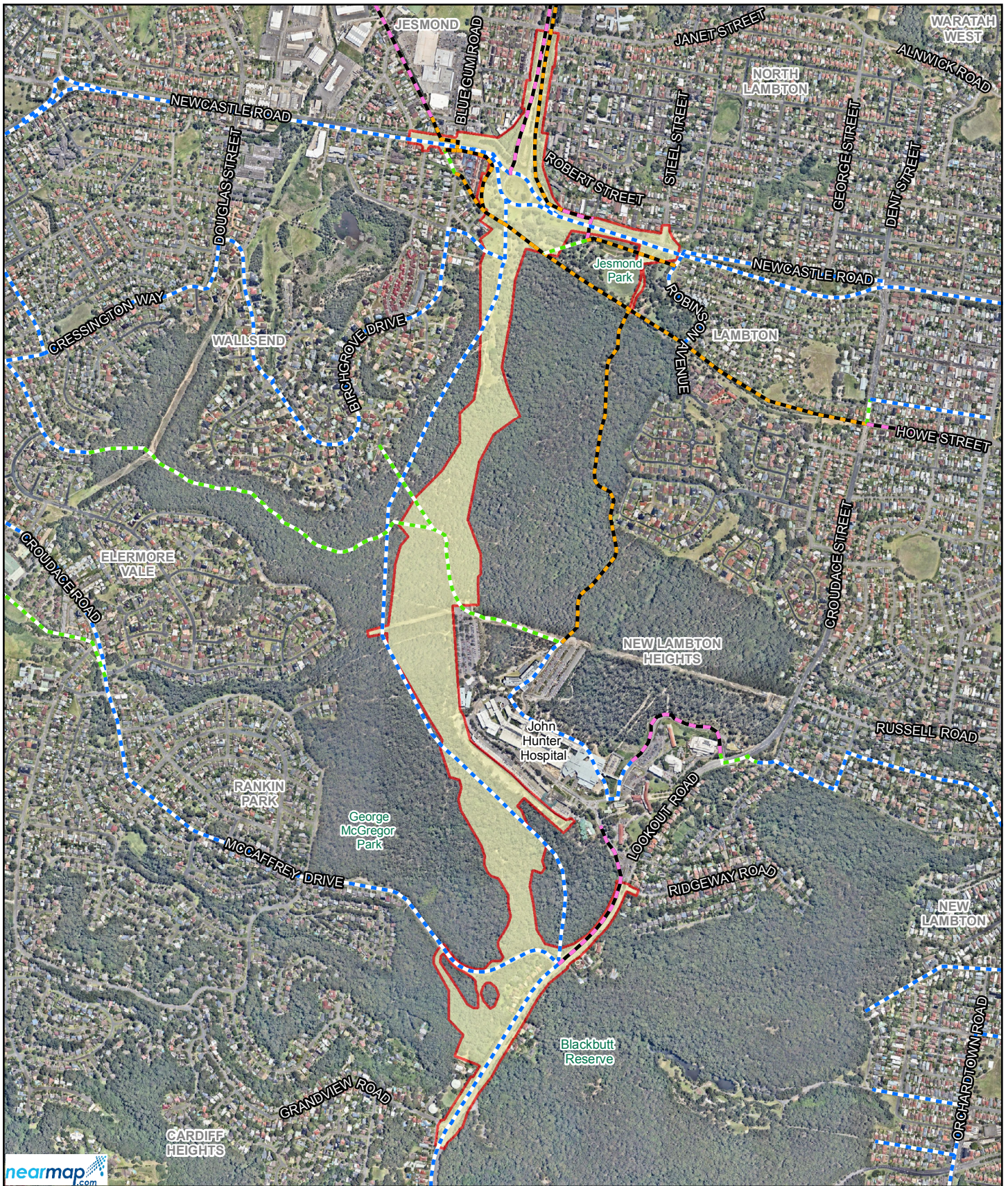
The University of Newcastle is also located on University Drive, Callaghan, about 500 m to the north-east of the project’s northern extent.

Key social infrastructure in the suburbs surrounding the project are listed in Table 2-2.

Each suburb has at least one educational facility, either child care services, pre-school, primary school or secondary school. Several of the suburbs including Elermore Vale, Wallsend, Lambton and Jesmond have aged care facilities. There are libraries located in Wallsend, Lambton and New Lambton and community centres in Elermore Vale, Wallsend, Lambton and Jesmond.

Table 2-2 Key social infrastructure within surrounding suburbs

Suburb	Key social infrastructure
Jesmond	<ul style="list-style-type: none"> • Jesmond Community Preschool, Janet Street, Jesmond • Jesmond Early Education Centre, Mordue Parade, Jesmond • Heaton Primary, Janet Street, Jesmond • Jesmond Primary, Ralph Street, Jesmond • Callaghan College, Janet Street, Jesmond
Lambton	<ul style="list-style-type: none"> • Lambton Public School at Croudace Street, Lambton • Lambton Library, Morehead Street, Lambton • Lambton High School, Young Street, Lambton • St John's Primary School, Dickson Street, Lambton
New Lambton Heights/ New Lambton	<ul style="list-style-type: none"> • John Hunter Hospital, Hunter Medical Research Institute and Newcastle Private Hospital • Ronald McDonald House located within the John Hunter Hospital precinct • Possum Place Child Care Centre located within the John Hunter precinct • Yallarwah Cottages located within the John Hunter precinct • New Lambton Heights Infants School, Lookout Road, New Lambton Heights • New Lambton Library, Regent Street, New Lambton • New Lambton South Primary, St James Road, New Lambton • St Therese's Primary, Bourke Street, New Lambton • Blinky Bill Child Care Centre, Hawkins Street, New Lambton • Goodstart Early Learning Childcare Centre, Lambton Road, New Lambton
Rankin Park	<ul style="list-style-type: none"> • Cambridge Hills Pre-school, McCaffrey Drive, Rankin Park
Wallsend	<ul style="list-style-type: none"> • Wallsend Community Pre-school Kindergarten, Nash Street, Wallsend • Wallsend Orana Community Pre-school, Bean Street, Wallsend • Wallsend District Library, Bunn Street, Wallsend • Wallsend Primary, Martindale Street, Wallsend • St Patricks Primary, Macquarie Street, Wallsend • Callaghan College, Macquarie Street, Wallsend
Elermore Vale	<ul style="list-style-type: none"> • Elermore Vale Pre School, Jubilee Road, Elermore Vale • Elermore Vale Early Learning Centre, Croudace Road, Elermore Vale



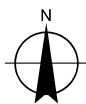
LEGEND

- Construction footprint
- Existing on-road cycleway
- Existing shared path
- Shared path (Newcastle Cycling Strategy, 2012)
- On-road cycleway (Newcastle Cycling Strategy, 2012)

Council proposed

- Shared path (Newcastle Cycling Strategy, 2012)
- On-road cycleway (Newcastle Cycling Strategy, 2012)

Paper Size A4
 0 50 100 200 300 400 500
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



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Cycling routes in the vicinity of the project

Figure 2-5

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Data source: Nearmap: Aerial Imagery, 20160331; Aurecon: Construction footprint, 2016; LPI: DTDB, 2012; PB: Cycling routes, 2015. Created by: tmorton, fmackay

2.7 Community values

The project is located wholly within the Newcastle LGA, and is located close to the boundary of Lake Macquarie LGA at its southern extent. Lake Macquarie is an area of influence to the project area and is located south of Newcastle. It shares its borders with Newcastle LGA along the suburbs of New Lambton Heights, Rankin Park and Elernmore Vale. Lake Macquarie spans 780 square kilometres making it the largest city in the Lower Hunter and fourth-most populous in NSW (Lake Macquarie Council 2013).

Newcastle is located in the Hunter Region of NSW, about 160 km north of Sydney (Newcastle City Council 2014). It is Australia's second-oldest city and houses some of the nation's most significant heritage sites. The *2030 Community Strategic Plan* (The City of Newcastle 2013) identifies Newcastle as a city rich in history, arts and culture, where residents enjoy the benefits and amenity of a large city and the pace and lifestyle of a regional town. The city acts as a regional capital and economic, administrative and cultural centre for the surrounding areas (The City of Newcastle 2013).

The *2030 Community Strategic Plan* also identifies key strategic directions for Newcastle, one of which is being a connected city. The plan states that this will ideally involve a transport network and services that will be well connected and convenient.

The surrounding localities of Rankin Park, New Lambton, Lambton and Jesmond are generally leafy and hilly residential suburbs that are well connected with the surrounding road network. The local community value the proximity to the bushland and parks and the associated quiet and active lifestyle. The local community have identified the desire to retain the bushland character of the area including the preservation of trees and improve cycling and pedestrian amenity (Newcastle City Council, 2015). The Newcastle Inner City Bypass corridor has been reserved since 1957, however it is important to consider the existing community values regarding the existing vegetation and the bushland character of the area.

2.8 Summary

The project is located within the Newcastle LGA and spans the suburbs of Jesmond, Lambton and New Lambton Heights. The suburbs which surround the project are mostly low to medium density residential and include a variety of reserve, parkland, business precincts, schools, childcare, aged care, recreation facilities and sporting facilities as well as healthcare infrastructure.

The project is located within an urban setting, surrounded by large areas of bushland reserve and parkland. Undeveloped bushland areas comprise most of the construction footprint and is inclusive of a small portion of George McGregor Park and other bushland areas zoned for environmental management and road corridor. These open space areas are used by local community and surrounds for recreation and fitness including bushwalking and bike riding. Other recreational activities and spaces are also present within parkland such as picnic areas and children's play spaces with a skate park and sporting field located in Jesmond Park.

The suburbs that surround the project are mostly low to medium density residential with the John Hunter Hospital precinct situated immediately to the east. The facilities within this precinct extend to a childcare centre, residential cottages for Indigenous families and facilities to cater for the workforce such as cafes and eateries. This space incorporates large parking areas and transport hub with a bus terminus and helicopter pad for use by Westpac helicopter.

The project traverses a number of residential properties along Lookout Road, most of which have already been acquired by Roads and Maritime. Nearby businesses and forms of social infrastructure that directly surround the project include schools to the south within New Lambton Heights, recreation and parkland as well as Stockland Jesmond Shopping Centre and surrounding businesses to the north within Jesmond.

These facilities cater for the local residential population and provide local amenities and recreation. Eateries, grocery store outlets, general retail and petrol stations are located within Jesmond and used regularly by those living in the surrounding suburbs. Local schools are populated by children living in surrounding suburbs as are the recreation areas. The position of these facilities, without nearby competition, hold a high level of importance within the community. The lack of competitive trade means they are not reliant on passing trade in order to operate, instead housing consistent and loyal user groups.

3. Impact identification and assessment

This section describes the potential socio-economic benefits and impacts that may arise from the construction and operation of the project and assesses their significance according to the criteria set out in Section 1.6.2.

3.1 Employment opportunities

3.1.1 Construction

Construction of the project is likely to engage a workforce which is expected to peak at about 100 personnel per day. The construction period is anticipated to take about 30 months. It is expected that construction would generate employment opportunities in the study area.

In addition, the construction of the project would require a number of goods and services, which would provide business development and additional employment opportunities in the study area. These employment and business development opportunities would also generate flow on benefits in the region.

It is possible that some specialist workforce may come from outside the regional study area. The non-resident workforce would generate demand for accommodation services and businesses such as eateries, restaurants and retail.

3.1.2 Operation

The project would support the improvement of the NSW, regional and local economy. Completion of the Newcastle Inner City Bypass would improve road traffic efficiency for regional road users, including commercial freight movements through Newcastle and connecting to key freight corridors along the Pacific Highway and New England Highway. The project would also support the economy of Newcastle and the region by reducing congestion on primary routes to major employment centres in Bennetts Green, Charlestown and Jesmond. This link would increase the productivity of Newcastle and the region by reducing travel distance, time and delays, which would also provide efficiencies for local businesses.

3.2 Impacts on local businesses

3.2.1 Construction

Construction activities have the potential to alter existing amenity in the areas immediately surrounding the project (Section 3.5). It is possible that changes to amenity due to construction activities, especially an increase in noise levels could temporarily impact on the accommodation business at Executive Villas Jesmond.

The noise assessment carried out for the project (GHD, 2016a) predicts that construction noise at night time is likely to cause sleep disturbance, however, the assessment also notes that existing road traffic noise from Newcastle Road already exceeds the sleep disturbance criteria at night and are subject to high noise levels during the day. In addition, the Executive Villas Jesmond may experience potential business benefits from the demand for accommodation generated by the non-resident project construction workforce who may choose to stay at the Executive Villas during the construction period.

The existing access to the Executive Villas Jesmond is on Newcastle Road. During construction there would be temporary impacts on the access to the Executive Villas Jesmond. These would be limited to short-term restrictions when work is occurring in the immediate vicinity. Roads and Maritime would consult with Executive Villas Jesmond to maintain access at all times.

The construction of the project would increase demand of goods and services to be supplied for the project, which would potentially increase regional business opportunities. During construction, there may be temporary traffic disruptions however, these are not expected to be significant.

The project would not involve any work along Croudace Street and therefore there are no expected impacts to businesses located along Croudace Street or other streets that connect with it. It is possible that the construction workforce could visit these businesses, and others in near the project, to purchase goods and services, therefore providing benefits to local businesses for the duration of construction.

For the music business located in a private residence on Lookout Road, during construction there would be temporary impacts on access to the property and availability of on-street parking spaces for clients, which are typically in demand during the early morning (before school) and afternoon/evening (after school) periods. These would be limited to short-term restrictions when work is occurring in the immediate vicinity.

Construction would also result in increased noise and dust levels, potentially resulting in amenity impacts to this business. The noise assessment carried out for the project (GHD, 2016a) predicts that construction noise is likely to exceed the relevant noise criteria at this business.

Potential access and amenity impacts to these businesses will be managed through implementation of a construction environmental management plan, construction noise and vibration management plan, including an out of hours work procedure, and construction traffic management plan. Roads and Maritime will continue to consult with the property owners during detailed design and construction to minimise potential impacts. As such, there are not expected to be any significant impacts to these businesses.

3.2.2 Operation

The Executive Villas Jesmond would experience slightly reduced road traffic noise levels while the music business located in a private residence on Lookout Road would experience a minor increase in road traffic noise levels however, they already experience a high level of noise from existing traffic on these busy roads (GHD, 2016a).

Driveway access to these businesses would be reinstated during operation and adjusted to suit the new road alignment. However, the existing informal on-street parking arrangements in the shoulder of Lookout Road in front of the music business would no longer be available due to road widening in this area. Any vehicles would be required to park within the property, or in other nearby streets such as Grandview Road. Pedestrian access would continue to be available along the western edge of Lookout Road from the south.

A number of studies related to the socio-economic impacts of highway bypasses have revealed that key socio-economic impacts of town bypasses on local businesses are generally related to loss of passing trade and employment opportunities. This typically includes businesses such as food stores, eateries (such as take-aways, cafes, pubs and restaurants), accommodation (including motels, hotels, and pubs), service stations, automotive and other retail establishments like gifts and small items (Leong 2000, Parolin 2011, Parolin, 2012). The highway bypass studies mainly refer to impacts on small towns with population less than 5000 persons, where highway dependent businesses have the potential of losing passing trade once the project is operational (Parolin 2011 and Parolin, 2012).

In the case of the project, existing traffic conditions show that currently the north-south traffic uses Croudace Street and Lookout Road as a thoroughfare. These are inner city roads servicing the local suburbs and residential areas, as well as providing the north-south connectivity beyond the project. Traffic data shows that in 2015 a daily average of 41,800 vehicles used Croudace Street (north of Elder Street) of which 22,500 vehicles (54 per cent) are northbound and 19,300 vehicles (46 per cent) are southbound (Table 3-1).

Table 3-1 Forecast daily traffic volumes for Croudace Street (north of Elder Street)

Direction of travel	2015 No project	2020 No project	2020 With project	2030 No project	2030 With project
Northbound	22,500	23,500	13,600	25,200	14,600
Southbound	19,300	20,200	11,600	21,600	12,600
Total	41,800	43,700	25,200	46,800	27,200

Table 3-1 shows that during operation traffic volumes on Croudace Street would decrease to 25,200 in 2020 and 27,200 in 2030. The data also shows that if the project wasn't constructed, traffic volumes would increase, resulting in further congestion, which could impact on nearby businesses.

A drive through survey of businesses located on the existing route (Lookout Road, Croudace Street and Newcastle Road) confirmed that the Mobil petrol station with 7-Eleven located at 21 Croudace Street, Lambton is the only business that could be classified as businesses that attract passing trade. Other businesses located along the existing route such as the hair/beauty salon, Lambton shopping precinct located on Elder Street and the Executive Villas Jesmond located at 185-193 Newcastle Road (Section 2.4.2) are destination business and are not businesses that attract a high proportion of passing trade and therefore would be unlikely to be impacted by the project.

Currently only southbound traffic on Croudace Street can access the Mobil petrol station due to a concrete dividing median. This would not be changed by the project. Daily average southbound traffic data on Croudace Street shows (Table 3-1) that in 2020 after the construction of the project, there would be a 40 per cent reduction in average daily traffic when compared with the 2015 average daily traffic and in 2030 there would be a 35 per cent reduction.

While not all southbound vehicles would use the Mobil petrol station with 7-Eleven, it is anticipated that there would be some small reduction in trade due to the drop in passing southbound traffic on Croudace Street. There is also potential for a small increase in trade due to reduced congestion on Croudace Street. However, any potential changes in trade are not expected to be significant and local trade is expected to continue from the residents and visitors to the surrounding residential area, from the traffic accessing the Lambton Public School (located opposite the petrol station) and from the traffic that would continue to use Croudace Street.

3.3 Impacts on land use

3.3.1 Construction

Property acquisition

The project would require acquisition of property, which in some cases would result in a change in land use. The impacted parcels of land are listed in Table 3-2 and shown on Figure 3-1. Impacts on key land uses are discussed further in the following sections. The project would directly impact about 57.7 hectares (most of which is publicly owned (about 98 per cent)) that is owned as follows:

- Roads and Maritime – 23.4 hectares
- Residential/private – 1.3 hectares
- Newcastle City Council – 11 hectares
- Hunter New England Local Health District – 18.5 hectares
- Hunter Water Corporation – less than 0.1 hectares
- NSW Department of Trade and Investment (Crown Land Division) – 3.4 hectares

Most of the land that would be impacted by the project is designated as a road corridor for the project and is either already owned by Roads and Maritime or by other Government agencies. A number of other properties have also been acquired by Roads and Maritime during planning for the project.

The extent of property acquisition would be confirmed during the detailed design phase. Based on the concept design the impact of land acquisition will be assessed in accordance with the *Land Acquisition Information Guide* (Roads and Maritime, 2014) and the *Land Acquisition (Just Terms Compensation) Act 1991*. Impacts on key land uses are discussed in the following sections. Potential impacts to adjoining land uses associated with amenity are discussed in Sections 3.5 and 3.6.

Residential/private properties

The project would directly impact on 16 residential/private lots. Roads and Maritime have already acquired 14 of these lots, on which there are nine existing houses. All except one of the 14 acquired lots are zoned for the project (SP2 Infrastructure (Classified Road)) under the *Newcastle Local Environmental Plan 2012*. The other lot is zoned for residential purposes (R2 Low Density Residential), but is currently partially cleared bushland with the residence located on an adjoining lot.

The two remaining residential/private lots would be subject to acquisition as follows:

- Total acquisition of one privately owned lot, which is partially zoned as SP2 Infrastructure (Classified Road) and E3 Environmental Management and is currently a cleared paddock used to keep a horse. This lot includes shelters to house the horse but does not include a residential building. Acquisition of this lot would require the owner to find alternative property to continue this activity. The owner of this property lives on the adjoining lot which will not be subject to acquisition.
- Partial acquisition of one privately owned lot (24 per cent of the lot) which is zoned as E3 Environmental Management. The lot is entirely vegetated and has steep topography. Access to the property is via the Marshall Street road reserve off McCaffrey Drive and this would not be affected by the project. Partial acquisition of the lot is not likely to impact on the existing or future function of the remaining lot as it is bushland. Access to the adjoining area of this property is not expected to be affected by the project.

Roads and Maritime Services will carry out consultation with the affected landowners subject to further acquisition during the detailed design stage of the project.

Bushland, parks and open spaces

The project traverses large areas of publicly owned remnant bushland between Lookout Road and the southern boundary of Jesmond Park. The impacted areas are owned by Roads and Maritime Services, Newcastle City Council, Hunter New England Local Health District and NSW Department of Trade and Investment (Crown Lands Division). These areas are either zoned SP2 Infrastructure (Classified Road or Health Services Facility) or E3 Environmental Management.

Excluding George McGregor Park, the impacted areas are informally used for bushwalking and mountain bike riding. While some of the impacted area is zoned as road corridor, the project would result in a change to this existing land use. The adjoining large area of bushland would continue to be available for these activities (refer to Sections 3.4 and 3.6 for impacts on trails and shared paths).

The project would acquire about 2.8 hectares (12 per cent) from the north-eastern corner of George McGregor Park. This park is heavily vegetated and includes a formal walking trail which would not be impacted by the project. Access to the park would not be impacted and would still be available from surrounding local streets. The remaining areas of George McGregor Park would continue to be available for recreational use and it is unlikely that the loss of a small portion of land would impact on the existing activities at the park. Potential impacts associated with amenity are discussed in Sections 3.5 and 3.6.

At the northern end the project traverses open grassed areas with scattered mature trees that is owned by Roads and Maritime and The Commissioner of Main Roads. This land forms part of the road corridor of Newcastle Road and currently provides a continuation of the open space contained in Jesmond Park (owned by Newcastle City Council). The project would require acquisition of about 0.25 hectares (three per cent) of land that is designated as being Jesmond Park. This impacted area is partially zoned as SP2 Infrastructure (Classified Road) for the project, with the balance zoned RE1 Public Recreation.

While most of the open space area near Jesmond Park impacted by the project is part of the proposed road corridor, the project would result in loss of about 1.5 hectares of open space resulting in a change in land use. Subject to detailed design, the land not directly impacted by the new road infrastructure, could potentially remain as open space following construction of the project.

No formal recreational facilities are located in the impacted area of Jesmond Park, with the exception of part of the Disc Golf course. The project would result in the permanent loss of two Disc Golf holes, while a further two holes would be temporarily impacted by construction activities. Impacted infrastructure is comprised of the baskets (used as holes) and signs, used to indicate the tees (or hole start position). The remaining five holes would not be directly impacted. During detailed design, Roads and Maritime would carry out further consultation with the Newcastle Disc Golf Club and Newcastle City Council regarding potential relocation of the affected holes.

The balance of the designated adjoining Jesmond Park would remain available for recreational activities. Access to the park would not be impacted and would still be available from surrounding local streets. Potential impacts associated with amenity are discussed in Sections 3.5 and 3.6.

John Hunter Hospital precinct

Hunter New England Local Health District owns extensive parcels of land (about 119 hectares) near the project encompassing the John Hunter Hospital precinct and bushland areas to the north and south of the main hospital buildings. The project would acquire about 18.4 hectares from three lots. These lots are either currently heavily vegetated or partially/totally cleared and apart from fire trails and minor drainage infrastructure do not contain any buildings or other substantial improvements.

The impacted lots are zoned under the *Newcastle Local Environmental Plan 2012* as SP2 Infrastructure (Classified Road), SP2 Infrastructure (Health Services Facility) or for environmental purposes (E3 Environmental Management).

Roads and Maritime has carried out extensive consultation with Hunter New England Local Health District and NSW Health Infrastructure regarding the project and future plans for expansion of the hospital precinct. As a result, there are no expected impacts on the function and activities, or possible future expansion, of the hospital precinct.

Residual public lands

The direct property impacts due to the project would result in the following areas of potentially residual public land:

- Land to the west of the project (property IDs 6, 26 and 28 in Table 3-2 and Figure 3-1) previously acquired by Roads and Maritime for the alignment that was displayed in 2007 (refer to Chapter 4 for further discussion) comprising a combined area of about 14.01 hectares. Access to this land would still be available along existing tracks from the residential streets to the west of the project and from the fire trail connections provided off the bypass.
- Land currently owned by Roads and Maritime to the south of McCaffrey Drive (property ID 29 in Table 3-2 and Figure 3-1) comprising an area of about 1.02 hectares.
- Land currently owned by Hunter New England Local Health District to the south of the John Hunter Hospital precinct that would be severed by the project (property ID 33 in Table 3-2 and Figure 3-1) comprising a combined area of about 17.6 hectares. Access to this land would still be available along existing fire trails and from the fire trail connections provided off the bypass.
- The Marshall Street undeveloped road reserve north of McCaffrey Drive and south of the project (property ID 44 in Table 3-2 and Figure 3-1) comprising an area of about 1.01 hectares.
- Open space located south-west of the existing Jesmond roundabout. This land is currently owned by The Commissioner of Main Roads and Hunter Water Corporation (property ID 38, 39, 40 and 41 in Table 3-2 and Figure 3-1). The land currently forms a continuation of the open space located to the east within the designated boundary of Jesmond Park. The project would sever this area from Jesmond Park although access would still be available from surrounding residential streets. Pedestrian crossings would also be provided at the northern interchange via traffic lights.
- A portion of the north-eastern corner of George McGregor Park that would be located within the proposed road corridor but outside the proposed operational fence line (property ID 31 in Table 3-2 and Figure 3-1) comprising an area of about one hectare.

Areas of potentially residual public land would be confirmed during the detailed design phase and subject to property acquisition negotiations. Where there is residual Roads and Maritime land not required for the project or other future road requirements, consultation with Newcastle City Council and other Government agencies will be carried out to identify possible land swaps or transfers. This would provide for ongoing and appropriate management of these areas, and an opportunity for enhancements to existing environmental conservation areas and recreational activities.

All other publicly owned land outside the proposed road corridor would remain with the existing owner and is continuous with larger landholdings surrounding the project. As a result, management of these areas would not be impacted by the project.

Responsibility for management of all publicly owned lands, residual or otherwise, will remain with the owner of that land.

Mineral resources

A search was carried out of the Department of Resources, Minerals and Energy (MinView) on 7 July 2016. There is no current coal, petroleum or mineral titles or other applications that exist over the study area. A petroleum exploration licence (PEL 0458) held by Hunter Gas Pty Ltd that encompassed the study area, expired on 6 June 2016.

The project is not expected to impact on any future coal mining as the mineable coal seams beneath the proposed road corridor have been historically mined. The risk of subsidence associated with these mine workings has been subject to detailed investigations as part of the design of the project. The remaining coal beneath the project is considered to be non-economical for mining and is unlikely to be subject to future mining applications. Excavation of cuttings for the project would encounter some shallow coal seams and these would be extracted during excavation, blended with other excavated materials and deep buried in the road embankment where feasible and/or disposed off-site at a licensed facility.

Utilities

The project would impact on utilities in the proposed road corridor, including electricity transmission, telecommunications, sewer, water, gas and stormwater. This would require adjustment to existing services, relocation of some services and/or the implementation of protection measures. No impacts on infrastructure or utilities are expected outside the construction footprint.

The relocation or adjustment of infrastructure and utilities for the project may result in some temporary disruptions for nearby properties during this work. However, careful planning and consultation with impacted owners would minimise these disruptions as far as possible. This would include:

- Communicating with nearby communities about the timing and duration of potential disruptions.
- Ongoing consultation with service providers during the detailed design phase to verify specific impacts on infrastructure and utilities.

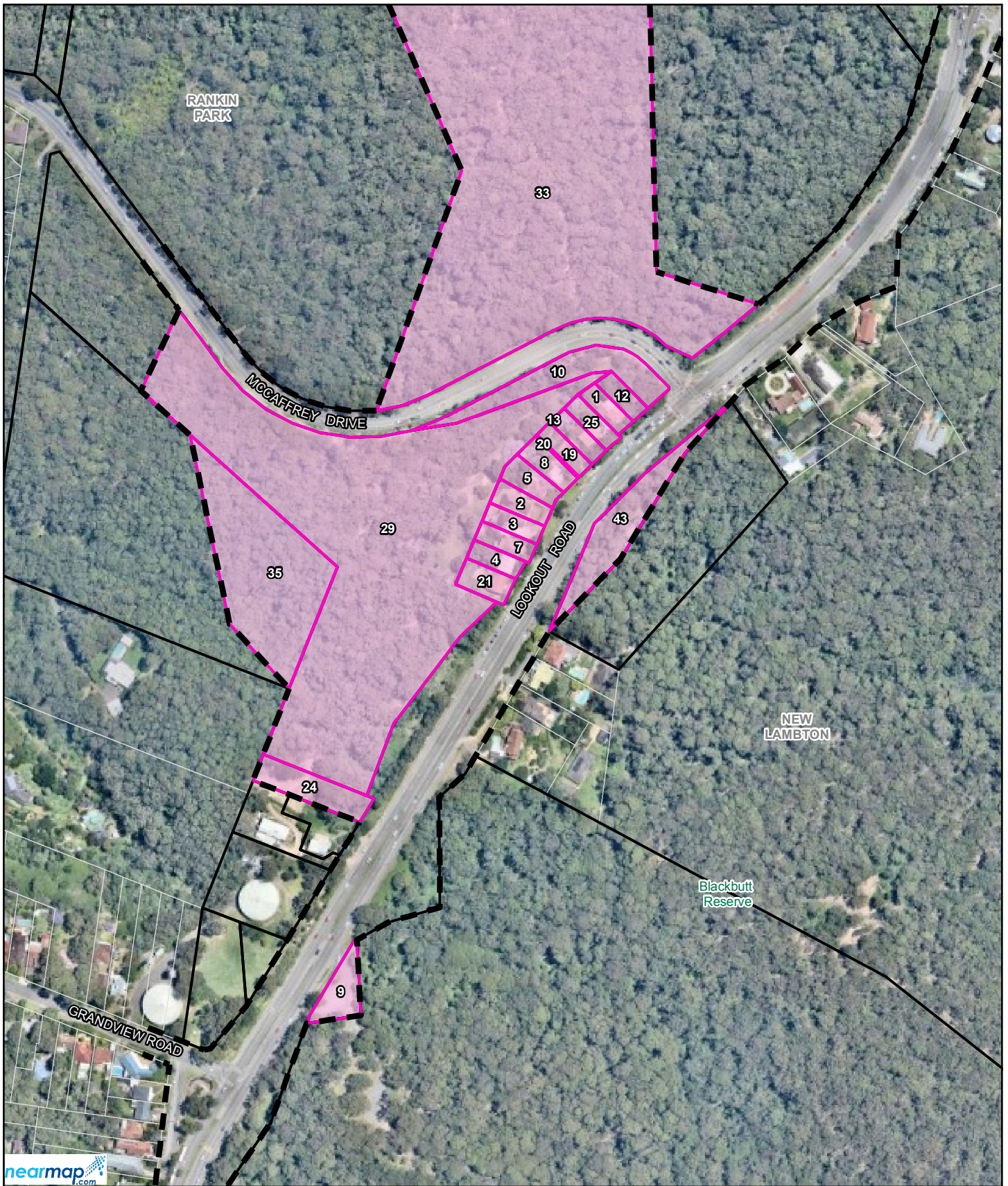
Table 3-2 Direct property impacts

Map ID	Lot and DP	Existing land use	Ownership	Total area of lot (hectares)	Area of lot directly impacted (hectares)	Percentage of lot directly impacted
1	Lot 11 DP19357	Residential	Roads and Maritime	0.07	0.07	100%
2	Lot 5 DP19357	Residential	Roads and Maritime	0.08	0.08	100%
3	Lot 4 DP19357	Residential	Roads and Maritime	0.07	0.07	100%
4	Lot 2 DP19357	Residential	Roads and Maritime	0.06	0.06	100%
5	Lot 6 DP19357	Residential	Roads and Maritime	0.09	0.09	100%
6	Lot 10 DP826092	Bushland	Roads and Maritime	6.62	5.31	80%
7	Lot 3 DP19357	Residential	Roads and Maritime	0.07	0.07	100%
8	Lot 7 DP19357	Residential	Roads and Maritime	0.08	0.08	100%
9	Lot 13 DP263568	Road reserve (car park)	Newcastle City Council	0.13	0.13	100%
10	Lot 201 DP1065934	Bushland	Newcastle City Council	0.32	0.32	100%
11	Lot 1 DP341979	Cleared paddock	Private	0.37	0.37	100%
12	Lot 1 DP617605	Residential	Roads and Maritime	0.06	0.06	100%
13	Lot 1 DP128323	Residential	Roads and Maritime	0.07	0.07	100%
14	Lot 1 DP627240	Shared path	Newcastle City Council	0.77	0.22	28%
15	Lot 5 DP115	Road reserve (Newcastle Road)	The Commissioner of Main Roads	0.07	0.07	100%
16	Lot 2 DP627240	Shared path	Newcastle City Council	0.42	0.14	34%
17	Lot 6 DP115	Road reserve (Newcastle Road)	The Commissioner of Main Roads	0.07	0.07	100%
18	Lot 1 DP396221	Jesmond Park	Newcastle City Council	8.34	0.25	3%
19	Lot B DP362746	Residential	Roads and Maritime	0.06	0.06	100%
20	Lot A DP362746	Residential	Roads and Maritime	0.01	0.01	100%
21	Lot 1 DP656800	Residential	Roads and Maritime	0.09	0.09	100%

Map ID	Lot and DP	Existing land use	Ownership	Total area of lot (hectares)	Area of lot directly impacted (hectares)	Percentage of lot directly impacted
22	Lot 1 DP774078	Bushland	Newcastle City Council	36.68	6.86	19%
23	Lot 5 DP1040350	Road reserve (Newcastle Road)	Roads and Maritime	1.31	1.31	100%
24	Lot 1 DP516548	Residential (partially cleared bushland)	Roads and Maritime	0.19	0.19	100%
25	Lot 1 DP626142	Residential	Roads and Maritime	0.07	0.07	100%
26	Lot 13 DP826092	Bushland	Roads and Maritime	4.64	0.91	20%
27	Lot 10 DP1040350	Road reserve (existing Jesmond to Shortland section of the Newcastle Inner City Bypass)	Roads and Traffic Authority of New South Wales	0.77	0.77	100%
28	Lot 14 DP826092	Bushland	Roads and Maritime	10.84	1.87	17%
29	Lot 200 DP1065934	Bushland	Roads and Maritime	5.18	4.16	80%
30	Lot 202 DP1176551	Bushland	Hunter New England Local Health District	40.51	1.04	3%
31	Lot A DP344454	Bushland (George McGregor Park)	Newcastle City Council	24.26	2.83	12%
32	Lot 6 DP1040350	Open space	Newcastle City Council	0.19	0.19	100%
33	Lot 41 DP1176191	Bushland	Hunter New England Local Health District	31.6	14	44%
34	Lot 11 DP1040350	Road reserve (existing Jesmond to Shortland section of the Newcastle Inner City Bypass)	Roads and Traffic Authority of New South Wales	0.32	0.32	100%
35	Lot A DP442174	Bushland	Private	4.04	0.96	24%

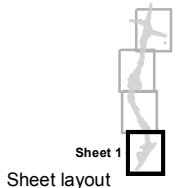
Map ID	Lot and DP	Existing land use	Ownership	Total area of lot (hectares)	Area of lot directly impacted (hectares)	Percentage of lot directly impacted
36	Lot 11 DP826092	Crown road (bushland)	NSW Department of Trade and Investment (Crown Lands Division)	2.62	2.62	100%
37	Lot 9 DP826092	Bushland	Roads and Maritime	6.07	6.07	100%
38	Lot 2 DP510311	Road reserve (undeveloped)	The Commissioner of Main Roads	0.61	0.61	100%
39	Lot 8 DP13004	Road reserve (undeveloped)	The Commissioner of Main Roads	0.22	0.22	100%
40	Lot 9 DP1117538	Road reserve (undeveloped)	The Commissioner of Main Roads	0.16	0.16	100%
41	Lot 169 DP1145886	Easement	Hunter Water Corporation	0.07	0.07	100%
42	Lot 401 DP1197237	John Hunter Hospital precinct (impacted portion is bushland/disturbed)	Hunter New England Local Health District	47	3.5	7%
43	Lot 183 DP599648	Road reserve (undeveloped bushland)	The Commissioner of Main Roads	0.34	0.34	100%
44	n/a	Crown road (bushland)	NSW Department of Trade and Investment (Crown Lands Division)	1.29	0.28	22%
45	n/a	Road reserve (undeveloped)	Newcastle City Council	0.04	0.04	100%
46	n/a	Road reserve (undeveloped)	Roads and Traffic Authority of New South Wales	0.01	0.01	100%
47	n/a	Road reserve (undeveloped)	Roads and Traffic Authority of New South Wales	0.01	0.01	100%

Map ID	Lot and DP	Existing land use	Ownership	Total area of lot (hectares)	Area of lot directly impacted (hectares)	Percentage of lot directly impacted
48	Lot 30 DP13663	Road reserve (undeveloped)	Roads and Traffic Authority of New South Wales	0.09	0.09	100%
49	n/a	Road reserve (undeveloped)	NSW Department of Trade and Investment (Crown Lands Division)	0.47	0.47	100%
50	n/a	Road reserve (undeveloped)	NSW Department of Trade and Investment (Crown Lands Division)	0.04	0.04	100%

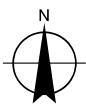


LEGEND

- Property acquisition
- Lot boundaries
- Impacted lot
- Proposed road corridor



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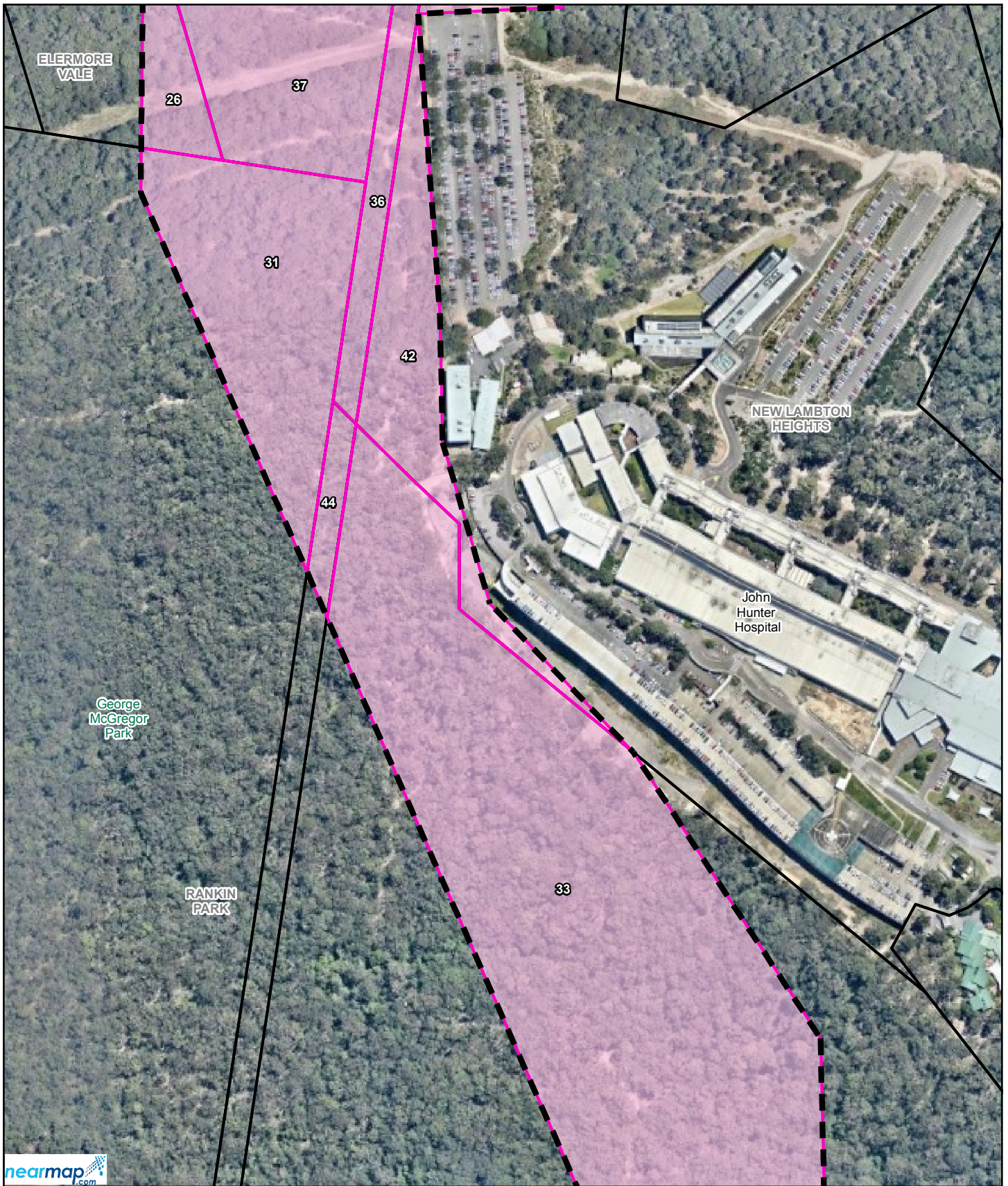
Rankin Park to Jesmond
 Socio-economic Impact Assessment

Job Number | 22-17656
 Revision | 0
 Date | 26 Aug 2016

Direct property impacts
 sheet 1 of 4

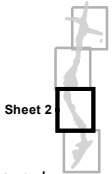
Figure 3-1a

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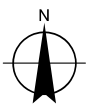
LEGEND

- Property acquisition
- Lot boundaries
- Impacted lot
- Proposed road corridor



Sheet layout

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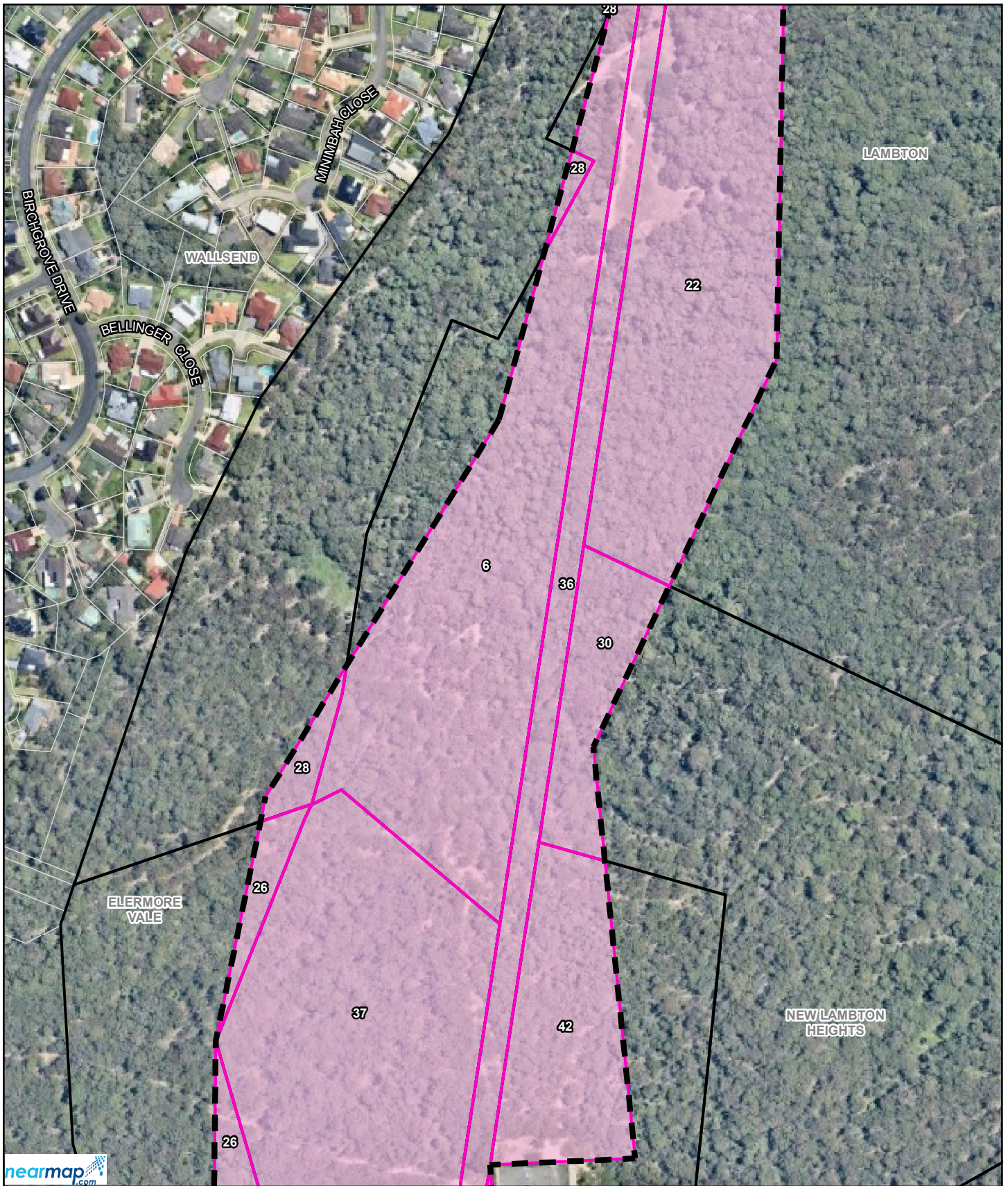
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Figure 3-1b

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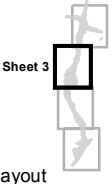
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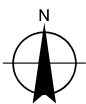
LEGEND

- Property acquisition
- Lot boundaries
- Impacted lot
- Proposed road corridor



Sheet layout

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Figure 3-1c

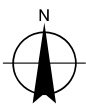
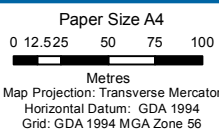


LEGEND

- Property acquisition
- Lot boundaries
- Impacted lot
- Proposed road corridor

Sheet 4

Sheet layout



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Figure 3-1d

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Data source: Nearmap: Aerial Imagery, 20160331; Aurecon: Proposed Road Corridor 2016; LPI: DTDB, 2012.

Construction lease areas

Construction of the project would require temporary leasing of land (or other temporary arrangements) for ancillary facilities such as construction compounds and access tracks. Areas proposed to be leased are listed in Table 3-3 and shown on Figure 3-2, along with key construction facilities. Impacts on key land uses are discussed in the following section. Potential impacts to adjoining land uses associated with amenity are discussed in Sections 3.5 and 3.6.

Construction compound B (numbered as L1 in Table 3-3 and on Figure 3-2) is located on land currently owned by Newcastle City Council. The western portion of this compound would be subject to property acquisition by Roads and Maritime and would become part of the proposed road corridor. The eastern portion is comprised of a grassed area with several mature trees. Most of these trees would not be cleared and all mature trees would be retained as far as possible. This portion is located within the designated area of Jesmond Park (zoned as RE1 Public Recreation) and partially encompasses the existing shared path (zoned as E3 Environmental Management). Public access to the compound area would be closed for the duration of construction (about 30 months) resulting in a temporary change in land use and impacting on recreational use of the area. Upon completion of construction the area would be rehabilitated including landscaping in consultation with Newcastle City Council, and recreational activities would be able to resume.

Construction access is proposed via Kookaburra Circuit within the John Hunter Hospital precinct (numbered as L2 in Table 3-3 and on Figure 3-2). This access would pass between Ronald McDonald House and the multi-storey carpark and then run along the south-western edge of the carpark. It follows an existing fire trail/construction access used by construction contractors during the recent extension of the carpark and is currently heavily disturbed.

This land is owned by Hunter New England Local Health District and is currently zoned SP2 Infrastructure (Classified Road) and SP2 Infrastructure (Health Services Facility). Use of this land for construction access would result in a temporary change in land use however, there are no expected impacts as its main function as a fire trail would still be available during construction. Following completion of construction its current use would continue.

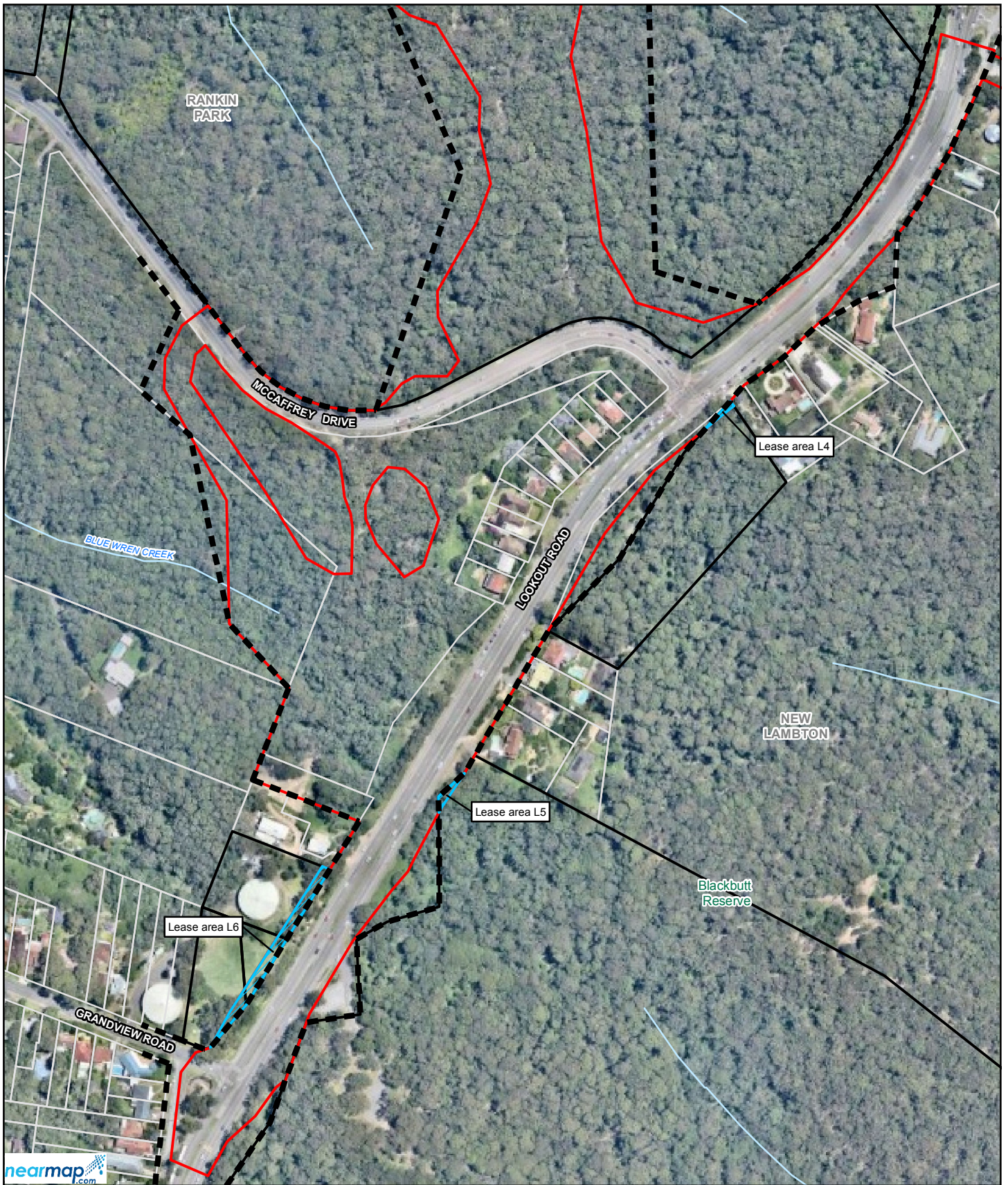
Near the eastern end of Jesmond Park construction would involve a new shared path bridge over Newcastle Road and upgrades to the existing path connecting to the shared path on the southern edge of the park (numbered as L3 in Table 3-3 and on Figure 3-2). This area is located within the designated area of Jesmond Park (zoned as RE1 Public Recreation) and partially encompasses the existing shared path (zoned as E3 Environmental Management).

Public access to this area would be closed for the duration of these construction activities, resulting in a temporary change in land use and impacting on recreational use of the area. Upon completion of construction the area would be rehabilitated and recreational activities would be able to resume.

There would be construction activities along Lookout Road, including shared path construction and utility relocations, that would require a lease or other arrangement. These areas would impact on land owned by Newcastle City Council (L4, L5 and L7) and the Minister for Public Works (L6). There are no expected socio-economic impacts associated with these areas.

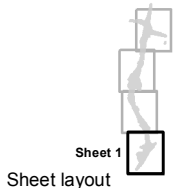
Table 3-3 Potential construction lease areas

Map ID	Lot and DP	Existing land use	Ownership	Total area of lot (hectares)	Area of lot directly impacted (hectares)	Percentage of lot directly impacted
L1	Lot 1 DP627240	Shared path	Newcastle City Council	0.77	0.05	6%
L1	Lot 1 DP396221	Jesmond Park	Newcastle City Council	8.34	0.58	7%
L2	Lot 131 DP1053492	John Hunter Hospital precinct (impacted portion is bushland/disturbed)	Hunter New England Local Health District	1.57	0.06	4%
L2	Lot 401 DP1197237	John Hunter Hospital precinct (impacted portion is bushland/disturbed)	Hunter New England Local Health District	47	1.03	2%
L2	Lot 41 DP1176191	John Hunter Hospital precinct (impacted portion is bushland/disturbed)	Hunter New England Local Health District	31.6	0.27	1%
L3	Lot 1 DP396221	Jesmond Park	Newcastle City Council	8.34	0.6	7%
L3	Lot 1 DP238564	Shared path	Newcastle City Council	0.87	0.01	1%
L4	Lot 183 DP599648	Bushland	Newcastle City Council	1.32	0.01	1%
L5	Lot 1 DP1148892	Blackbutt Reserve	Newcastle City Council	53.33	0.01	<1%
L6	Lot 11 DP263568	Water storage tanks (cleared land)	Minister for Public Works	0.11	0.04	34%
L6	Lot 12 DP263568	Water storage tanks (cleared land)	Minister for Public Works	0.46	0.04	9%
L6	Lot 25 DP10201	Water storage tanks (cleared land)	Minister for Public Works	0.36	0.02	6%
L7	Lot A DP344454	Bushland (George McGregor Park)	Newcastle City Council	24.26	0.01	<1%

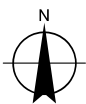


LEGEND

- Proposed road corridor
- Construction footprint
- Watercourse
- Lease area (or other arrangement)
- Lot boundaries
- Impacted lot



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 Grid: GDA 1994 MGA Zone 56



Rankin Park to Jesmond
 Socio-economic Impact Assessment

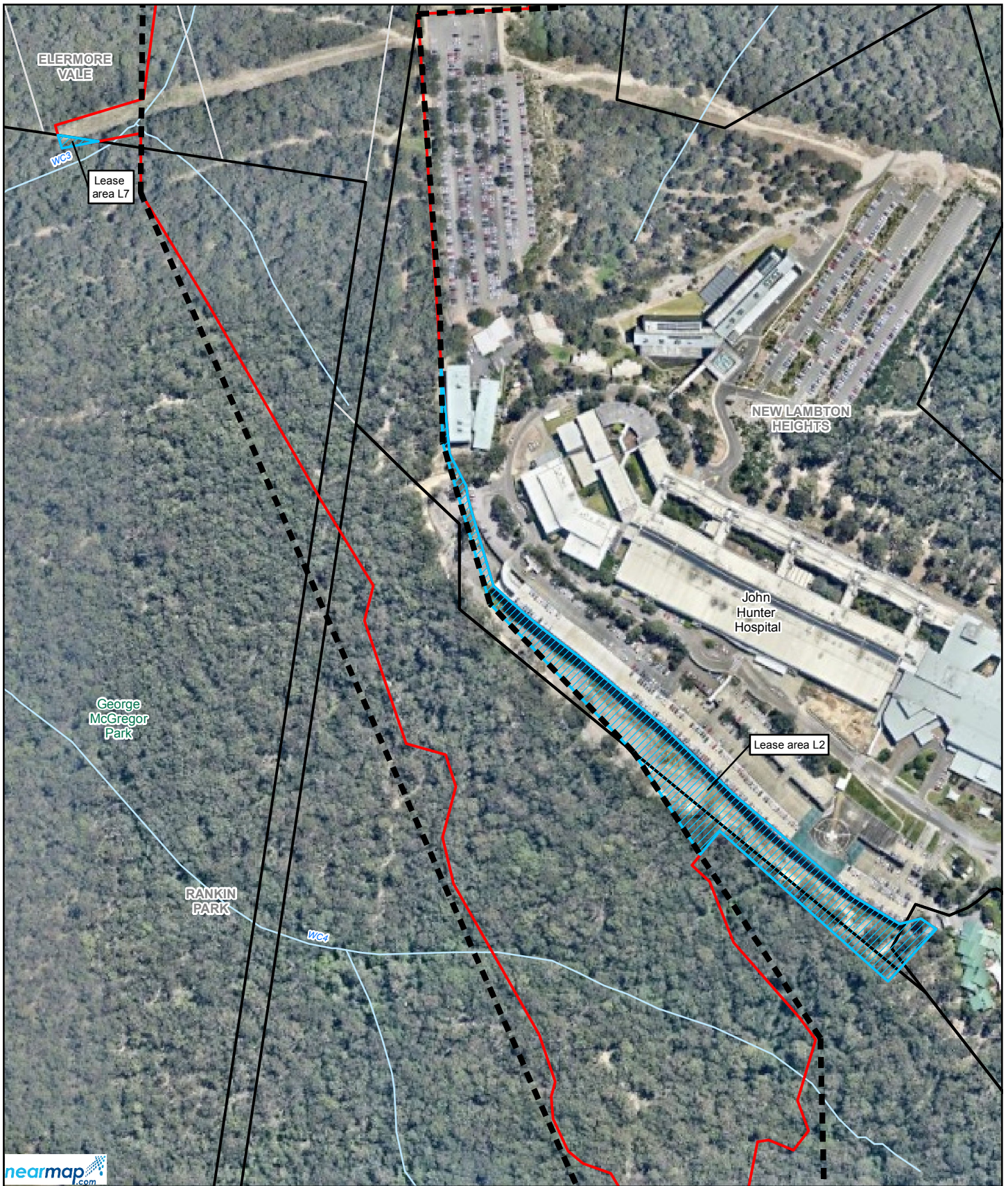
Job Number | 22-17656
 Revision | 0
 Date | 26 Aug 2016

Potential construction lease areas
 sheet 1 of 4

Figure 3-2a

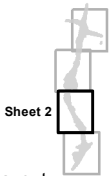
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Data source: Neamap: Aerial Imagery, 20160331; Aurecon: Construction footprint/ Design / Water quality structures, 2016; LPI: DTDB, 2012. Created by:



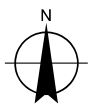
LEGEND

- Proposed road corridor
- Lot boundaries
- Construction footprint
- Impacted lot
- Watercourse
- Lease area (or other arrangement)



Sheet layout

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 Grid: GDA 1994 MGA Zone 56



Rankin Park to Jesmond
 Socio-economic Impact Assessment

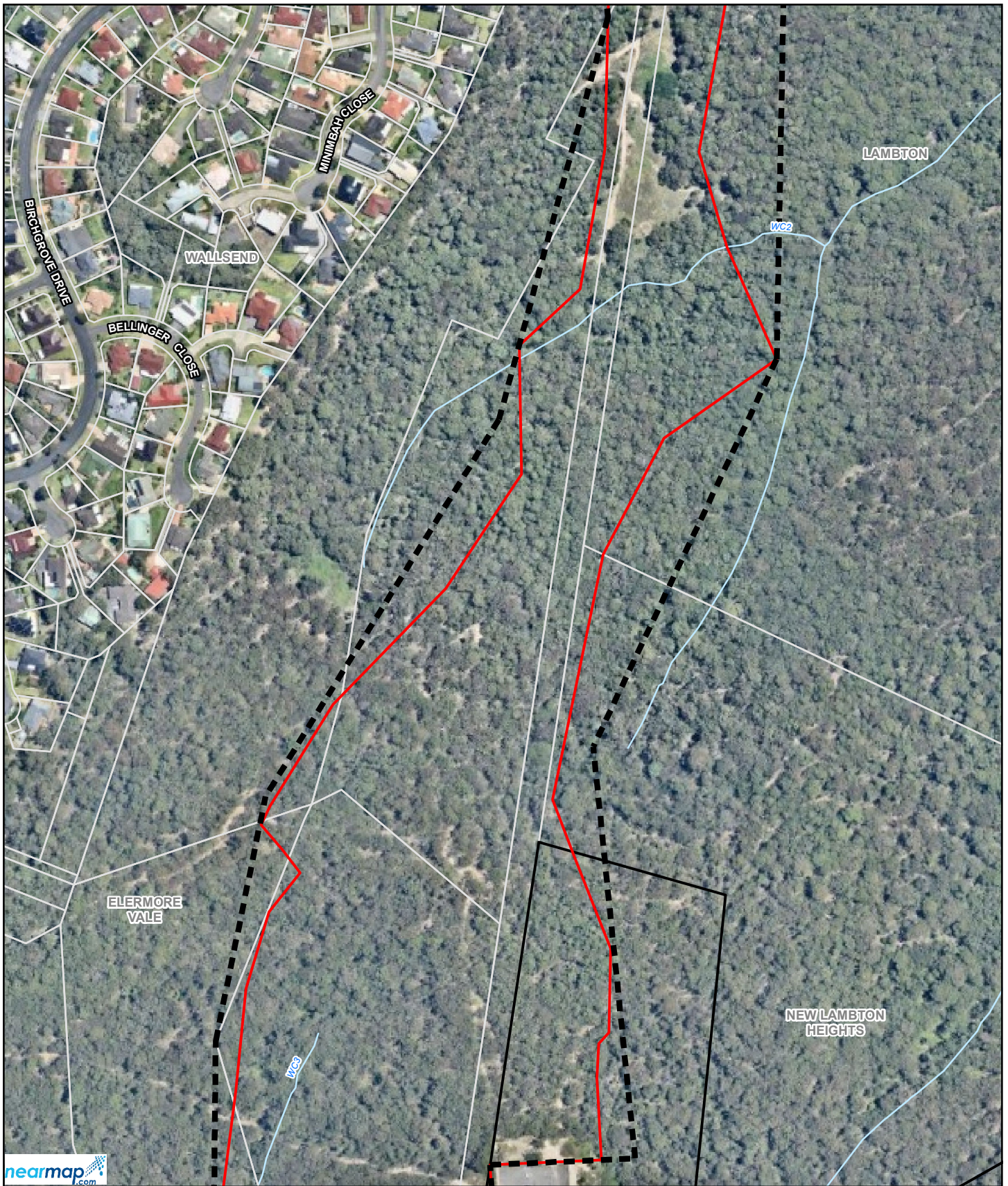
Job Number | 22-17656
 Revision | 0
 Date | 26 Aug 2016

Potential construction lease areas
 sheet 2 of 4

Figure 3-2b

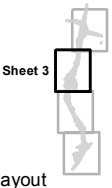
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Data source: Neamap: Aerial Imagery, 20160331; Aurecon: Construction footprint/ Design / Water quality structures, 2016; LPI: DTDB, 2012. Created by:



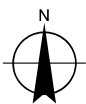
LEGEND

- Proposed road corridor
- Construction footprint
- Watercourse
- Lease area (or other arrangement)
- Lot boundaries
- Impacted lot



Sheet layout

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 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Rankin Park to Jesmond
 Socio-economic Impact Assessment

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Potential construction lease areas
 sheet 3 of 4

Figure 3-2c



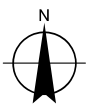
LEGEND

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- Construction footprint
- Watercourse
- Lease area (or other arrangement)
- Lot boundaries
- Impacted lot

Sheet 4

Sheet layout

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 Grid: GDA 1994 MGA Zone 56



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Potential construction lease areas
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Figure 3-2d

3.3.2 Operation

The project would result in a permanent change in land use from the existing land use to a road corridor. However as discussed in Section 3.3.1 most of the land that would be subject to acquisition is designated as a road corridor for the project or existing roads.

Subject to detailed design and property acquisition negotiations between Roads and Maritime and other government agencies, where land is not directly impacted by the new road infrastructure, it would be available for continuation of existing recreational activities.

Existing access to Jesmond Park and George McGregor Parks would still be available from surrounding local streets. The project would include fencing to exclude people and animals from the bypass for safety reasons. The fencing would be located as close as possible to the new road infrastructure to minimise the need to clear additional vegetation outside the construction footprint. This may enable ongoing recreational use of the surrounding bushland, even though it may be located within the proposed road corridor for the project.

3.4 Impacts on access and connectivity

3.4.1 Construction

Local and regional connectivity

Construction of the project would impact on roads within and immediately next to the work. The project would require modified arrangements for portions of the existing road network on Lookout Road, McCaffrey Drive and Newcastle Road. Construction speed limits (typically 40 km/h) would also apply to road segments within and directly next to the construction site. These could lead to short-term travel delays for motorists.

Construction is expected to take about 30 months and impacts would be variable during this period depending on the construction stage. Construction staging would be developed to minimise impacts on the road network. Where possible, construction activities that could substantially affect traffic congestion would be carried out outside peak periods, as far as is practicable.

There is a left turn out only intersection at the end of Robert Street on the north-eastern side of the existing Jesmond roundabout. This exit may need to be closed for periods of time during the construction phase. Where this is required traffic would still be able to use nearby exit points on other local streets in the area.

Potential impacts during construction would be managed in accordance with a construction environmental management plan and construction traffic management plan. As such, there are not expected to be any significant impacts.

Private property access

There are seven private properties that have direct access onto Lookout Road, and four that have direct access onto Newcastle Road within the limit of work for the project.

Potential impacts associated with construction of the project may include access disruptions for these properties. Vehicular access to some properties may be restricted for short periods during the construction work. Where access to property would be disrupted for an extended period, alternative access would be provided. As the project would be constructed progressively, this would minimise the duration of time that access would be impacted. Pedestrian and emergency vehicle access to properties would be maintained at all times.

Potential impacts during construction would be managed in accordance with a construction environmental management plan and construction traffic management plan. Roads and Maritime will carry out consultation with all affected property owners regarding changes to access arrangements during detailed design. As such, there are not expected to be any significant impacts.

John Hunter Hospital precinct

The existing two accesses to the hospital precinct is off Lookout Road and these would not be directly impacted by the project.

Pedestrian and cyclist access

The construction phase of the project is anticipated to result in disruptions to pedestrian activity on footpaths and cyclist activity on shared paths and on-road cycleways, particularly those near Jesmond Park, Newcastle Road, Lookout Road and McCaffrey Drive (Figure 3-3).

Existing paths near Newcastle Road that would be affected during construction include the shared path along the southern boundary of Jesmond Park, access paths into Jesmond Park from Newcastle Road and the mid-block pedestrian crossing on Newcastle Road, which is controlled by traffic lights.

It is likely that these, within the limit of work, would be closed for the duration of construction in the vicinity, and a portion of the shared path and the mid-block pedestrian crossing, would be permanently removed. The balance of the existing shared path along the southern boundary of Jesmond Park to the east of the project would not be impacted. There may also be short-term disruptions to the shared path along the eastern side of the existing Jesmond to Shortland section of the Newcastle Inner City Bypass.

As part of the project it is proposed to construct a new shared path bridge over Newcastle Road near Steel Street. This would provide connectivity from the Jesmond Park shared path to the existing shared path that runs along the eastern side of the Jesmond to Shortland section of the Newcastle Inner City Bypass. A new pedestrian path would be provided on the northern side of Coles Street and an on-road cycleway provided on Coles Street. Construction of the shared path bridge would be carried out as early as possible so it can be made available for public use before the closure of the mid-block pedestrian crossing.

The existing pedestrian paths on Lookout Road and McCaffrey Drive would be directly impacted during construction of the project within the limit of the work. Subject to construction staging it is possible that these paths may be closed for extended periods of time. Where possible the duration of closure would be limited and alternative safe access would be provided.

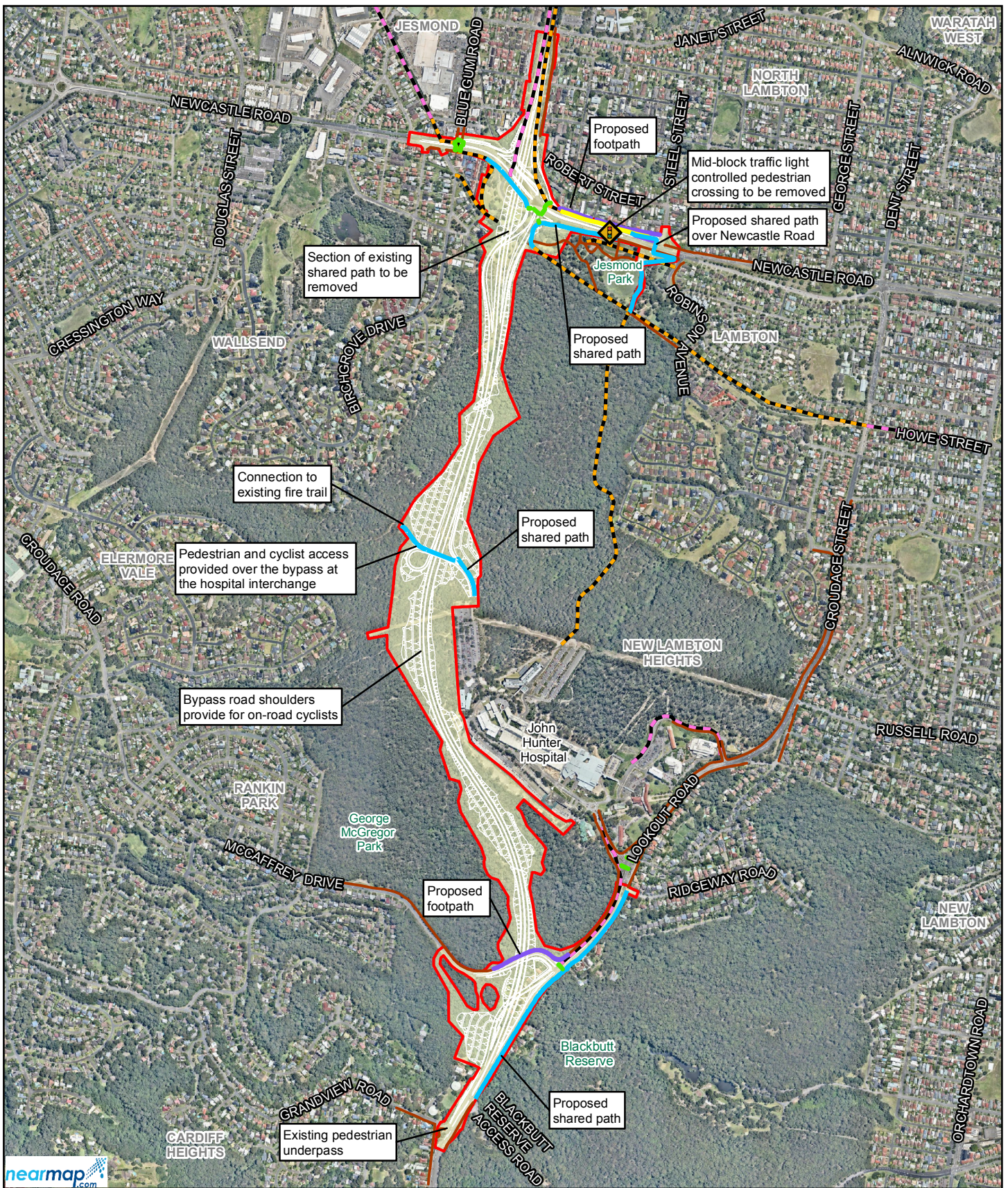
Any pedestrian or cyclist path detour or closure could result in pedestrians and cyclists having to travel further to access their destination or crossing locations. Construction activities would also potentially lead to increase in risk levels associated with movements through or near the construction site. However, with the implementation of standard traffic control measures these risks are not expected to be significant.

There are a number of fire trails and informal tracks that provide for pedestrian access between the John Hunter Hospital precinct and the residential areas to the west. These are also used for recreational bushwalking and mountain bike riding. Within the limits of the construction footprint, all east – west access across the project in the bushland area would be closed for the duration of construction (about 30 months) for safety reasons. A fence would be erected to exclude people and animals. Access across the construction footprint would be provided on the southern side of Newcastle Road and on the northern side of McCaffrey Drive. Access to bushland areas outside the construction footprint would generally not be affected.

Blasting may be required to be carried out in cuttings located near the hospital precinct (subject to feasibility and detailed design). Should blasting be required then there may be a need to restrict access to parts of the bushland area for short periods for safety reasons, however this is not expected to result in any significant impact on access.

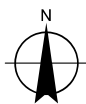
Cyclists would be able to continue to utilise on-road routes within the limit of work of the project. Construction speed limits (typically 40 km/h) and other temporary traffic controls would also apply to road segments within and directly next to the construction activities.

Potential impacts during construction would be managed in accordance with a construction environmental management plan and construction traffic management plan. Changes to formal pedestrian and cyclist routes would be indicated through provision of appropriate signage. As such, there are not expected to be any significant impacts.



- LEGEND**
- Construction footprint
 - Design
 - Existing footpath
 - Proposed footpath
 - Existing on-road cycleway
 - Existing shared path
 - Proposed shared path
 - Proposed on-road cycleway
 - Traffic light controlled pedestrian crossing
 - E Existing traffic lights to be removed

Paper Size A4
 0 50 100 200 300 400 500
 Metres
 Map Projection: Transverse Mercator
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Existing and proposed pedestrian and cyclist connections

Figure 3-3

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E ntm@mail@ghd.com W www.ghd.com.au
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Data source: Nearmap: Aerial Imagery, 20160331; Aurecon: Construction footprint, 2016; LPI: DTDB, 2012; PB: Cycling routes, 2015. Created by: tmorton, fmackay

3.4.2 Operation

Local and regional connectivity

During operation the project would offer improved connectivity and reduced travel time along the Newcastle Inner City Bypass and would ease congestion on key parts of the surrounding road network. This would result in benefits to all road users and residents and local communities along the existing route.

North of the northern interchange, the left turn out only intersection at the western end of Robert Street would be retained during operation and still be available for use. However, traffic would no longer be able to use this exit point to enter the existing Jesmond roundabout and then travel north on the existing Jesmond to Shortland section of the Newcastle Inner City Bypass. In order to head north this traffic would need to use other nearby routes to access the existing section of bypass from roads such as University Drive or Blue Gum Road, which would add less than one kilometre to the trip. Also to the east of the northern interchange at Robinson Avenue, while there is provision for right turn movements, during congested periods some traffic may turn left and use the existing roundabout to head back east. This movement would no longer be available however, traffic can use other local street to access Croudace Street in order to then travel east on Newcastle Road.

Private property access

During operation of the project existing access to all private properties would be reinstated, with minor adjustments as required to suit the new road infrastructure.

There are five residential properties located on the eastern side of Lookout Road about 250 m south of the Lookout Road/McCaffrey Drive intersection. These properties directly access Lookout Road via a service road with two driveway entrances. The southernmost driveway is located where a new traffic light would be installed for the project. This driveway would be removed for safety reasons. Residents of these properties would be able to use the other existing driveway to the service road, located about 50 m to the north.

Roads and Maritime will carry out consultation with all affected property owners regarding changes to access arrangements during detailed design.

John Hunter Hospital precinct

As discussed in Section 2.5 the roads near the project such as Lookout Road, Croudace Street, McCaffrey Drive and Newcastle Road currently experience congestion and delays, including the main entrance to the hospital precinct via Lookout Road and Kookaburra Drive. The project would reduce traffic volumes on Lookout Road in the near the main access to the hospital precinct from 49,400 vehicles per day in 2015 to 34,000 in 2020 and 37,500 in 2030 (Table 3-4). This would result in traffic benefits for road users in the near the main access. If the project wasn't constructed traffic volumes on Lookout Road in the near the main access would increase to about 56,400 in 2030.

Table 3-4 Forecast daily traffic volumes for Lookout Road (north of McCaffrey Drive)

Direction of travel	2015 No project	2020 No project	2020 With project	2030 No project	2030 With project
Northbound	24,800	26,100	17,100	28,300	18,800
Southbound	24,600	25,900	16,900	28,100	18,700
Total	49,400	52,000	34,000	56,400	37,500

The project includes a half-interchange to the west of the hospital precinct providing improved accessibility. This provides a second main access for vehicles, including emergency services, to enter and exit the hospital precinct to and from the north. It is predicted that about 7800 vehicles per day (in 2020) and 8600 vehicles per day (in 2030) would use this half-interchange, and that there would be a corresponding 48 per cent reduction (in 2020 and 2030) in vehicles using the main access point off Lookout Road via Kookaburra Circuit, which would allow for reduced travel time from the existing entrance.

Pedestrian and cyclist access

As described in Section 2.6 there are a number of shared paths in the areas surrounding the project and the surrounding communities value their active lifestyle and having access to the pedestrian paths and shared paths. In line with the community lifestyle and values, the project includes provisions for pedestrian and cyclist connectivity in the local area including (Figure 3-3):

- A road shoulder for on-road cyclists on the bypass.
- Provision of a new shared path on the eastern side of Lookout Road from the southern side of Ridgeway Road to the Blackbutt Reserve car park opposite Grandview Road.
- Replacing the existing mid-block pedestrian crossing on Newcastle Road with a shared path bridge over Newcastle Road linking to the existing off-road facilities either side of Newcastle Road, including a pedestrian path on the northern side of Coles Street.
- At the point where the existing shared path along the southern edge of Jesmond Park is severed by the project, a connection to the northern interchange would be provided. A new shared path would also be provided along the southern side of Newcastle Road on the eastern side of the northern interchange. Traffic lights would control pedestrian and cyclist movements at the northern interchange to provide for safe pedestrian and cyclist access at the interchange for both north-south and east-west movements. This would cause delays for cyclists crossing east-west at the northern interchange, however these delays are not expected to be significant as the green time for the traffic lights would be relatively high due to the dominant traffic movements on Newcastle road being east-west.
- At the hospital interchange a bridge over the bypass would include a shared path for pedestrians and cyclists, providing a connection between the hospital precinct and bushland/residential areas to the west.

The project would provide additional pedestrian and cyclist connectivity in the local area and enhance options for walking and cycling. The project would enhance opportunities for north-south pedestrian and cyclist movements through the provision of the road shoulders on the bypass for cyclists and the new shared path bridge over Newcastle Road. Provision for cyclists to cross on and off-ramps at the interchanges would be provided for in accordance with *NSW bicycle guidelines* (Roads and Traffic Authority 2005).

The project would include fencing to exclude people and animals from the bypass for safety reasons. The fencing would be located as close as possible to the new road infrastructure to minimise the need to clear additional vegetation outside the construction footprint. This may enable ongoing recreational use of the surrounding bushland, even though it may be located within the proposed road corridor for the project.

However, the project would sever existing informal access through the bushland area between the John Hunter Hospital precinct and residential areas to the west. During detailed design, Roads and Maritime will investigate the feasibility of an additional pedestrian access point across the proposed road corridor in the bushland area in consultation with nearby landowners, in order to provide improved connectivity between the hospital precinct and residential areas to the west.

3.5 Impacts on community values – amenity, lifestyle and community cohesion

3.5.1 Construction

Amenity and lifestyle

Amenity of a place defines the desirable, attractive and/or pleasant features or ambience of a place. As described in Section 2.7 the communities in the social study area value their amenity and associated active lifestyle and recreation offered by parks and bushland in the area.

Construction activities of the project are likely to bring temporary changes to local amenity due to changes in noise levels, air quality and visual amenity. Facilities required for construction of the project are shown on Figure 3-2.

The noise assessment carried out for the project (GHD, 2016a) predicts that construction activities and construction traffic have the potential for noise disturbance on residential and non-residential receivers and recreational spaces in areas near the project. Such increase in noise levels may temporarily disturb the quiet, bushland setting of the surrounding area particularly at the residential receivers.

Increased noise levels can also cause noise related stress, disrupt the working environment at non-residential receivers such as schools, child care facilities and hospitals and make the use of recreational areas unpleasant. Night time construction work is likely to cause sleep disturbance at residential receivers nearest to the construction work. Potential impacts will be managed through a construction noise and vibration management plan and therefore impacts expected to be medium and not significant.

The air quality assessment carried out for the project predicts that the residential areas located to the north and west of the project would have highest potential for adverse dust impacts during construction activities in the spring and summer months, when winds mostly occur from the south and east. This is likely to generate more dust settling on cars parked along streets and inside homes if windows are left open. Adverse impacts from high dust levels could include health effects such as asthma and bronchitis (from the smaller particles) and amenity impacts (due to fallout of the larger particles). Since the project will be progressively constructed amenity impacts associated with increased noise levels and reduced air quality are expected to be short-term.

Views of the project are generally limited to existing roads, Jesmond Park and residential areas that are immediately next to the construction footprint, in particular those on Lookout Road and Newcastle Road. Recreational users of the bushland would also have views of the construction site in some locations. Construction activities associated with the project would alter the visual landscape, with the greatest impacts occurring near Jesmond Park and in the bushland areas.

Access and connectivity impacts discussed in Section 3.4.1, in particular those associated with recreational use of the bushland and other pedestrian/cyclist routes, combined with the potential amenity impacts could affect the active outdoor lifestyle of the people who currently use the area.

John Hunter Hospital precinct

The main material handling compound area would be located near to the western extent of the John Hunter Hospital precinct (Figure 3-2). Key dust generating activities within this compound area are expected to be rock processing, soil blending, crushing and if required, concrete/asphalt batching.

The air quality assessment carried out for the project has found that dust generation within the compound and from general earthworks has the potential to impact on parts of the hospital precinct if not adequately managed. This would mean potential increase in dust settling on the outside of buildings and vehicles parked in the open. Indoor air quality within buildings in the hospital precinct is not expected to be impacted by the project. The potential impact would be greatest when prevailing winds are from the north-west, which mostly occur during the winter months. In addition to standard dust control measures, specific controls will be put in place for the compound area including implementing a buffer zone of about 100 m where possible between high dust generating plant (such as rock crushers and batching plants) and sensitive facilities within the hospital precinct.

The noise and vibration impact assessment carried out for the project has found that construction activities during (and outside of) standard hours have the potential to exceed the noise management level at non-residential sensitive receivers within the hospital precinct. Increased noise levels have the potential to cause noise related stress, disrupt the working environment and night time work may cause sleep disturbance at receivers nearest to the construction work. Sleep disturbance can also be caused during day time. In the case of the receivers in the hospital precinct the noise assessment has taken into consideration a standard approach to predicting outdoor noise levels and standard transmission to inside of buildings. Additional detailed noise assessment (including internal and external noise monitoring) will be required at these receivers to identify which spaces within the hospital precinct are sensitive locations with regards to the construction noise criteria and to determine the transmission loss through the relevant building facades.

As discussed in Section 3.3.1 it is proposed to use an existing fire trail for construction access with access off Kookaburra Circuit near Ronald McDonald House. This access was used by construction contractors during the recent extension of the carpark and is currently heavily disturbed. Use of this access would be subject to a lease or other agreement with Hunter New England Local Health District and any conditions of that lease in order to minimise potential impacts on users of the hospital precinct.

Potential impacts will be managed through implementation of a construction environmental management plan, construction noise and vibration management plan, including an out of hours work procedure, and construction traffic management plan. Roads and Maritime will consult with the NSW Health Infrastructure and Hunter New England Local Health District during detailed design to minimise potential impacts. As such, there are not expected to be any significant impacts.

Changes to movement and access

It is possible that at times the development of linear infrastructure such as a road can fragment the area and lead to loss of connection between land uses or land users on either sides of the road. Such actual or perceived loss in connection can create a physical/and or psychological barrier for the community.

As discussed in Section 3.4.1 during construction there would be temporary road/lane closures, diversions and speed limit restrictions on roads, pedestrian paths and shared paths in the study area such as Lookout Road, McCaffrey Drive and Newcastle Road. Access to private properties would also be restricted for short periods of time. Where access to property would be disrupted for an extended period, alternative access would be provided. This could cause inconvenience by limiting access or causing delays for the users.

Construction of the project is likely to impact use of existing shared paths and pedestrian paths near the project. There are also a number of informal trails which would be fragmented during construction with no access available across the construction footprint within the bushland area or Jesmond Park. Where access would be restricted on formal paths, alternate access or detours would be provided during construction as required.

The informal tracks and trails in the bushland that traverse the construction footprint would be closed during construction. This would impact on recreational users of these areas. However, the existing areas of bushland outside the construction footprint would still be available for recreational activities. Closure of these tracks during construction would also impact on people who walk or cycle to and from the hospital precinct, from residential areas to the west. Access across the construction footprint would be provided on the southern side of Newcastle Road and on the northern side of McCaffrey Drive. Access to bushland areas outside the construction footprint would generally not be affected.

Blasting may be required to be carried out in cuttings located near the hospital precinct (subject to feasibility and detailed design). Should blasting be required then there may be a need to restrict access to parts of the bushland area for short periods for safety reasons, however this is not expected to result in any significant impact on access.

Emergency services and public access would otherwise be provided at all times to public areas outside the construction footprint (Section 3.6.1).

While there would be disruptions and changes to access arrangements, connectivity via roads within the communities near the project and between communities across both sides of the project would be maintained.

Changes to formal pedestrian and cyclist routes would be indicated through provision of appropriate signage. As such, there are not expected to be any significant impacts.

Sense of community and participation

A sense of belonging to a place, including a person's connection to their community, property or home, are indicators of community cohesion. It is possible that private property owners along Lookout Road who are impacted by total property acquisition may have owned and/or resided at these properties for a considerable period of time, forming attachments with their land and the neighbourhood. Acquisition of properties can lead to a feeling of loss and isolation for these property owners.

Roads and Maritime has already acquired all houses that would be directly impacted by the project. The acquisition process has occurred over an extended period of time since display of the strategic design in 2007. A number of these property owners have already relocated while others have remained and would relocate before start of construction. As a result, these owners have had considerable time to adjust to the need for relocation. Further, with the high vacancy rate in Newcastle, Jesmond and surrounding areas (Section 2.2.5) it is possible for property owners to be able to relocate within the area and maintain their connections with the area and their community networks.

During construction of the project, activities of cycling and bushwalking groups along the informal trails within the construction footprint would be closed, however it is unlikely to impact on the community networking opportunities created by these groups because there are a number of other formal and informal trails in and around Newcastle which can be accessed by these groups. In addition, the existing areas of bushland outside the construction footprint would still be available for recreational activities.

Similarly, parks immediately next to the project would continue to be available for recreational use especially on weekends and public holidays when they are in demand. However due to construction noise and dust (during construction hours), it is possible that users of these areas may prefer to use alternate areas within the park or access other parks in the surrounding area. Availability of other recreational areas in the vicinity would allow community activities that rely on the usage of parks and picnic area to continue. The impacted Disc Golf course holes at Jesmond Park will be potentially relocated in consultation with the Newcastle Disc Golf club and Newcastle City Council.

3.5.2 Operation

Amenity and lifestyle

A number of areas near the project would potentially be impacted by noise, affecting their amenity while others would experience a reduction in noise. The noise assessment carried out for the project (GHD, 2016a) predicts that the project is likely to reduce the number of maximum noise levels for some residential receivers, particularly along Lookout Road and Croudace Road. Receivers in the vicinity of the project that would be exposed to more frequent maximum noise events, particularly in relation engine braking by northbound heavy vehicle traffic on the bypass descending from the southern interchange. During operation, the relevant operational noise criteria would be exceeded at a number of sensitive receivers. For most sensitive receivers the predicted noise levels are considered to be low enough to allow normal activities to be pursued. Roads and Maritime will confirm the noise mitigation requirements during detailed design and consult further with affected property owners as required.

The air quality assessment carried out for the project predicts that air emissions from vehicles during operation of the project have been identified to consist of exhaust emissions and road dust, brake and tyre wear. The project would potentially result in adverse impacts on local air quality above existing levels in the existing bushland area due to the introduction of a new road in a bushland setting. However, the modelling indicates that at distances at 10 m and beyond from the traffic lanes of the project, air quality levels are well within the assessment criteria indicating there would be no noticeable air quality impacts. The project would result in air quality benefits to the surrounding area through overall improvements in traffic flows and reduced traffic volumes on the existing route and key parts of the surrounding road network.

Views of the project are generally limited to existing roads, Jesmond Park and residential areas that are immediately next to the project, in particular those on Lookout Road and Newcastle Road. Recreational users of the bushland would also have views of the project in some locations. The project would alter the visual landscape, with the greatest impacts occurring near Jesmond Park and in the bushland areas.

With the presence of major infrastructure in the area, operation of the project is likely to change the character of the area from bushland and its associated quiet ambiance to an urban feel, especially for residences next to the bushland. However, additional shared paths and pedestrian paths would be provided and recreational use of the surrounding areas would resume during operation to support the active lifestyle of the community. Roads and Maritime will implement a range of measures, including landscaping, to minimise visual impacts. As such, there are not expected to be any significant impacts.

John Hunter Hospital precinct

The air quality assessment carried out for the project noted that the project adds an emission source not currently present through the bushland area next to the John Hunter Hospital precinct. The air quality assessment found that at distances of greater than 10 m from the edge of the traffic lanes all vehicle emissions were predicted to be well below the assessment criteria. No adverse impacts to the John Hunter Hospital precinct are anticipated during operation of the project.

The noise and vibration impact assessment carried out for the project noted that operation of the project is predicted to potentially exceed the operational noise criteria at some non-residential receivers in the hospital precinct. Further detailed noise assessment (including internal and external noise monitoring) will be required at these receivers to identify which spaces within these structures are sensitive locations with regards to the traffic noise criteria and to determine the transmission loss through the relevant building facades. Roads and Maritime will confirm the noise mitigation requirements during detailed design in consultation with NSW Health Infrastructure and Hunter New England Local Health District.

The project would create a firebreak along the western edge of the hospital precinct, and with the improved access for firefighting emergency vehicles discussed in the following sections, and shown in Figure 3-4, would reduce the risk of a bushfire affecting the hospital precinct from the west.

Changes to movement and access

During operation, the project would offer improved connectivity via formal roads, pedestrian paths and shared paths (Section 3.4.2). The project would provide improved north-south traffic flow in the inner western suburbs of the city by providing continuity for the Newcastle Inner City Bypass. The bypass would also provide improved connectivity between key destinations such as Bennetts Green, Charlestown, John Hunter Hospital, Jesmond, The University of Newcastle and the Pacific Highway at Sandgate.

Normal recreational use of informal trails in the bushland area surrounding the project would resume. Access to all private and public properties would be provided following the completion of construction activities. The project would provide new connections to the existing fire trail network within the bushland providing improved access for emergency services (Section 3.6.2).

The project would partially impact the western extent of a bicentennial walking trail established by Newcastle City Council. The trail provides a short walking loop through the bushland area from the existing shared path that connects the John Hunter Hospital precinct to Jesmond Park. The trail uses existing fire trails and informal tracks. Roads and Maritime will carry out consultation with Newcastle City Council during detailed design about the feasibility of modifying the trail, if required.

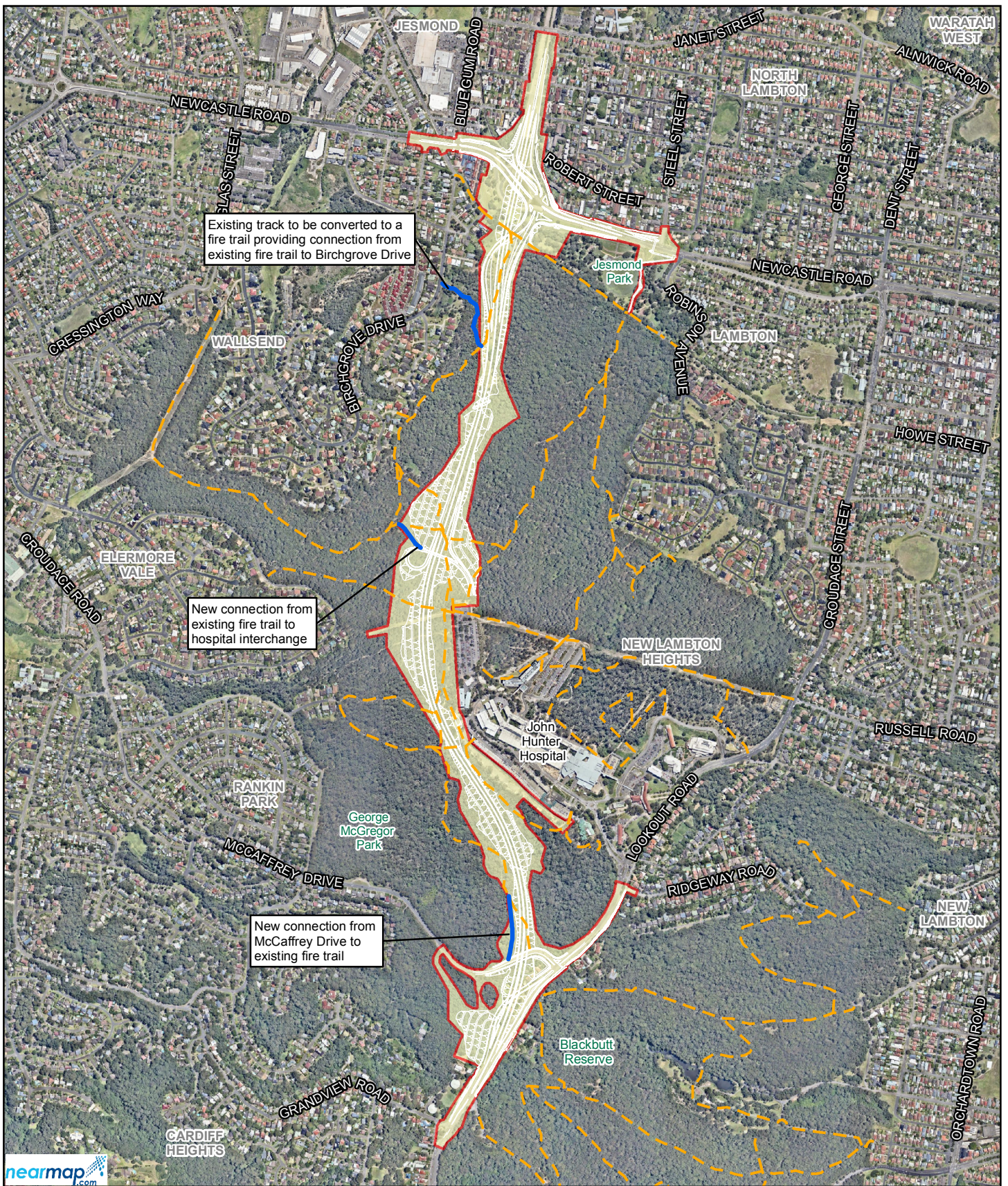
The project would replace the existing mid-block pedestrian crossing on Newcastle Road with a shared path bridge linking to the existing off-road facilities either side of Newcastle Road, including a new pedestrian path on the northern side of Coles Street. This would improve access for pedestrians and cyclists, including access to Jesmond Park. Access across the bypass would be provided at the hospital interchange via a bridge over the bypass, providing connection between the hospital precinct and bushland/ residential areas to the west.

An additional western entry point to John Hunter Hospital precinct and reduced congestion at the existing eastern entry point on Lookout Road will improve emergency access to the hospital precinct (Section 3.4.2).

Sense of community and participation

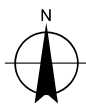
Use of parks, picnic area, roads, adjusted formal and informal pedestrian paths and shared paths would resume during operation, offering improved connectivity for the community in the study area. The impacted Disc Golf course would be potentially relocated in consultation with Newcastle Disc Golf club and Newcastle City Council.

During operation the project would reduce traffic volumes along the existing route and key parts of the surrounding road network which would improve travel time, safety and connectivity in the local communities.



- LEGEND**
- Construction footprint
 - Existing fire trail
 - Design
 - Proposed fire trail

Paper Size A4
 0 50 100 200 300 400 500
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Rankin Park to Jesmond
 Socio-economic Impact Assessment

Job Number | 22-17656
 Revision | 0
 Date | 26 Aug 2016

Existing and proposed fire trails

Figure 3-4

3.6 Impacts on social infrastructure

3.6.1 Construction

John Hunter Hospital precinct

The existing two accesses to the hospital precinct is off Lookout Road and these would not be directly impacted by the by construction activities. There would be a minor increase in construction traffic along Lookout Road, including the use of the construction access off Kookaburra Circuit, however, given the high volumes of traffic on these roads there are not expected to be any significant impacts. During construction, there may be temporary disruptions to normal traffic flow however, these are not expected to be significant.

The main material handling compound area would be located near the western extent of the John Hunter Hospital precinct. Key dust generating activities within this compound area are expected to be rock processing, soil blending, crushing and if required, concrete batching.

The air quality assessment carried out for the project has found that dust generation within the compound and from general earthworks has the potential to impact on this sensitive receiver if not adequately managed.

The noise and vibration impact assessment has found that construction activities during (and outside of) standard hours have the potential to exceed the relevant noise criteria at buildings in the John Hunter Hospital precinct. Appropriate mitigation measures will be implemented to minimise construction related impacts to allow usual functioning of the hospital and associated services in the precinct.

Potential impacts will be managed through implementation of a construction environmental management plan, construction noise and vibration management plan, including an out of hours work procedure, and construction traffic management plan. As such, there are not expected to be any significant impacts.

Blasting may be required to be carried out in cuttings located near the hospital (subject to feasibility and detailed design). Should blasting be required then there may be a need to restrict access to parts of the bushland area for short periods for safety reasons, however this is not expected to result in any significant impact on access. If required, a blasting assessment and management plan will be developed in consultation with NSW Health Infrastructure and Hunter New England Local Health District to manage potential impacts on the hospital operations and rescue helicopter services.

Access and amenity impact to the hospital precinct are discussed in Sections 3.4.1 and 3.5.1.

The University of Newcastle

The main access to The University of Newcastle is on University Drive and this would not be directly impacted by construction activities. There would be a minor increase in construction traffic on roads near University Drive however, given the high volumes of traffic on these roads there are not expected to be any significant impacts. During construction, there may be temporary disruptions to normal traffic flow however, these are not expected to be significant.

Emergency services

It is unlikely that construction of the project will generate demand for emergency services that would constrain their ability to service the local community.

As discussed in Section 3.4.1 during construction there would be impacts to roads within and immediately next to the construction footprint including reduced speed limits and modified arrangements. Construction staging would be developed to minimise impacts on the road network. During construction emergency vehicle access on public roads would be provided at all times. Should blasting be required a management plan will be developed in consultation with NSW Health Infrastructure and Hunter New England Local Health District to manage potential impacts on the rescue helicopter services.

Construction would also impact on the existing fire trail network in the bushland areas (Figure 3-4). During construction emergency vehicle access to the bushland areas surrounding the project would be provided at all times.

Impacts on recreational facilities

Shared paths, pedestrian paths and trails

Construction of the project is likely to impact use of existing shared paths and pedestrian paths near the project. Refer to Section 3.4.1 for further discussion. There are also a number of informal trails which would be impacted during construction with no access available across the construction footprint within the bushland area or Jesmond Park. Access across the construction footprint would be provided on the southern side of Newcastle Road and on the northern side of McCaffrey Drive. Access to bushland areas outside the construction footprint would not be affected. Where access on formal paths would be restricted, alternate access or detours would be provided during construction as required.

Parks and picnic areas

As discussed in sections 3.3.1 and 3.5.1, access to areas of parks next to the project outside the construction footprint would continue to be available during construction especially on weekends and public holidays when they are in demand. However due to construction noise and dust (during construction hours), it is possible that users of these areas may temporarily find it inconvenient to use the area for recreational purposes. Due to the progressive construction of the project, work fronts will be transient and is unlikely to affect the areas for an extended period of time. With the implementation of identified management measures, impacts are not expected to be significant.

The impacted Disc Golf course holes at Jesmond Park would be potentially relocated in consultation with the Newcastle Disc Golf club and Newcastle City Council.

3.6.2 Operation

John Hunter Hospital precinct

As discussed in section 3.4.2 the project would improve access to the John Hunter Hospital precinct by reduced congestion through the existing entrance via Kookaburra Circuit and providing additional second entrance through the western side. Improved access would assist in improved emergency response time.

No adverse air quality impacts are anticipated to the John Hunter Hospital precinct during operation of the project.

The noise and vibration impact assessment carried out for the project noted that operation of the project is predicted to potentially exceed the relevant noise criteria at some non-residential receivers in the hospital precinct. Additional detailed noise assessment would be carried out during detailed design at these receivers to determine the transmission loss through the relevant building facades and identify if the internal noise levels exceed the relevant criteria and whether mitigation is required. Roads and Maritime will confirm the noise mitigation requirements during detailed design in consultation with NSW Health Infrastructure and Hunter New England Local Health District. The increased noise levels are not expected to impact on the usual function of the hospital and associated services in the precinct.

The University of Newcastle

The main access to The University of Newcastle is on University Drive and this would not be directly impacted by the project. However, the project would assist to ease congestion on key existing roads used to access the university including bypass. The project would also provide improved pedestrian and cyclist connection across Newcastle Road, which connects to the existing off-road networks leading to the university.

Emergency services

The project would reduce traffic volumes on the existing route and key parts of the surrounding road network, and as a result would improve emergency response times on these sections of road. The provision of a new western connection to the hospital precinct also provides the opportunity for emergency services to use the bypass to access the hospital precinct from the north.

The project would provide new connections to the existing fire trail network in the bushland area (Figure 3-4) and therefore provide improved access for fire response vehicles.

Impacts on recreational facilities

The project would provide additional shared paths in the study area and enhance options for walking and cycling.

Recreational use of informal trails in the bushland areas surrounding the project would resume during operation of the project.

The noise and vibration impact assessment identified that parts of Jesmond Park would be impacted by road traffic noise above the relevant criteria. However, these areas already experience high levels of road traffic noise above the relevant criteria from Newcastle Road, and in some cases would decrease with operation of the project. Therefore, recreational use of the park is not expected to be significantly impacted.

The project would acquire a small portion of George McGregor Park and Jesmond Park as outlined in Section 3.3.1. During operation of the project it is anticipated that original use of the balance of the parks and picnic areas would resume. The impacted Disc Golf course holes would be potentially relocated in consultation with the Newcastle Disc Golf club and Newcastle City Council. Also refer to Section 3.5.2 for amenity related impacts.

3.7 Summary of impacts

Table 3-5 and Table 3-6 provide a summary of the identified potential impacts during construction and operation of the project.

Table 3-5 Summary of socio-economic impacts during construction

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
Employment opportunities					
Potential regional employment opportunities through construction workforce which is expected to peak at about 100 personnel per day and last for a period of 30 months. Construction would also generate demand for provision of services from businesses creating potential employment opportunities.	Positive	Direct	Short-term	Minor	Labour force in Newcastle and Lake Macquarie LGAs and local businesses
Impacts on local businesses					
Potential increase in trade for businesses near the project from the construction workforce and demand for services during construction.	Positive	Direct	Short-term	Minor	Local businesses
Temporary access and amenity impacts to Executive Villas Jesmond and the music business located in a private residence on Lookout Road. Loss of existing informal on-street parking arrangements on Lookout Road in front of the home music business.	Negative	Direct	Short-term	Minor	Private business owners
Impacts on land use					
The project would permanently change the land use of the area under the proposed road corridor. Main changes would include: 15 residential/private lots that have been or would be acquired; loss of bushland areas; and acquisition of small sections of Jesmond Park and George McGregor Park.	Negative	Direct	Long-term	Minor	Land owners and users of the bushland and recreational areas

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
The acquisition and land use changes would result in changed use of recreational areas within the bushland which are informally used for bushwalking and mountain bike riding and would require removal and potential relocation of part of the Disc Golf course at Jesmond Park.	Negative	Direct	Long-term	Minor	Land owners and users of the bushland and recreational areas
At John Hunter Hospital precinct, the project would acquire about 18.4 hectares of bushland from three lots. These lots are either currently heavily vegetated or partially/totally cleared and apart from fire trails and minor drainage infrastructure do not contain any buildings or other substantial improvements.	Negative	Direct	Long-term	Minor	Staff and users of John Hunter Hospital precinct
Residual public lands – acquisition for the project would potentially result in residual public lands.	Negative	Direct	Long-term	Minor	Government agency land owners
Mineral resources - the project is not expected to impact on any future coal mining as the mineable coal seams beneath the proposed road corridor have been historically mined.	Neutral	Direct	Long-term	Negligible	Possible future mining or exploration lease holders
Utilities - the project would impact on utilities including electricity transmission, telecommunications, water, sewer and gas. This would require adjustment to existing services, relocation of some services and/or the implementation of protection measures. The relocation or adjustment of infrastructure and utilities for the project may result in some temporary disruptions for nearby residents during this work.	Negative	Direct	Temporary	Negligible	Resident and non-resident users of the utilities in areas surrounding the project

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
Construction lease areas – construction of the project would require temporary leasing of land, or other arrangement for temporary use of land, for ancillary facilities such as construction compounds and for the completion of other work.	Negative	Direct	Temporary to Short-term	Minor	Affected property owners
Impacts on access and connectivity					
Local and regional connectivity - construction of the project would impact on roads within and immediately next to the work with modified arrangements such as changes to speed limits, which could lead to short-term travel delays for motorists.	Negative	Direct	Temporary to Short-term	Minor	Road users
Private property access – access to seven private properties onto Lookout Road and four that have direct access onto Newcastle Road would potentially be disrupted. Vehicular access to some properties may be restricted for short periods during the construction work. Where access to property would be disrupted for an extended period, alternative access arrangements would be provided.	Negative	Direct	Temporary to Short-term	Minor	Residents of affected private properties
Pedestrian and cyclist access – pedestrian paths, shared paths and on-road cycleways near the project area would experience disruptions or closures during construction. Detours would result in pedestrians and cyclists having to travel further to access their destination or crossing locations. However, with the implementation of standard	Negative	Direct	Temporary to Short-term	Negligible	Pedestrians and cyclists

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
traffic control measures these risks are expected to be minimised.					
The project would provide a new shared path bridge over Newcastle Road near Steel Street that would be constructed as early as possible so it can be made available for public use before the closure of the mid-block pedestrian crossing.	Positive	Direct	Long-term	Minor	Pedestrians and cyclists
Impacts on community values – amenity, lifestyle and community cohesion					
Amenity - construction activities of the project are likely to bring temporary changes to local amenity of residents and non-resident uses (including the John Hunter Hospital precinct) due to increased noise levels increased dust and changes to the quiet bushland feel and views of the area to an urban landscape.	Negative	Direct	Short-term	Medium	Residential and non - residential receivers surrounding the project area
Changes to movement and access - while there would be disruptions and changes to access arrangements, connectivity via roads within the communities near the project and between communities across both sides of the project will be maintained. There would be disruptions to shared paths and pedestrian paths within the construction footprint. There are also a number of informal trails which would be impacted during construction with no access available across the construction footprint within the bushland area. While	Negative	Direct	Short-term	Negligible	Surrounding communities

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
access would be restricted, alternate access or detours would be provided during construction as required.					
<p>Sense of community and participation – property owners impacted by property acquisition, have had considerable time to adjust to the need for relocation and find a suitable area and communities to relocate. While the informal cycling and bushwalking trails within the project area may be impeded, it is unlikely to impact on the networking and group activities of cycling and bushwalking groups as alternate routes would be available and also there are a number of alternate formal and informal trails in and around Newcastle that can be accessed.</p> <p>Similarly, the balance of the parks and bushland would also be available for recreational use providing ongoing opportunities for recreational and group/community activities. The impacted Disc Golf course holes would be potentially relocated in consultation with the Newcastle Disc Golf club and Newcastle City Council.</p>	Negative	Direct	Short-term	Negligible	Surrounding communities
Impacts on social infrastructure					
John Hunter Hospital precinct - construction activities are likely to increase noise levels at the hospital precinct.	Negative	Direct	Short-term	Minor to Medium	Staff and users of John Hunter Hospital precinct
Emergency services - it is unlikely that construction of the project will generate extra demand for emergency services that would constrain their ability to service the	Neutral-Negative	Direct	Temporary to Short-term	Negligible	Emergency services

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
<p>local community. During construction emergency vehicle access on public roads would be provided at all times.</p> <p>Construction would also impact on the existing fire trail network in the bushland areas. During construction emergency vehicle access to the bushland areas surrounding the project would be provided at all times.</p>					
<p>John Hunter Hospital precinct/emergency services – if blasting is required near the hospital it could impact on hospital operations and rescue helicopter services.</p>	Negative	Direct	Short-term	Minor to Medium	Staff and users of John Hunter Hospital precinct

Table 3-6 Summary of socio-economic impacts during operation

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
Employment opportunities					
The project would support the improvement of the NSW, regional and local economy through improved traffic (including freight) and reduced congestion leading to increased productivity.	Positive	Direct	Long-term	Medium	Labour force in Newcastle and Lake Macquarie LGAs and local businesses
Impacts on local businesses					
The Executive Villas Jesmond would experience slightly reduced road traffic noise levels while the music business located in a private residence on Lookout Road would experience a minor increase in road traffic noise levels however, they already experience a high level of noise from existing traffic on these busy roads.	Negative	Direct	Long-term	Negligible to Minor	Executive Villas Jesmond and home music business
Loss of existing informal on-street parking arrangements in the shoulder of Lookout Road in front of the music business. Pedestrian access would continue to be available along the western edge of Lookout Road from the south.	Negative	Direct	Long-term	Minor	Home music business

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
A small reduction in trade for the Mobil petrol station with 7-Eleven due to the drop in passing southbound traffic on Croudace Street. There is also potential for a small increase in trade due to reduced congestion on Croudace Street. However, any potential changes in trade are not expected to be significant and local trade is expected to continue from the residents and visitors to the surrounding residential area and traffic that would continue to use Croudace Street.	Negative	Direct	Long-term	Negligible to Minor	Mobil petrol station with 7-Eleven
Impacts land use					
The project would result in a permanent change in land use from the existing land use to a road corridor and loss of some recreational area.	Negative	Direct	Long-term	Negligible	Users of the area
Impacts on access and connectivity					
Local and regional connectivity - during operation, the project would offer improved connectivity and reduced travel time along the Newcastle Inner City Bypass and would ease congestion on key parts of the surrounding road network. This would result in benefits to all road users and residents and local communities along the existing route.	Positive	Direct	Long-term	Major	Road users

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
Local and regional connectivity - north of the northern interchange the left turn out only intersection at the western end of Robert Street would be retained during operation and still be available for use. However, the removal of the existing roundabout would mean some traffic that used it to change the direction of travel would no longer be able to do so. Traffic would be able to use other nearby routes to access main roads.	Negative	Direct	Long-term	Minor	Some road users
Private property access - during operation, project the existing access to all private properties would be reinstated, with minor adjustments as required to suit the new road infrastructure.	Neutral	Direct	Long-term	Negligible	Residents are impacted private properties
John Hunter Hospital precinct – operation of the project would lead to reduced congestion on the existing eastern main entrance on Lookout Road and provide an additional entrance on the western side off the bypass.	Positive	Direct	Long-term	Major	Staff and users of John Hunter Hospital precinct
Pedestrian and cyclist access - the project would provide additional pedestrian and cyclist connectivity in the local area and enhance options for walking and cycling.	Positive	Direct	Long-term	Medium	Pedestrians and cyclists
The project would sever existing informal access through the bushland area between the John Hunter Hospital precinct and residential areas to the west.	Negative	Direct	Long-term	Medium	Pedestrians and cyclists

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
Impacts on community values – amenity, lifestyle and community cohesion					
Reduction in traffic along Lookout Road and Croudace Road would result in reduced noise levels and improved air quality for some residential receivers in that area.	Positive	Direct	Long-term	Medium	Community in the area of Lookout Road and Croudace Road
The project would expose some areas to more frequent maximum noise events, particularly in relation engine braking by northbound heavy vehicle traffic on the bypass descending from the southern interchange. During operation, the relevant operational noise criteria would be exceeded at a number of sensitive receivers. For most sensitive receivers the predicted noise levels are considered to be low enough to allow normal activities to be pursued.	Negative	Direct	Long-term	Negligible	Community surrounding project
With the presence of major infrastructure in the area, operation of the project is likely to change the character of the area from bushland and its associated quiet ambiance to an urban feel, especially for residences next to the bushland.	Negative	Direct	Long-term	Negligible	Community surrounding project
Additional shared paths and pedestrian paths would be available, enhancing options for walking and cycling. Recreational use of the surrounding areas would resume during operation to support the active lifestyle of the community.	Positive	Direct	Long-term	Medium	Community surrounding the project and pedestrians and cyclists

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
Changes to movement and access - during operation, the project would offer improved connectivity via formal roads, pedestrian paths, shared paths and on-road cycleways and use of informal tracks and trails would be restored in the surrounding bushland. Access to all private and public properties would be provided following the completion of construction activities. The project would provide new connections to the existing fire trail network within the bushland providing improved access for emergency services.	Positive	Direct	Long-term	Medium	Community surrounding the project, pedestrians and cyclists and emergency services
Changes to movement and access - the project would partially impact the western extent of a bicentennial walking trail that was established by Newcastle City Council.	Negative	Direct	Long-term	Minor	Recreational users of the bushland area
Sense of community and participation - use of parks, picnic area, roads, existing and new formal and informal pedestrian paths, shared paths and trails would resume during operation, offering better connectedness for the community in the study area. During operation the project would reduce traffic volumes along the existing route and key parts of the surrounding road network which would improve travel time, safety and connectedness in the local communities.	Positive	Direct	Long-term	Medium	Community surrounding the project

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
Impacts on social infrastructure					
John Hunter Hospital precinct – during operation improved and additional access would be available for John Hunter Hospital precinct.	Positive	Direct	Long-term	Major	Staff and users of John Hunter Hospital precinct
John Hunter Hospital precinct – impacts from increased noise levels from the operation of the project may occur, however additional noise assessment and with appropriate control and mitigation measures in place, the increased noise levels are not expected to impact on the usual function of the hospital and associated services in the precinct.	Negative	Direct	Long-term	Medium	Staff and users of John Hunter Hospital precinct
Emergency services - the project would reduce traffic volumes on the existing route and key parts of the surrounding road network, and as a result could improve emergency response times on these sections of road. The provision of a new western connection to the hospital precinct also provides the opportunity for emergency services to use the bypass to access the hospital precinct from the north. The project would provide new connections to the existing fire trail network within the bushland providing improved access for emergency services.	Positive	Direct	Long-term	Medium	Emergency services

Impact description	Nature	Type	Duration	Level of impact	Stakeholders impacted
<p>Impacts on recreational facilities during operation the project would provide additional shared paths and pedestrian paths and enhance options for walking and cycling in the study area. Recreational use of informal trails in the surrounding bushland would resume during operation.</p> <p>During operation of the project it is anticipated that original use of the balance of parks and picnic areas would resume and the impacted Disc Golf course holes would be potentially relocated.</p>	Positive	Direct	Long-term	Minor	Community surrounding the project

4. Management strategies

Table 4-1 outlines recommended impact mitigation/management measures to minimise the negative impacts arising from the project. A draft Community Consultation Framework has been prepared for the project which will guide ongoing community consultation during construction. Further, mitigation measures to manage other impacts such as noise, air quality, amenity and traffic and access are addressed by other specialist studies for the project and have not been included here.

Table 4-1 Recommended mitigation measures and management strategies

Impact summary	Mitigation/management measures	Responsibility	Timing
Community consultation	The draft Community Consultation Framework will be finalised during detailed design and will be implemented during construction to provide timely and transparent information about changes to access, traffic conditions, details of the construction program and general construction progress during the construction phase.	Roads and Maritime	Detailed design
Property acquisition	Property acquisition will be carried out in accordance with the <i>Land Acquisition Information Guide</i> (Roads and Maritime, 2014) and the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> .	Roads and Maritime	Detailed design
Residual public land	Areas of potentially residual public land would be confirmed during the detailed design phase and where there is residual Roads and Maritime land not required for the project or other future road requirements, consultation with Newcastle City Council and other Government agencies will be carried out to identify possible land swaps or transfers.	Roads and Maritime	Detailed design
Impacts to Disc Golf course at Jesmond Park	Roads and Maritime will carry out consultation with the Newcastle Disc Golf club and the Newcastle City Council regarding potential relocation of the impacted Disc Golf course holes.	Roads and Maritime	Detailed design
Impacts on access in the bushland area	During detailed design, Roads and Maritime will investigate the feasibility of an additional pedestrian access point across the proposed road corridor in the bushland area in consultation with nearby landowners, in order to provide improved connectivity between the hospital precinct and residential areas to the west.	Roads and Maritime	Detailed design

Impact summary	Mitigation/management measures	Responsibility	Timing
	During detailed design, Roads and Maritime will carry out consultation with Newcastle City Council about the feasibility of modifying the bicentennial walking trail, if required.	Roads and Maritime	Detailed design
Impacts to utilities	Roads and Maritime will co-ordinate work with respective utility providers before any changes to the utility services infrastructure. Where services will be disrupted the affected residents will be consulted before work being carried out.	Roads and Maritime	Detailed design and construction
Private property access	The construction contractor will consult with affected property owners/residents to minimise disruption to access. Where access to property would be disrupted for an extended period, alternative access will be provided. Pedestrian and emergency vehicle access to properties will be maintained at all times.	Construction contractor	Construction
Pedestrian and cyclist access	Pedestrian and cyclist access on existing formal paths will be maintained where possible. Where closure of a formal path is required alternative access and appropriate signage will be provided.	Construction contractor	Construction
Emergency services access	During construction emergency vehicle access to the bushland areas surrounding the project will be provided at all times.	Construction contractor	Construction
Impacts on local businesses	Roads and Maritime will consult with local businesses that would be affected by the project.	Roads and Maritime	Detailed design

5. Conclusion

This social and economic assessment has identified that construction and operation of the project would potentially give rise to positive and negative impacts, with the positive impacts outweighing the negative impacts in the operation phase of the project.

Potential positive impacts

The key positive impact during construction and operation of the project include:

- Potential employment opportunities for the construction of the project.
- Potential increased local and regional business opportunities from supplies to the project and associated project workforce.
- Improved local and regional connectivity and reduced travel time along the Newcastle Inner City Bypass as the project would ease congestion on both the bypass and key parts of the surrounding road network. This would result in benefits to all road users, residents and local communities and improve emergency response.
- The John Hunter Hospital precinct would benefit with improved accessibility as there would be reduced traffic volumes and congestion on the existing eastern entrance on Lookout Road and an additional entrance on the western side provided off the bypass.
- The project would improve pedestrian and cyclist connectivity in the local area through provision of additional shared paths in the study area, including a shared path bridge (for use by both pedestrians and cyclists) over Newcastle Road and a new shared path on the eastern side of Lookout Road, enhancing options for walking and cycling.
- Reduction in traffic volumes along Lookout Road, Croudace Street and Newcastle Road would result in improved amenity for residents in the area due to reduced noise levels and improved air quality.
- The project would provide improved accessibility to the bushland area for bushfire management services including new connections to the existing fire trail network within the bushland.

Potential negative impacts

The key negative impact during construction and operation of the project include:

- The project would permanently change the land use of the area under the proposed road corridor from residential, bushland and recreational use to infrastructure. The project would acquire small sections of Jesmond Park and George McGregor Park resulting in the loss of about 3.1 hectares of parkland representing about nine per cent of these areas.
- The project would directly impact about 57.7 hectares, of which about 23.4 hectares is already owned by Roads and Maritime and about 33 hectares is publicly owned. Most of the land directly impacted is designated as a road corridor for the project and is either already owned by Roads and Maritime, or by other Government agencies where acquisition is not required and ownership would be transferred to Roads and Maritime in accordance with the *Roads Act 1993*.
- The acquisition and land use changes would result in changed use of recreational areas within the bushland which are informally used for bushwalking and mountain bike riding and would require removal and potential relocation of part of the Disc Golf course at Jesmond Park.

- The project would sever existing informal access between the John Hunter Hospital precinct and residential areas to the west and partially impact on the western portion of a bicentennial walking trail.
- Temporary disruptions to property access during construction for some properties including those on Lookout Road and Newcastle Road. Where access to property would be disrupted for an extended period, alternative access would be provided.
- Temporary disruptions to existing pedestrian paths, shared paths and on-road cycleways during construction.
- Construction of the project would impact on roads within and immediately next to the work with modified arrangements such as changes to speed limits, which could lead to short-term travel delays for motorists.
- Amenity impacts on nearby sensitive receivers associated with construction activities.
- Increased noise levels during operation for some sensitive receivers near the project.

Impact management measures

Roads and Maritime will implement the management measures as outlined in Section 4 to minimise or avoid the negative impacts arising from the project. Roads and Maritime will carry out further consultation with the community and stakeholders during detailed design and construction in accordance with the draft Community Consultation Framework that will be finalised during detailed design.

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Appendices

Appendix A – Demographic summary

	2011		2011		2011		2006		2006		2006	
	Newcastle LGA		Lake Macquarie LGA		NSW		Newcastle LGA		Lake Macquarie LGA		NSW	
	No.	%	No	%	No.	%	No.	%	No	%	No.	%
Social characteristics												
Population												
Total population	148,535	-	189,005		6,917,658	-	141,753	-	183,140		6,549,177	-
Male	73,152	49.2	92,310	48.8	3,408,878	49.3	69,149	48.8	89,638	48.9	3,228,451	49.3
Female	75,383	50.8	96,695	51.2	3,508,780	50.7	72,604	51.2	93,502	51.1	3,320,726	50.7
Age												
0-4 years	9,006	6.1	11,293	6.0	458,736	6.6	8,261	5.8	10,668	5.8	420,431	6.4
5-9 years	8,332	5.6	11,426	6.0	434,608	6.3	7,982	5.6	12,005	6.6	431,924	6.6
10-14 years	7,966	5.4	12,451	6.6	439,168	6.3	8,076	5.7	13,200	7.2	446,561	6.8
15-19 years	9,055	6.1	12,979	6.9	443,416	6.4	9,320	6.6	12,879	7.0	439,862	6.7
20-24 years	12,939	8.7	10,807	5.7	449,685	6.5	12,436	8.8	10,278	5.6	431,854	6.6
25-29 years	11,827	8.0	9,766	5.2	473,160	6.8	10,155	7.2	8,654	4.7	424,154	6.5
30-34 years	10,232	6.9	9,869	5.2	468,336	6.8	9,960	7.0	10,685	5.8	466,891	7.1
35-39 years	10,129	6.8	11,762	6.2	488,124	7.1	9,608	6.8	11,986	6.5	474,684	7.2
40-44 years	9,822	6.6	12,532	6.6	483,502	7.0	9,802	6.9	12,769	7.0	483,159	7.4
45-49 years	9,878	6.7	12,926	6.8	481,428	7.0	9,954	7.0	13,576	7.4	475,233	7.3
50-54 years	9,837	6.6	13,396	7.1	469,024	6.8	9,164	6.5	12,720	6.9	429,103	6.6
55-59 years	8,763	5.9	12,657	6.7	419,612	6.1	8,125	5.7	12,432	6.8	401,921	6.1
60-64 years	7,808	5.3	12,296	6.5	390,678	5.6	6,498	4.6	10,535	5.8	317,625	4.8
65-69 years	6,112	4.1	10,215	5.4	204,327	4.4	5,353	3.8	8,468	4.6	254,424	3.9
70-74 years	4,917	3.3	7,919	4.2	237,362	3.4	4,831	3.4	7,230	3.9	210,901	3.2
75-79 years	4,174	2.8	6,521	3.5	186,032	2.7	4,859	3.4	6,601	3.6	188,091	2.9

	2011		2011		2011		2006		2006		2006	
	Newcastle LGA		Lake Macquarie LGA		NSW		Newcastle LGA		Lake Macquarie LGA		NSW	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
80-84 years	3,874	2.6	5,375	2.8	150,724	2.2	4,103	2.9	4,830	2.6	140,704	2.1
85 years and over	3,863	2.6	4,815	2.5	139,735	2.0	3,266	2.3	3,624	2.0	111,655	1.7
Median age	37	-	41	-	38	-	37	-	40	-	37	-
Cultural diversity												
Aboriginal and Torres Strait Islander population	3,927	2.6	5,594	3.0	172,621	2.5	3,020	2.1	4,297	2.3	138,506	2.1
Overseas born	18,480	12.4	18,353	9.7	1,778,550	25.7	16,091	11.4	17,105	9.3	1,555,841	23.8
Language other than English spoken at home	12,340	8.3	7,147	3.8	1,554,331	22.5	10,174	7.2	12,538	6.8	1,314,556	20.1
Household composition												
Family households	37,309	63.8	52,076	73.8	1,777,400	71.9	35,559	60.5	50,444	74.8	1,678,502	67.9
Single (or lone) person households	17,266	29.5	16,803	23.9	599,149	24.2	17,010	29.0	15,656	23.2	562,626	22.8
Group households	3,877	6.6	1,652	2.3	94,746	3.8	3,426	5.8	1,490	2.2	87,090	3.5
Average number of people per household	2.4	-	2.5	-	2.6	-	2.3	-	2.6	-	2.6	-
Family composition												
Couple family without children	14,704	38.8	21,127	39.7	669,019	36.6	13,857	38.4	19,718	38.4	618,583	36.0
Couple family with children	15,368	40.5	22,259	41.8	831,850	45.5	14,445	40.1	22,392	43.6	792,685	46.2
One parent family	7,022	18.5	9,201	17.3	297,904	16.3	6,941	19.2	8,635	16.8	275,799	16.1
Other family	813	2.1	674	1.3	30,780	1.7	817	2.3	582	1.1	29,153	1.7

	2011		2011		2011		2006		2006		2006	
	Newcastle LGA		Lake Macquarie LGA		NSW		Newcastle LGA		Lake Macquarie LGA		NSW	
	No.	%	No	%	No.	%	No.	%	No	%	No.	%
Dwelling structure												
Total occupied dwellings	58,451	92.3	70,558	91.7	2,471,299	90.3	58,755	92.9	67,443		2,470,451	90.5
Separate house	42,986	73.5	60,962	79.2	1,717,699	69.5	43,095	73.3	58,821	87.2	1,721,777	69.7
Semi-detached, row or terrace house, townhouse etc.	7,057	12.1	5,117	6.6	263,926	10.7	6,385	10.9	4,631	6.9	241,351	9.8
Flat, unit or apartment	8,124	13.9	3,743	4.9	465,189	18.8	8,782	14.9	3,030	4.5	470,496	19.0
Other dwelling	200	0.3	702	0.9	21,140	0.9	468	0.8	917	1.6	34,819	1.4
Tenure												
Owned outright	18,056	30.9	27,001	39.6	820,006	33.2	18,843	32.1	26,625	39.5	820,540	33.2
Owned with a mortgage	18,587	31.8	24,933	36.6	824,292	33.4	16,671	28.4	23,094	34.2	745,336	30.2
Rented	19,813	33.9	16,263	23.8	743,050	30.1	18,841	32.1	15,054	22.3	700,654	28.4
Other tenure type	403	0.7	611	3.8	20,418	0.8	419	0.7	758	1.1	20,070	0.8
Tenure type not stated	1,592	2.7	1,751	10.8	63,530	2.6	3,982	6.8	1,911	2.8	183,850	7.4
Socio-economic indicators for area (SEIFA)												
Index of Advantage/Disadvantage	991	-			-	-	989	-			-	-
Index of Disadvantage	994	-			-	-	983	-			-	-

	2011		2011		2011		2006		2006		2006	
	Newcastle LGA		Lake Macquarie LGA		NSW		Newcastle LGA		Lake Macquarie LGA		NSW	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Need for assistance												
People with need for assistance	8,730	5.9	11,572	6.1	338,362	4.9	8,055	5.7	9,874	5.4	278,241	4.2
Vehicle ownership												
Households with no vehicles	6,686	11.4	5,026	7.3	258,153	10.4	8,155	14.6	5,806	8.6	271,156	11.6
Households with one vehicle	22,555	38.6	24,666	36.1	933,953	37.8	22,455	40.1	24,635	36.5	892,686	38.3
Households with two or more vehicles	27,147	46.5	38,729	56.6	1,200,729	48.6	23,062	41.2	34,499	51.2	1,073,808	46.1
Travel to work (one method)												
Train	523	0.9	983	1.4	193,098	7.7	428	0.9	544	0.9	158,000	6.9
Bus	1,542	2.7	1,101	1.5	116,657	4.6	1,416	2.8	915	1.5	100,058	4.3
Ferry	78	0.1	21	0.0	6,788	0.3	62	0.1	8	0.0	6,004	0.3
Tram (includes light rail)	0	0.0	5	0.0	1,263	0.05	4	0.0	8	0.0	1,051	0.0
Taxi	159	0.3	76	0.1	7,730	0.3	144	0.3	93	0.2	8,219	0.4
Car, as driver	45,936	79.8	58,938	81.6	1,807,359	71.8	39,149	77.9	51,753	83.9	1,639,528	71.2
Car, as passenger	3,900	6.8	4,700	6.5	157,359	6.3	3,865	7.7	4,543	7.4	166,871	7.2
Truck	507	0.9	1,056	1.5	38,584	1.5	664	1.3	1,343	2.2	45,953	2.0
Motorbike/scooter	623	1.1	526	0.7	19,629	0.8	483	1.0	479	0.8	16,495	0.7
Bicycle	1,279	2.2	374	0.5	23,358	0.9	1,042	2.1	366	0.6	19,274	0.8
Other	268	0.5	286	0.4	16,262	0.6	175	0.3	270	0.4	14,951	0.6
Walked only	2,715	4.7	1,348	1.9	128,340	5.1	2,847	5.7	1,370	2.2	127,446	5.5

	2011		2011		2011		2006		2006		2006	
	Newcastle LGA		Lake Macquarie LGA		NSW		Newcastle LGA		Lake Macquarie LGA		NSW	
	No.	%	No	%	No.	%	No.	%	No	%	No.	%
Total one method	57,530	-	69,414		2,516,427	-	50,279	-	61,692		2,303,850	-
Economic characteristics												
Income												
Median weekly personal income	563	-	520		561	-	409	-	394		461	-
Median weekly household income	1,165	-	1,172		1,237	-	885	-	922		1,036	-
Employment												
Total labour force	74,541	-	88,251	57.4	3,334,858	-	67,319	-	82,228		3,092,600	-
Unemployment	4,282	5.7	4,659	5.3	196,525	5.9	4,889	7.3	5,491	6.7	183,157	5.9
Industry of employment												
Agriculture, forestry and fishing	188	0.3	250	0.3	69,576	2.2	302	0.5	333	0.4	78,661	2.7
Mining	1,129	1.6	2,184	2.6	31,186	1.0	599	1.0	1,465	1.9	20,315	0.7
Manufacturing	6,463	9.2	8,602	10.3	264,865	8.4	6,111	9.8	8,511	11.1	277,985	9.6
Electricity, gas, water and waste services	1,146	1.6	1,634	2.0	34,203	1.1	907	1.5	1,343	1.8	29,184	1.0
Construction	4,634	6.6	7,571	9.1	230,057	7.3	4,121	6.6	7,059	9.2	212,729	7.3
Wholesale trade	2,001	2.8	2,639	3.2	138,890	4.4	2,039	3.3	2,779	3.6	136,758	4.7
Retail trade	7,339	10.4	9,799	11.7	324,727	10.3	7,093	11.4	9,812	12.8	323,929	11.1
Accommodation and food services	5,446	7.8	5,276	6.3	210,380	6.7	4,752	7.6	4,602	6.0	190,455	6.5
Transport, postal and warehousing	2,852	4.1	3,583	4.3	155,027	4.9	2,519	4.0	3,305	4.3	145,516	5.0

	2011		2011		2011		2006		2006		2006	
	Newcastle LGA		Lake Macquarie LGA		NSW		Newcastle LGA		Lake Macquarie LGA		NSW	
	No.	%	No	%	No.	%	No.	%	No	%	No.	%
Information media and telecommunications	872	1.2	810	1.0	72,488	2.3	939	1.5	903	1.2	68,977	2.4
Financial and insurance services	2,362	3.4	2,779	3.3	158,422	5.0	2,137	3.4	2,653	3.5	144,867	5.0
Rental, hiring and real estate services	1,071	1.5	1,181	1.4	51,554	1.6	1,074	1.7	1,194	1.6	50,586	1.7
Professional scientific and technical services	5,220	7.4	4,576	5.5	247,295	7.9	4,336	6.9	3,947	5.1	213,253	7.3
Administrative and support services	2,082	3.0	2,466	3.0	102,354	3.3	1,715	2.7	2,030	2.6	90,430	3.1
Public administration and safety	4,813	6.9	4,722	5.6	192,634	6.1	4,279	6.9	4,405	5.7	174,912	6.0
Education and training	6,636	9.4	7,159	8.6	248,951	7.9	5,771	9.2	6,482	8.4	219,676	7.6
Health care and social assistance	11,203	15.9	12,129	14.5	364,321	11.6	9,386	15.0	10,045	13.1	304,343	10.5
Arts and recreation services	967	1.4	918	1.1	46,330	1.5	795	1.3	777	1.0	39,579	1.4
Other services	2,564	3.6	3,604	4.3	117,615	3.7	2,271	3.6	3,347	4.4	110,093	3.8
Inadequately described/not stated	1,268	1.8	1,710	2	77,455	2.5	1,280	2.1	1,745	2.3	77,193	2.7
Total	70,256	-	83,592		3,138,330	-	62,426	-	76,737		2,909,441	-
Occupation												
Professionals	18,065	25.7	15,919	19.0	713,548	22.7	15,053	24.1	13,890	18.1	616,279	21.2

	2011		2011		2011		2006		2006		2006	
	Newcastle LGA		Lake Macquarie LGA		NSW		Newcastle LGA		Lake Macquarie LGA		NSW	
	No.	%	No	%	No.	%	No.	%	No	%	No.	%
Clerical and Administrative Workers	9,915	14.1	12,735	15.2	473,141	15.1	9,059	14.5	11,758	15.3	447,952	15.4
Technicians and Trades Workers	9,645	13.7	13,940	16.7	414,668	13.2	9,017	14.4	13,240	17.3	396,720	13.6
Community and Personal Service Workers	7,379	10.5	8,319	10.0	297,667	9.5	6,206	9.9	6,897	9.0	249,577	8.6
Managers	6,937	9.9	8,128	9.7	418,333	13.3	6,129	9.8	7,685	10.0	396,460	13.6
Sales Workers	6,909	9.8	8,816	10.5	290,496	9.3	6,517	10.4	8,613	11.2	282,292	9.7
Labourers	6,311	9.0	8,305	9.9	273,129	8.7	5,971	9.6	7,955	10.4	277,548	9.5
Machinery Operators and Drivers	4,090	5.8	6,189	7.4	199,438	6.4	3,599	5.8	5,479	7.1	187,135	6.4
Educational attainment												
Educational Attainment												
Completion of Year 12 (or equivalent)	55,126	46.4	52,019	33.8	2,631,287	49.2	45,983	39.2	44,520	30.2	2,224,501	42.4

Sources: ABS 2006(a)(b)(c)(d), 2011(a)(b)(c)(d)

Tourism data (four year annual average to the year ending September 2014)

Key measures	Newcastle	NSW
Total visitors (overnight and domestic daytrip) (000's)	3,494	80,316
Total spend (overnight and domestic daytrip) (\$ Million)	774	26,503

Source: <http://www.destinationnsw.com.au/wp-content/uploads/2014/03/Newcastle-LGA-profile-1.pdf>

Appendix B – Social infrastructure by suburb

Jesmond social infrastructure

Social infrastructure	Jesmond
About	Jesmond is home to a variety of facilities that make it a convenient residential area. The suburb provides a commercial centre as well as residential area for both students of the university and the aging, with specific aged housing facilities. Jesmond has become a multicultural area due to many international university students living in the suburb.
Education facilities	<ul style="list-style-type: none"> • 2 child care services - Jesmond Community Preschool and Jesmond Early Education Centre • 2 primary schools - Heaton Primary and Jesmond Primary • 1 secondary school - Jesmond Campus of Callaghan College • The University of Newcastle is located just north of Jesmond
Community, cultural and recreational facilities	<ul style="list-style-type: none"> • Jesmond Park, Heaton Park and Maclure Reserve provide large open space areas in the suburb. These parks offer children's equipment, shared paths and pedestrian paths, picnic areas and a skate ramp. • Jesmond Neighbourhood Centre (44 Mordue Parade) and Heaton Birmingham Gardens Bowling Club are located within Heaton Park.
Health and wellbeing facilities	<ul style="list-style-type: none"> • Aged housing facilities, aquatic physiotherapy
Other major facilities and services	<ul style="list-style-type: none"> • Bus interchange. • Newcastle Inner City Bypass dissects the suburb. • Jesmond's commercial centre is situated on Blue Gum Road. There are a number of mixed businesses as well as a Stockland Jesmond Shopping Centre. The area serves Newcastle with a district centre function.

Lambton social infrastructure

Social infrastructure	Lambton
About	Lambton is a residential suburbs located around some of Newcastle's main roads making it a convenient suburb for transport.
Education facilities	<ul style="list-style-type: none"> • 2 primary schools- Lambton Primary School and St John's Primary School • 1 secondary school- Lambton High School
Community, cultural and recreational facilities	<ul style="list-style-type: none"> • Lambton Library (Morehead Street, Corner Elder Street). • The Lambton area has a number of small parks and reserves as well as some sporting facilities. Lambton Park, Lewis Oval, Rudd Park and Acacia Avenue Reserve provide sporting fields and children's equipment. • There is a large swimming centre- Lambton swimming pool (Durham Road), tennis facilities, a bowling club and a shared path linking to Jesmond. • Multicultural Neighbourhood Centre

Social infrastructure	Lambton
Health and wellbeing facilities	<ul style="list-style-type: none"> Services include counselling, physiotherapy and sports medicine, healthcare services and psychology Aged care facility
Other major facilities and services	<ul style="list-style-type: none"> Emergency services- fire station (67 De Vitre Road) Suburb is intersected by Croudace Street Elder Street provides Lambton with necessary mixed businesses. The street is not near a main road but is still successful in serving the local community.

New Lambton social infrastructure

Social infrastructure	New Lambton
About	New Lambton is a mostly residential area situated in the centre of Newcastle, providing easy access to all areas of the city. Blackbutt Reserve borders the project along Lookout Road and provides an extensive buffer to these residential areas.
Education facilities	Two infant schools and three primary schools.
Community, cultural and recreational facilities	New Lambton contains a number of parks and children's facilities as well as picnic areas and walking tracks.
Health and wellbeing facilities	New Lambton contains a number of counselling, doctors and pharmacy services and is in close proximity to the hospital precinct at New Lambton Heights.
Other major facilities and services	The suburb of New Lambton also contains commercial and retail uses. New Lambton's main commercial centre runs along Regent Street and Lambton Road with a smaller centre on Orchardtown Road.

New Lambton Heights social infrastructure

Social infrastructure	New Lambton Heights
About	The New Lambton is a residential area situated in the centre of Newcastle, providing easy access to all areas of the city. A large portion of the suburb comprises the hospital precinct and bushland reserve.
Education facilities	<ul style="list-style-type: none"> 1 primary school- New Lambton Heights Infant School (kindergarten to Year 2).
Community, cultural and recreational facilities	<ul style="list-style-type: none"> New Lambton Heights borders Blackbutt Reserve, which provides walking tracks and picnic areas. Other open space areas include Bushland Reserve and several other smaller reserves.
Health and wellbeing facilities	<ul style="list-style-type: none"> A large portion of the suburb comprises the hospital precinct including John Hunter Hospital, Hunter Medical Research Institute, Newcastle Private Hospital, Newcastle Urology, Hunter New England Health. Counselling, doctors, pharmacy.

Social infrastructure	New Lambton Heights
Other major facilities and services	<ul style="list-style-type: none"> The adjoining suburb of New Lambton provides commercial and retail uses.

Rankin Park social infrastructure

Social infrastructure	Rankin Park
About	Rankin park is a residential suburb located about 10 km from Newcastle's central business district.
Education facilities	<ul style="list-style-type: none"> Cambridge Hills Pre-School (Elbrook Drive)
Community, cultural and recreational facilities	<ul style="list-style-type: none"> Rankin Park is home to George McGregor Park, a 24 hectare bushland reserve. Muranbarnbah Park, which features a children's playground area, is also located on Rosedale Crescent. The suburb also includes and a number of other green spaces.
Health and wellbeing facilities	<ul style="list-style-type: none"> Suburb adjoins hospital precinct which includes John Hunter Hospital, Newcastle Private Hospital and Hunter Medical Research Institute
Other major facilities and services	<ul style="list-style-type: none"> The nearest commercial centre runs along Regent Street and Lambton Road in New Lambton.

Wallsend social infrastructure

Social infrastructure	Wallsend
About	Wallsend is the hub of western Newcastle offering both commercial and residential spaces.
Education facilities	<ul style="list-style-type: none"> Wallsend After Hours Care, Wallsend Community Pre-School Kindergarten and Wallsend Orana Community Pre-School all provide childcare services in the area. Plattsburg Primary, Wallsend Primary and St Patrick's Primary serve the area, while Callaghan College, Wallsend Campus is the local high school.
Community, cultural and recreational facilities	<ul style="list-style-type: none"> Wallsend District Library (30 Bunn Street). The area is home to Blue Gum Hills Regional Park (including tree top adventure park), Plattsburg Park including Col Curran Soccer field, Carrington Street Reserve, Wallsend Park (includes skate park), Wal Herd Park, Invermore Close Reserve, Federal Park, Wallsend Brickworks Park and some smaller reserves. These provide picnic areas as well as children's play equipment. A small cycleway runs near the commercial centre and a squash and swimming facility is available. Wallsend swimming centre. Silveridge Community Centre (13 Iranda Grove). Wallsend Pioneers Memorial Hall (Cowper Street). Wallsend General Cemetery.

Social infrastructure	Wallsend
Health and wellbeing facilities	<ul style="list-style-type: none"> Community health care centre, dental Several aged care facilities including assisted living facility, nursing home
Other major facilities and services	<ul style="list-style-type: none"> Emergency services- fire and rescue station (27 Devon Street). Medium frequency transport system with buses into the Newcastle central business district and to surrounding suburbs. The area has high accessibility to the freeway and large roads linking to the city. Summerhill Waste Management Centre takes up a large portion of the suburb. Wallsend has a large commercial district offering mixed businesses, supermarkets, takeaway outlets, banks and community services and facilities. The area extends from Stockland Wallsend Plaza to the shops along Cowper and Nelson Streets.

Elmore Vale social infrastructure

Social infrastructure	Elmore Vale
About	Elmore Vale benefits from good access to schools, shopping, and other Newcastle suburbs. Residents of the area tend to live in the suburb for more than five years and it is mainly populated by families with school aged children, although it does have a retirement village. The suburb is enjoyed for its suburban housing and pleasant surrounds.
Education facilities	<ul style="list-style-type: none"> 3 childcare facilities- Elmore Vale Pre School (Jubilee Road), Elmore Vale Early Learning Centre (Croudace Road), Elmore Before and After School Care (Croudace Road) 1 primary school- Elmore Vale Primary and Wallsend South Public School Macquarie College- pre-school to Year 12 (Lake Road)
Community, cultural and recreational facilities	<ul style="list-style-type: none"> A number of reserves are located in the area and sporting fields and parks are also available (includes Invermore CI Reserve and Dangerfield Drive Reserve, Sygna CI Reserve, Elmore Vale Park (includes skate park) and Walker Fields, Aries Way Reserve and Taurus Street Reserve) The Viking Aquatic and Fitness Centre (Wallsend Road) – one of Newcastle’s suburban gyms Elmore Vale Community Hall (122 Cardiff Road) Elmore Vale Community Centre (rear 129 Croudace Road)
Health and wellbeing facilities	<ul style="list-style-type: none"> Assisted living facility, retirement village General practice and pharmacy in Elmore Shopping Centre
Other major facilities and services	<ul style="list-style-type: none"> Large portion of suburb was previously Gretley Colliery Newcastle Wallsend Coal Company - now closed Self-sufficient in terms of commercial and retail facilities- the suburb has its own shopping centre (Elmore Shopping Centre) with a supermarket and some small businesses

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