



## Hexham Straight Widening

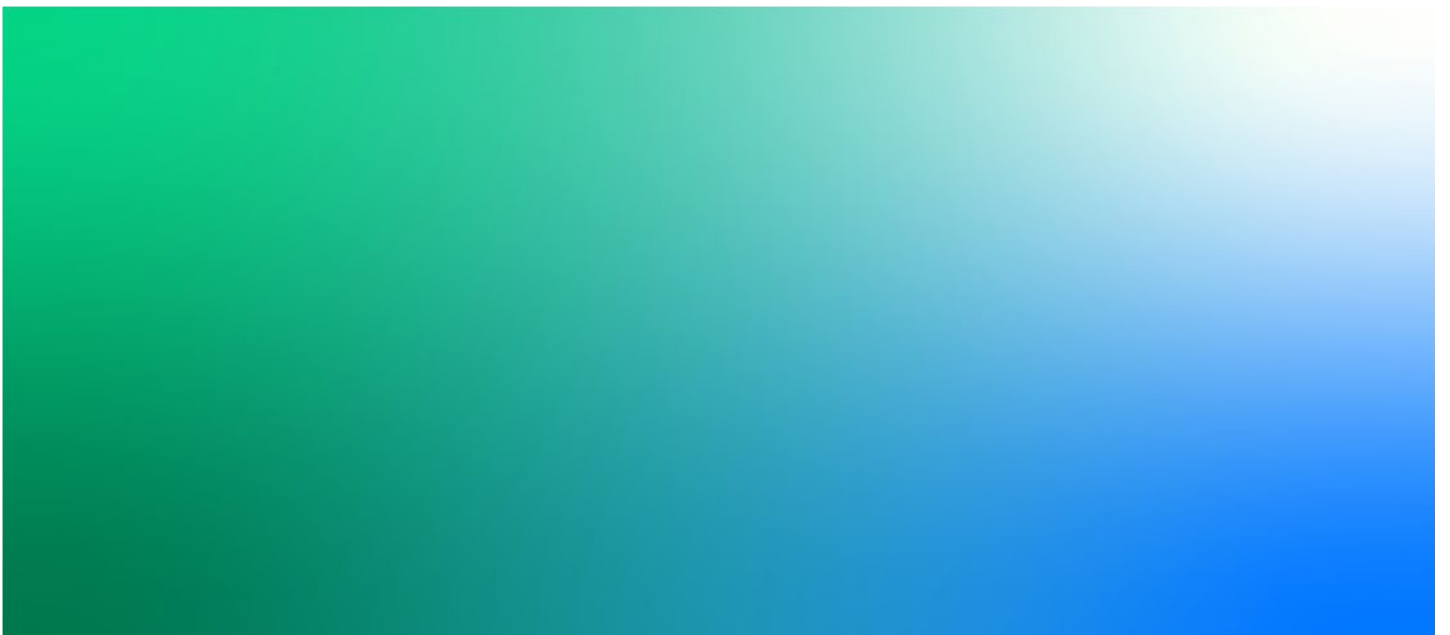
Land Use, Property and Socio-economic Assessment

IA301100-HSW-EN-RPT-0012 | 06

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Transport for NSW

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## Executive summary

### Background

Transport for NSW (Transport) is proposing to widen a six kilometre section of the Pacific Highway (Maitland Road) from four lanes to six lanes, starting about 290 metres south of the intersection with the Newcastle Inner City Bypass at Sandgate, and extending through to about 760 metres north of Hexham Bridge, in Hexham, NSW (the proposal). The proposal would create two additional lanes, one in each direction and would include the replacement of the twin bridges at Ironbark Creek. The section of road is known as the 'Hexham Straight' and is located within the City of Newcastle local government area (LGA), with a small portion of the construction area on the eastern side of the Hunter River within the Port Stephens Council LGA.

Maitland Road is a critical link as part of the National Land Transport Network and is among the busiest transport corridors carrying some of the highest traffic volumes in the Hunter. The proposal is required to reduce congestion and improve safety along Maitland Road.

The proposal is subject to assessment under two planning pathways, a review of environmental factors (REF) under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and an environmental impact statement (EIS) under Part 4 of the EP&A Act. The majority of the proposal (the REF area) is subject to approval under Division 5.1 of the EP&A Act that would be determined through a REF by Transport. However, a small part of the proposal (3.28 hectares) is within land mapped as 'Coastal Wetlands' under State Environmental Planning Policy (Coastal Management) 2018 (CM SEPP). As such, that part of the proposal (known as the EIS area) is subject to approval under Part 4 of the EP&A Act and will be assessed within an EIS.

### Purpose

This report has been prepared to assess the impacts of the proposal on land use, property and socio-economic assessment and supports both the EIS and the REF. Secretary's Environment Assessment Requirements (SEARs) relevant to the EIS portion of the assessment (EIS area) include:

- The assessment for impacts of construction and operation on and from surrounding land uses
- An assessment of safety and access to intersections and properties during construction
- Consideration and details to whether the proposed development is within, adjacent, or in proximity to a watercourse that flows directly into DPIE-managed conservation estate (e.g. a national park, nature reserve, state conservation area, land which is declared wilderness under the *Wilderness Act 1987*), consultation with DPIE (EES Group) and consistency with relevant guidelines.

### Overview of impacts to land use, property and socio-economic values in the REF area

During construction, the project would have temporary positive impacts for local employment and businesses and industry in the REF area. Negative impacts on communities, business and industry during the construction phase would mainly be associated with:

- Direct and indirect employment opportunities for communities in the study area and surrounding LGAs through the creation of direct employment opportunities during construction
- Temporary disruptions for motorists and road users during construction due to temporary lane changes and reduced speed limits that have potential to cause delays for customers, staff and deliveries accessing businesses in the study area. This would potentially inconvenience some people accessing businesses near the proposal
- Temporary changes to local amenity for occupants of residential and commercial properties, and users of community facilities near to construction works. These temporary changes would possibly impact on individuals' use and enjoyment of these properties, particularly within outdoor areas

- Noise and light spill from night works, resulting in potential temporary impacts on night-time amenity at residential properties closest to these works and impacts on health and wellbeing due to sleep disturbance or disruptions to sleeping patterns
- Dust from construction activities, resulting in possible effects on the health and wellbeing of some people near to construction works who may be more sensitive to changes in air quality
- Increased noise, dust and construction traffic and access changes temporarily impacting on users and staff of community services and facilities, such as Hexham Bowling Club, Hexham Park, the Church at Old Maitland Road, and Calvary St Joseph's Retirement Community
- Increased construction traffic on roads within the study area and changes to road conditions, temporarily impacting on road users including private and commercial motorists, cyclists and public transport users.

Once operational, the proposal would have positive impacts for local and regional communities, business and industry in the REF area by enhancing access and connectivity for residents, workers, businesses and freight in the study area and surrounding LGAs, supporting future growth and development of employment areas and strategic centres. The main negative impacts on communities, business and industry from the proposal's operation would mainly be associated with:

- Changes in local access at Hexham due to the restriction of right-turn movements, resulting in changes to local routes and increasing travel distance required to access residential properties, businesses and community facilities
- Use of the U-turn facility at Shamrock Street, Hexham impacting on perceptions of safety for local residents, amenity of residential properties and possible disruptions to sleeping patterns for some individuals.

### **Overview of impacts to land use, property and socio-economic values in the EIS area**

The EIS area does not contain any businesses or residential dwellings.

During construction, potential impacts on land use in the EIS area would mainly result from temporary use of land for construction sites and changes in amenity for some uses near to construction works and temporary construction facilities.

There are no formal social infrastructure facilities within the EIS area and construction activities are not expected to impact any formal social infrastructure facilities in the wider study area. From the commencement of the construction phase, the proposal would result in the permanent loss of the informal access road to the south of Ironbark Creek, which currently provides vehicular access for recreational fishing. Access to areas within the EIS construction footprint used for recreational fishing would be temporarily disrupted during construction, although access by foot would be maintained to these areas once the proposal is operational.

During construction, a temporary bus stop may be required until the permanent bus stop near the intersection of Maitland Road and Shamrock Street (Stop ID 2322137) is relocated.

The proposal would not result in any direct impacts on the Hunter Wetlands National Park, Hexham Swamp Nature Reserve or Kooragang Nature Reserve, although there is potential for indirect impacts on these natural features.

There would be no impacts on property and land use due to the operation of the EIS area. During operation, impacts to social infrastructure within the EIS area include:

- The bus stop (ID 2322137) located on the southbound carriage way of Maitland Road at the intersection of Maitland Road and Shamrock Street would be permanently relocated. Consultation would be carried out with the affected bus operators during detailed design
- Vehicle access to the informal fishing spot south of Ironbark Creek Bridge would be permanently removed. There are a number of sites within or near to the study area that provide vehicle access for recreational fishing along the nearby waterways and any impacts from the loss of access to this area for recreational

fishing are generally expected to be minor. The area would be able to be accessed by foot once the proposal is operational.

### **Management measures**

Impacts to communities and businesses would be managed through the implementation of mitigation measures for noise and vibration, air quality, traffic and transport, and visual amenity. Access to local businesses and access for emergency vehicles will be maintained during construction and operation. All partial and full acquisitions and associated property adjustments will be carried out in accordance with the requirements of the *Land Acquisition (Just Terms Compensation) Act 1991* and the Land Acquisition Reform 2016 in consultation with landowners. A Community Communication Strategy will also be prepared for the proposal to facilitate communication with the local community, business, and other stakeholders.

### **Conclusion**

The proposal would support improved access and connectivity for local and regional communities, business and industry by providing travel time savings and enhanced travel reliability. This would have long-term benefits and support improved access to employment areas and future growth and development of strategic centres in Greater Newcastle.

Locally, the proposal would require changes to local access routes to residential properties, businesses and community facilities. While these changes are likely to be an inconvenience for motorists currently making these movements and require increasing travel distances, these changes would support improved road safety for road users, and on balance it is considered that the impacts associated with increased travel distances and travel time would be outweighed by the improved safety outcomes for motorists and local communities.

Potential impacts to land use, property and socio-economic values are mainly within the REF area and potential impacts within the EIS area are expected to be minor to negligible.

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## **Limitations**

The sole purpose of this report and the associated services performed by Jacobs was to provide an assessment of land use, property and socio-economic impacts of the Hexham Straight Widening proposal in accordance with the scope of services set out in the contract between Jacobs and Transport for NSW (the Client). That scope of services, as described in this report, was developed with the Client.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

Jacobs derived the data in this report from information sourced from the public domain, Transport for NSW and community and stakeholder feedback. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the proposal and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. Jacobs has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by Jacobs for use of any part of this report in any other context.

This report has been prepared on behalf of, and for the exclusive use of, Jacobs' Client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the Client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

# 1. Introduction

## 1.1 Proposal overview

Transport for NSW (Transport) is proposing to widen about six kilometres of the Pacific Highway (Maitland Road) from four lanes to six lanes, starting about 290 metres south of the intersection with the Newcastle Inner City Bypass at Sandgate, and extending through to about 760 metres north of Hexham Bridge, in Hexham, NSW (the proposal). The proposal would create two additional lanes, one in each direction and would include the replacement of the twin bridges at Ironbark Creek. The section of road is known as the 'Hexham Straight' and is located within the City of Newcastle local government area (LGA) with a small portion of the construction area within the Port Stephens Council LGA (refer to **Figure 1.1**).

Maitland Road is a critical link as part of the National Land Transport Network and is among the busiest transport corridors carrying some of the highest traffic volumes in the Hunter. The proposal is required to reduce congestion and improve safety along Maitland Road during peak travel times.

The proposal is subject to assessment under two planning pathways, a review of environmental factors (REF) under Part 5, Division 5.1 of *Environmental Planning and Assessment Act 1979* (EP&A Act) and an environmental impact statement (EIS) under Part 4 of the EP&A Act. The majority of the proposal (the REF area) is subject to approval under Division 5.1 of the EP&A Act that would be determined through a REF by Transport. However, a small part of the proposal (3.28 hectares) is within land mapped as 'Coastal Wetlands' under State Environmental Planning Policy (Coastal Management) 2018 (CM SEPP). As such, that part of the proposal (known as the EIS area) is subject to approval under Part 4 of the EP&A Act and considered within the EIS.

This report has been prepared to assess the impacts of the proposal on land use, property and socio-economic values and supports both the REF and the EIS.

### 1.1.1 The proposal

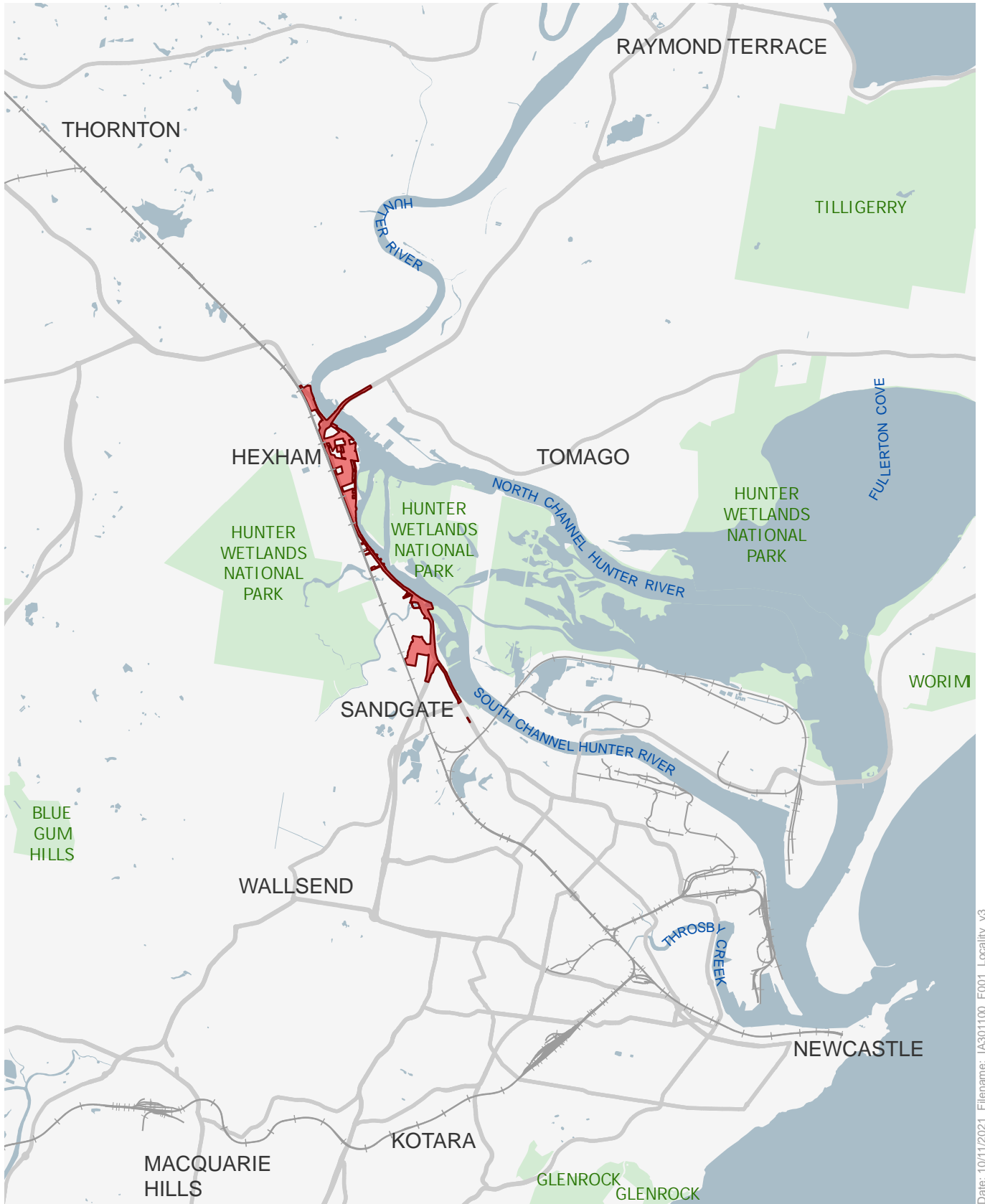
The proposal consists of:

- Widening of Maitland Road for about six kilometres starting about 290 metres to the south of the intersection with the Newcastle Inner City Bypass (A37) at Sandgate and extending to about 760 metres north of Hexham Bridge at Hexham on Maitland Road. The highway would be widened from generally two lanes in each direction to three lanes in each direction
- Replacement of the bridge which spans Ironbark Creek with new twin bridges. The existing bridge and all piers would be demolished, and the outlet of a small drainage channel would be relocated about 10 metres to the east of its existing location
- Minor improvements to nine signalised intersections
- Minor improvements to access roads, unsignalised intersections, entry and exit ramps connecting to the A1 Pacific Highway and the U-turn facility at the northern end of the proposal
- Closure of breaks in the existing median and direct access to two local side roads, one private access road and one U-turn facility
- Provision for a three metre wide shared use path northbound between the Oak Factory and the northern end of the proposal and a new section of off-road shared use path heading east along the Newcastle Inner City Bypass
- Widening of existing footpaths at intersection and bus stops
- Adjustments to property accesses and bus stops
- Provision of U-turn facilities on Sparke Street, Shamrock Street, and Old Maitland Road at Hexham



- Relocation of utilities including power, communications, water, gas and wastewater services
- Modifications and maintenance of existing drainage structures including pits, pipes, headwalls and culverts to suit the road widening and to maintain capacity
- Construction of retaining walls to minimise impacts on nearby properties
- Property acquisition, leases and adjustments
- Construction of hardstand for oversize and overmass (OSOM) vehicle parking at the southern and northern end of the proposal
- Intrusive investigation works such as geotechnical investigations
- Temporary construction facilities, including site compounds and stockpile sites at:
  - One area located in the industrial estate located on Old Maitland Road, Sandgate to the south of Calvary St Joseph's Retirement Community (Compound 1)
  - Two areas located in the industrial estate located to the east of Maitland Road and the west of Old Maitland Road, Hexham extending north from the northern boundary of the Hexham sports field to the area of road corridor underneath the entry ramps to the A1 Pacific Highway and Hexham Bridge (Compound 2)
  - Two areas located in the industrial estate located to the west of Maitland Road, Hexham near the Oak Factory (Compound 3)
  - One area located on vacant land to the east of the U-turn facility at the northern end of the proposal on Maitland Road, Hexham to the west of the main channel of the Hunter River (Compound 4).

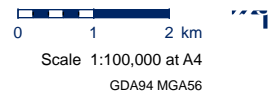
An overview of the proposal is shown in **Figure 1.2**. Construction of the proposal would be staged and would take about 30 months to construct.



Date: 10/11/2021 Filename: IA301100\_F001\_Locality\_v3

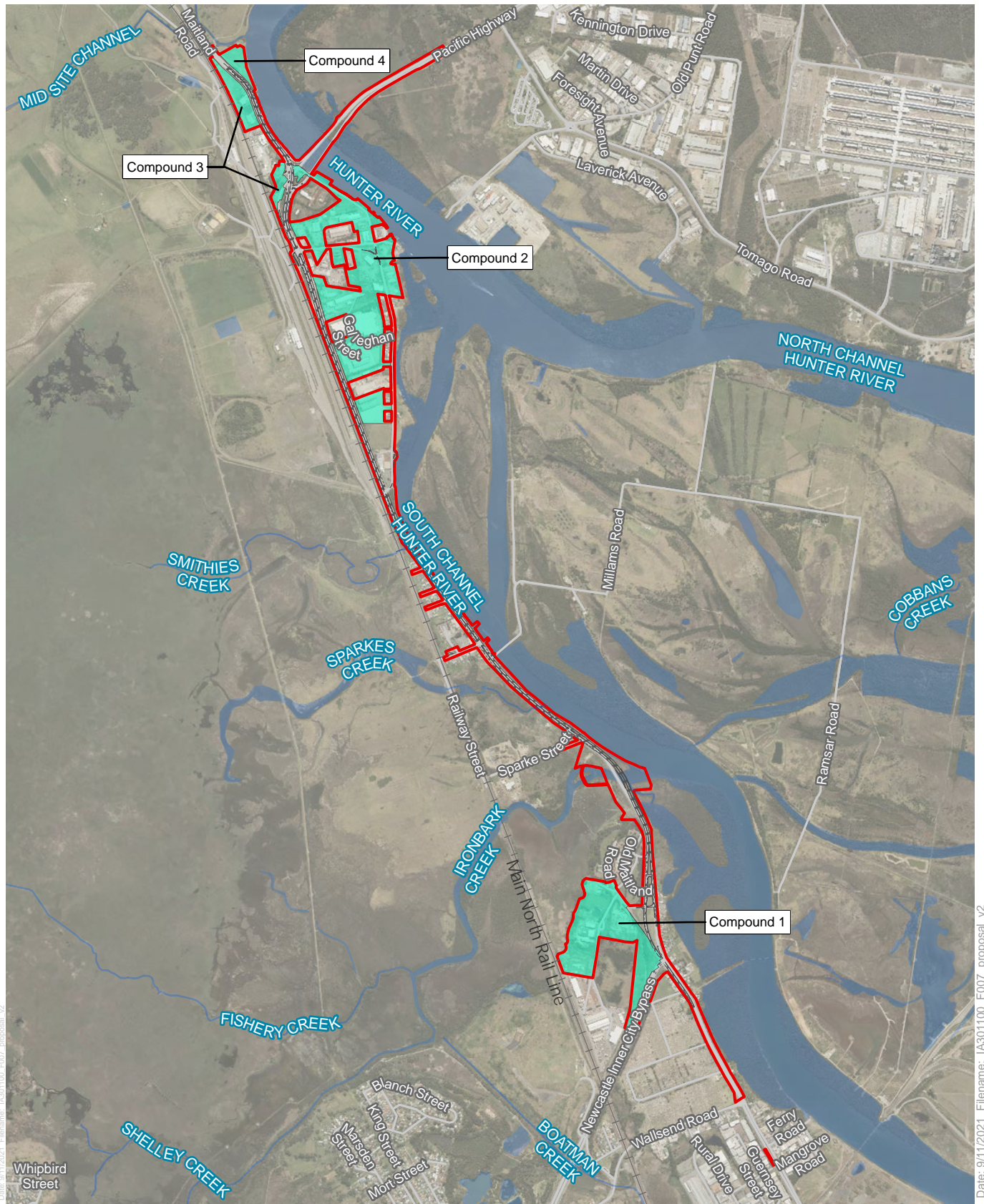
**Legend**

- Construction area
- National Park
- Waterway
- Railway
- Road



**Figure 1.1** Proposal local area  
Hexham Straight Widening

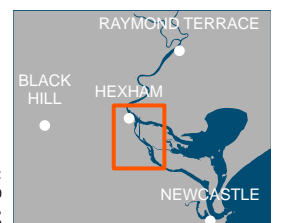
**Data sources:**  
Jacobs 2020  
Department Finance  
Services and Innovation 2020



**Legend**

- The proposal
- ▭ Construction area
- ▭ Construction compound
- ▭ Waterway
- Road
- +— Railway

0 200 400 m  
 Scale 1:30,000 at A4  
 GDA94 MGA56



**Data sources:**  
 Jacobs 2020  
 Department Finance,  
 Services and Innovation 2020

**Figure 1.2** The proposal  
 Hexham Straight Widening

Date: 9/11/2021 Filename: IA301100\_F007\_proposal\_v2

### 1.1.2 The EIS area

The EIS area (refer to **Figure 1.3**) assess impacts of the proposal within land subject to the CM SEPP which are at the following three locations:

- EIS Area 1 – a small area located to the south of Ironbark Creek on the eastern side of Maitland Road and to the west of a parcel of Crown land and a section of Hunter Wetlands National Park. The land mapped as Coastal Wetlands includes areas of remnant mangrove and saltmarsh vegetation and also crosses sections of an existing track that provides access to the south bank of Ironbark Creek and to the base of Ironbark Creek Bridge. Access tracks would be required during construction and the permanent work required for the proposal in this area is comprised of road pavement, earthworks (embankment), construction of piers to support the new bridge over Ironbark Creek and the relocation of an unnamed drainage channel to the southeast of the existing bridge
- EIS Area 2 – a small area located to the north of Ironbark Creek on the eastern side of Maitland Road. The land mapped as Coastal Wetlands includes areas of remnant mangrove, saltmarsh and freshwater wetland vegetation. Access tracks would be required during construction and the permanent work required for the proposal in this area is comprised of road pavement, earthworks (embankment) and construction of piers to support the new bridge over Ironbark Creek
- EIS Area 3 – a small area located on the west bank of the south channel of Hunter River to the east of Maitland Road and to the northwest of Millams Road and the Ash Island Bridge. The land mapped as Coastal Wetlands includes areas of the road shoulder and remnant mangrove vegetation. The permanent work required for the proposal in this area is comprised of road widening work to include a third lane in the eastbound direction, as well as a new road shoulder, batter and upgrades to drainage.

There is potential for the proposal to indirectly impact other areas mapped as Coastal Wetlands under the CM SEPP. These impacts have been assessed within the EIS and relevant specialist reports. The proposal within the EIS area would be constructed and operated together with the proposal within the REF area, which has been assessed in the REF prepared by Transport.

### 1.1.3 The REF area

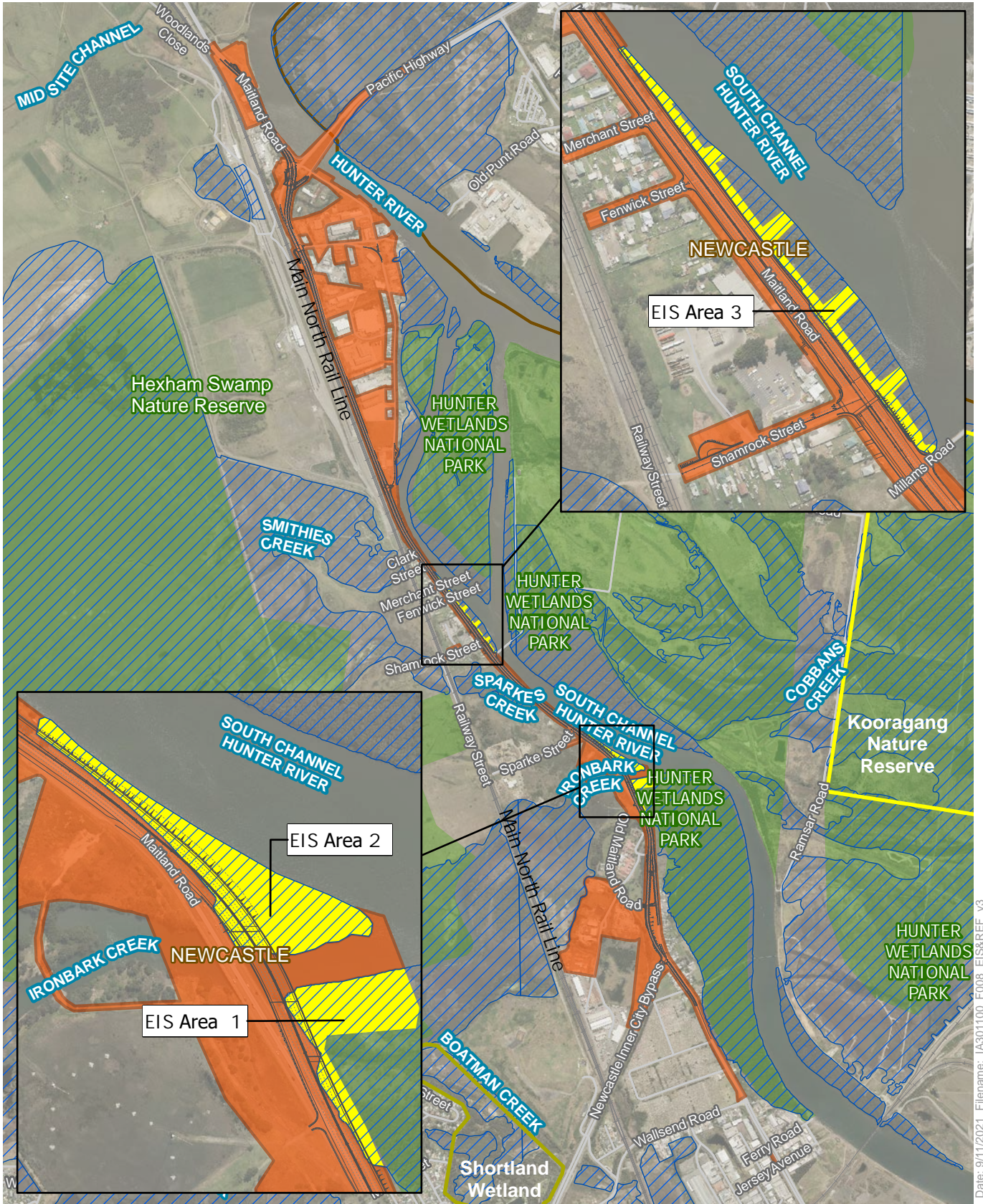
The REF area assesses all other aspects of the proposal included in **Section 1.1.1** that are outside the footprint of the EIS area described in **Section 1.1.2** and shown in **Figure 1.3**.

### 1.1.4 Relationship of the REF and EIS

Detailed discussion of the planning approval framework and consent requirements is provided in the REF and the EIS. In summary, development consent under Part 4 is not usually required for development for the purposes of a road being undertaken by Transport as a public authority. Rather, this development is assessed as an 'activity' under Part 5 of the EP&A Act.

However, on those parts of the land which are identified as Coastal Wetland under the CM SEPP, the development is classified as designated development and requires consent from the City of Newcastle under Part 4 of the EP&A Act. The part of the proposal located within the Coastal Wetlands is therefore assessed under Part 4 of the EP&A Act. An EIS is required to assess the impacts of any works located within the Coastal Wetlands or any impacts on a Coastal Wetland.

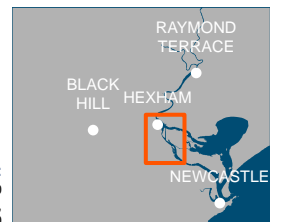
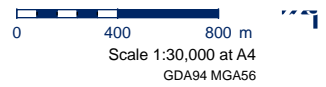
A separate REF has been prepared in accordance with Division 5.1 of the EP&A Act to assess the areas of the proposal located within the REF areas. The REF would be determined by Transport. The proposal within the EIS area would be constructed and operated together with the proposal within the REF area. Together, the EIS and the REF assess the potential environmental impacts of the proposal and it is intended that these documents be read in conjunction with each other. The cumulative impacts of the proposal are located in **Section 6.5**.



Date: 9/11/2021 Filename: I\A301100\_F008\_EIS&REF\_V3

**Legend**

- The proposal
- Railway
- Road
- LGA
- Coastal Wetlands
- Kooragang Nature Reserve
- Shortland Wetland
- National Park



**Data sources:**  
 Jacobs 2020  
 Department Finance,  
 Services and Innovation 2020

**Figure 1.3** EIS area and REF area

Hexham Straight Widening

### 1.1.5 Location

The proposal is located about 10 kilometres north of the City of Newcastle in the suburbs of Sandgate and Hexham. To the east and in some locations next to the proposal is the Hunter River and the South Channel of the Hunter River and the proposal crosses Ironbark Creek. The major freight rail line into the Port of Newcastle uses the Main North Rail Line and this is located west of the proposal and in some locations immediately next to the proposal. The Hunter Wetlands National Park is located both to the east and west of the proposal and the area to the west is also known as Hexham Swamp Nature Reserve. Much of the low-lying national park estate as well as some other low-lying swamp areas including the larger back barrier Hexham Swamp areas are identified as wetlands under the CM SEPP. These low-lying areas connect to two areas of Ramsar listed wetlands identified as the Hunter Estuary Wetlands that include Kooragang Nature Reserve about one kilometre to the east and Shortland Wetlands (including Hunter Wetlands Centre Australia) about 800 metres to the west of the proposal.

The land use along the proposal comprises a mix of transport corridors (road and rail); environmental uses such as wetlands and waterways; recreational areas both public and private; residential areas; and light and heavy industrial areas. The main features within the proposal area and its surrounds include:

- Sandgate Cemetery
- Calvary St Joseph's Retirement Community
- Hexham Bowling Club
- Hexham Park and Cricket Grounds
- Hexham Railway Station
- Residential properties which are located on both sides of Maitland Road to the south of the Calvary St Joseph's Retirement Community, to the west of the proposal along Shamrock Street, Fenwick Street, Merchant Street and Clark Street and along Old Maitland Road behind the industrial estate at Hexham
- Industrial and commercial properties which are located to the north of the Newcastle Inner City Bypass, off Sparke Road at Sandgate and at the northern end of the proposal to the east and north of the Hexham Railway Station.

## 1.2 Purpose and scope of the report

Jacobs was engaged by Transport to undertake a land use, property and socio-economic assessment of the proposal for the REF and the EIS. The purpose of this report is to assess the potential impacts on land use, property and socio-economic values from constructing and operating the proposal. The report:

- Addresses the relevant SEARs listed in **Table 1.1**
- Describes the existing environment with respect to land use, property and socio-economic values
- Assesses the impacts of constructing and operating the proposal on land use, property and socio-economic values
- Recommends measures to mitigate and manage identified impacts.

The methodology for the assessment is described in **Section 3**.

Table 1.1 SEARs relevant to the assessment

SEAR number	Requirements	Where addressed in this report
2.7a	Land-use and development – including: <ul style="list-style-type: none"> <li>the assessment for impacts of construction and operation on and from surrounding land uses</li> </ul>	An assessment of the impacts of construction and operation of the proposal on and from surrounding land uses is included in <b>Section 6.1.2</b> and <b>Section 6.3.2</b> respectively.
	<ul style="list-style-type: none"> <li>an assessment of safety and access to intersections and properties during construction</li> </ul>	An assessment of safety and access to properties during construction is included in <b>Section 6.1.8</b> . An assessment of safety and access to intersections during construction is in <i>Hexham Straight Widening Traffic and Transport Assessment</i> (Jacobs, 2021a).
	<ul style="list-style-type: none"> <li>consideration and details to whether the proposed development is within, adjacent, or in proximity to a watercourse that flows directly into DPIE-managed conservation estate (e.g. a national park, nature reserve, state conservation area, land which is declared wilderness under the <i>Wilderness Act 1987</i>), consultation with DPIE (EES) and consistency with relevant guidelines.</li> </ul>	An assessment of environmental values is included in <b>Section 6.1.6</b> . An assessment of potential impacts on wetlands and aquatic habitats is in <i>Hexham Straight Widening Biodiversity Assessment Report</i> (Jacobs, 2021b), <i>Hexham Straight Widening Biodiversity Development Assessment Report</i> (Jacobs, 2021c) and impacts on surface water features is in <i>Hexham Straight Widening Flooding and Hydrology Assessment</i> (Jacobs, 2021d).

### 1.3 Terms and definitions

The following terms are used in this report:

- Proposal – the widening of a six kilometre section of Maitland Road from four lanes to six lanes, starting about 290 metres south of the intersection with the Newcastle Inner City Bypass at Sandgate, and extending through to about 760 metres north of Hexham Bridge, in Hexham, NSW
- Construction area – the area to be directly impacted by the proposal. This comprises the future construction footprint of the proposed bridge over Ironbark Creek and the upgrade of Maitland Road, including all roadside cut and fill, construction compound areas and parking areas for oversize and overmass vehicles, refer further to **Section 1.1.1**
- Study area – the construction area of the proposal and additional areas that are likely to be affected by the proposal, either directly or indirectly
- EIS area – the areas of the proposal to be assessed under the EIS that are within land subject to the CM SEPP as defined in **Section 1.1.2**
- REF area – the areas of the proposal to be assessed by the REF and this covers all other aspects of the proposal included in **Section 1.1.1** that are outside the footprint of the EIS area described in **Section 1.1.2**
- Proposal local area – the area within 10 kilometres of the proposal.

## 2. Policy and planning setting

### 2.1 NSW policies and plans

#### 2.1.1 Hunter Regional Plan 2036

The *Hunter Regional Plan 2036* (the Regional Plan) (DPE, 2016) is a 20-year vision for the future of the Hunter Region, developed in consultation with Councils, stakeholders and the wider community. It provides an overarching framework to guide the NSW Government's land use planning priorities and decisions over the next 20 years, including more detailed land use plans, development proposals and infrastructure funding decisions.

The vision for the Hunter Region is for it to be the "...leading regional economy in Australia with a vibrant new metropolitan city at its heart". The vision recognises Greater Newcastle as the centrepiece of the region, while beyond Greater Newcastle there are vibrant centres, towns and villages, connected with faster inter-regional transport and digital technology, making it easier for residents and businesses to interact and do business.

The Regional Plan identifies that by 2036, the Hunter Region will support up to 862,250 people and an additional 61,500 jobs. The Regional Plan recognises that opportunities exist to grow the significant employment precincts in the Hunter Region, including at Hexham and Tomago.

Infrastructure investment is considered critical for economic development across the Hunter Region, supporting freight, health and education services, and agribusiness and tourism. Direction 4, which is to enhance interregional linkages to support economic growth, identifies the need for improvements to transport corridors to maintain efficiencies in the network, particularly for freight, and to allow for future growth.

The proposal would support enhanced access and connectivity within the Hunter Region and to adjoining regions. Specifically, the proposal would improve access and connectivity to key employment precincts at Hexham and Tomago and strategic centres such as Raymond Terrace, allowing the safe, efficient and reliable movement of people and freight and supporting future employment and population growth within these locations.

#### 2.1.2 Greater Newcastle Metropolitan Plan 2036

The *Greater Newcastle Metropolitan Plan 2036* (Metropolitan Plan) (DPE, 2018) sets out strategies and actions that will drive sustainable growth across the Greater Newcastle area. The plan aligns with the vision and goals of the Hunter Regional Plan 2036 and guides local planning across the Greater Newcastle LGAs of Cessnock City, Lake Macquarie City, Maitland Council, City of Newcastle and Port Stephens Council.

The vision for Greater Newcastle is to be "Australia's newest and emerging economic and lifestyle city, connected with northern NSW and acknowledged globally as:

- *Dynamic and entrepreneurial, with a globally competitive economy and the excitement of the inner city and green suburban communities*
- *Offering great lifestyles minutes from beaches or bushland, the airport or universities, and from the port to the lake*
- *A national leader in the new economy, with smarter cities and carbon neutral initiatives, and with collaborative governance that makes it a model to others in creating and adapting to change.*

The Metropolitan Plan recognises Tomago as a major trading hub and manufacturing site and identifies it as one of the 11 'catalyst areas' within Greater Newcastle. These areas will underpin new job opportunities for Greater Newcastle with Tomago projected to provide an additional 700 jobs, with a total of 8500 jobs. The Metropolitan Plan recognises that good access to transport services is critical for new employment opportunities to be realised within the catalyst areas and that opportunities exist to better connect trade movements across NSW and nationally via major road networks, including the Pacific Highway, and the national rail network.



The proposal is recognised in the Metropolitan Plan and would support the vision and outcomes for Greater Newcastle by providing improved access and connectivity to key employment precincts such as Tomago, allowing the safe, efficient and reliable movement of people and freight.

### **2.1.3 State Environmental Planning Policy (Infrastructure) 2007**

The State Environmental Planning Policy (Infrastructure) 2007 (the Infrastructure SEPP) facilitates the effective delivery of infrastructure across NSW. Clause 94 of the Infrastructure SEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent. The proposal is therefore permissible without development consent.

### **2.1.4 State Environmental Planning Policy (Coastal Management) 2018**

The CM SEPP defines the coastal zone and establishes state-level planning priorities and development controls to guide decision-making for development within the coastal zone. Planning proposals within the coastal zone need to be consistent with Coastal Management Programs or Coastal Zone Management Plans for that area (DPIE, 2018).

The coastal zone includes land comprised of one or more of the four coastal management areas:

- Coastal wetlands and littoral rainforests area
- Coastal vulnerability area
- Coastal environment area
- Coastal use area.

A small part of the proposal (3.28 hectares) is within land mapped as 'Coastal Wetlands' under the CM SEPP and that part of the proposal is subject to approval under Part 4 of the EP&A Act and will be assessed within an EIS.

The study area for this assessment also includes land (outside of the proposal) within the coastal wetlands and littoral rainforests area, coastal environment area, and coastal use area. Where a site is mapped as more than one coastal management area, the development controls for each of those coastal management areas will apply (DPIE, 2018).

### **2.1.5 Aboriginal Procurement Policy**

The *Aboriginal Procurement Policy* (APP) (Treasury, 2021) applies to the procurement of all goods and services, including construction, by a government agency. The APP aims to support employment opportunities for Aboriginal people, and the sustainable growth of Aboriginal businesses through the NSW Government's procurement of goods, services and construction.

The APP applies to the procurement of all goods and services, including construction, by a government agency. It requires agencies to include minimum spending requirements for Aboriginal participation in contracts valued at \$7.5 million or above by requiring one or more of the following:

- At least 1.5 per cent of the contract value to be subcontracted to Aboriginal businesses
- At least 1.5 per cent of the contract's Australian based workforce that directly contribute to the contract to be Aboriginal employees
- At least 1.5 per cent of the contract value to be applied to the cost of education, training or capability building for Aboriginal staff or businesses directly contributing to the contract (NSW Treasury, 2021).

Transport is committed to actively implementing the NSW Government's APP and would seek to identify and promote Aboriginal participation in the construction phase of the proposal through requirements in the conditions of approval and construction contracts.

## **2.2 Local government policies and plans**

### **2.2.1 Newcastle Local Environmental Plan 2012 and Port Stephens Local Environmental Plan 2013**

Local Environmental Plans (LEPs) guide planning decisions for the LGAs through zoning and development controls. The LEPs provide a framework for the way that land in the LGA can be used and are the main legislative tool to shape the future of communities and ensuring that development is done appropriately. The proposal is covered by the Newcastle Local Environmental Plan 2012 (Newcastle LEP), with the exception of a small section of the construction footprint, which is covered by the Port Stephens Local Environmental Plan 2013 on the eastern side of the Hunter River.

The application of the Infrastructure SEPP means the section of the proposal within the REF area is not subject to the requirements of LEPs, although for completeness, consideration has been given in this assessment to the requirements of the LEPs.

### **2.2.2 Newcastle 2030 Community Strategic Plan**

The *Newcastle 2030 Community Strategic Plan 2018* (City of Newcastle, 2018) is a shared community vision to inform council's policies and actions over the next 10 years. The plan is focused on protecting the environment, providing accessible transport and creating an inclusive community. Seven strategic directions have been identified that are associated with the delivery of Council's services, programs and facilities. These seven strategic directions also align with Sustainable Development Goals developed by the United Nations as Newcastle is a United Nations City.

The proposal would support the strategic direction relating to 'an integrated and accessible transport system in the Newcastle region' by supporting the implementation of the regional transport strategy in the Newcastle area, which includes the upgrade of the Pacific Highway. The proposal would also provide accessible infrastructure improvements for public transport and connections to the existing cycle and pedestrian networks. The proposal would also improve safety and reliability of the transport network.

### **2.2.3 Newcastle Development Control Plan 2012**

The *Newcastle Development Control Plan 2012* (Newcastle DCP) provides detail provisions relating to matters of significance to the City of Newcastle to be considered by Council when implementing its environmental assessment and planning functions under Part 4 of the EP&A Act. It contains planning and design guidelines to support the provisions of the Newcastle LEP and detailed criteria for the assessment of development applications. The Newcastle DCP applies to all development requiring consent of Council under the Newcastle LEP or SEPP (Three Ports) 2013. Under the EP&A Act, Council is required to take into consideration the relevant provisions of any applicable DCP when determining an application for development.

### 3. Methodology for the assessment

#### 3.1 Methodology

This assessment has been developed to assess the land use, property and socio-economic impacts in accordance with the *Environmental Impact Assessment Practice Note – Socio-economic Assessment* (the Practice Note) (Transport for NSW, 2020) and to address the land use and development matters outlined in the SEARs, outlined in **Table 1.1**. The assessment is based on a ‘moderate’ level of assessment described in the Practice Note. Key steps in the assessment process included:

- Initial review of the proposal, outcomes of consultation carried out by Transport, and information relating to the study area to scope potential land use, property and socio-economic issues and identifying communities potentially affected by the proposal’s construction and operation
- Review of relevant NSW Government and Council plans, policies and strategies relevant to the proposal and land use, property and the socio-economic environment of the study area
- Description of existing land use, property and socio-economic characteristics, conditions, and values in the study area, based on the review and analysis of existing population, land use, social infrastructure, business and features, to provide a baseline from which potential impacts and benefits of the proposal can be assessed
- Identifying, assessing, and evaluating potential impacts and benefits to land use, property and socio-economic values from the proposal’s construction and operation, including consideration of direct, indirect and cumulative impacts
- Identifying measures to avoid, manage or mitigate negative impacts and support potential benefits where practicable, including consideration of measures identified in other working papers such as traffic and transport, noise and vibration, and air quality.

An evaluation matrix was used to assess the significance of negative land use, property and socio-economic impacts identified for the proposal. This is shown in **Table 3.1** and was based on the evaluation framework developed by Transport for the *Environmental Impact Assessment Practice Note – Socio-economic Assessment* (Transport for NSW, 2020). The significance of identified impacts was determined with consideration of:

- Sensitivity of receptors
- Magnitude of the proposed works.

Criteria for determining the sensitivity of receptors and magnitude of proposed works is outlined in **Table 3.2**.

Table 3.1 Evaluation matrix

		Magnitude			
		High	Moderate	Low	Negligible
Sensitivity	High	High	High-moderate	Moderate	Negligible
	Moderate	High-moderate	Moderate	Moderate-low	Negligible
	Low	Moderate	Moderate-low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Source: Transport for NSW, 2020

Table 3.2 Evaluation criteria

Level	Description
<b>Level of sensitivity</b>	
Negligible	No vulnerability and able to absorb or adapt to change.
Low	Minimal areas of vulnerabilities and a high ability to absorb or adapt to change.
Moderate	A number of vulnerabilities but retains some ability to absorb or adapt to change.
High	Multiple vulnerabilities and/or very little capacity to absorb or adapt to change.
<b>Level of magnitude</b>	
Negligible	No discernible positive or negative changes caused by the impact. Change from the baseline remains within the range commonly experienced by receptors.
Low	A discernible change from baseline conditions. Tendency is that the impact is to a small proportion of receptors over a limited geographical area and mainly in the vicinity of the project. The impact may be short term, or some impacts may extend over the life of the project.
Moderate	A clearly noticeable difference from baseline conditions. Tendency is that the impact is to a small to large proportion of receptors and may be over an area beyond the vicinity of the project. Duration may be short-term to medium or some impacts may extend over the life of the project.
High	A change that dominates over existing baseline conditions. The change is widespread or persists over many years or is effectively permanent.

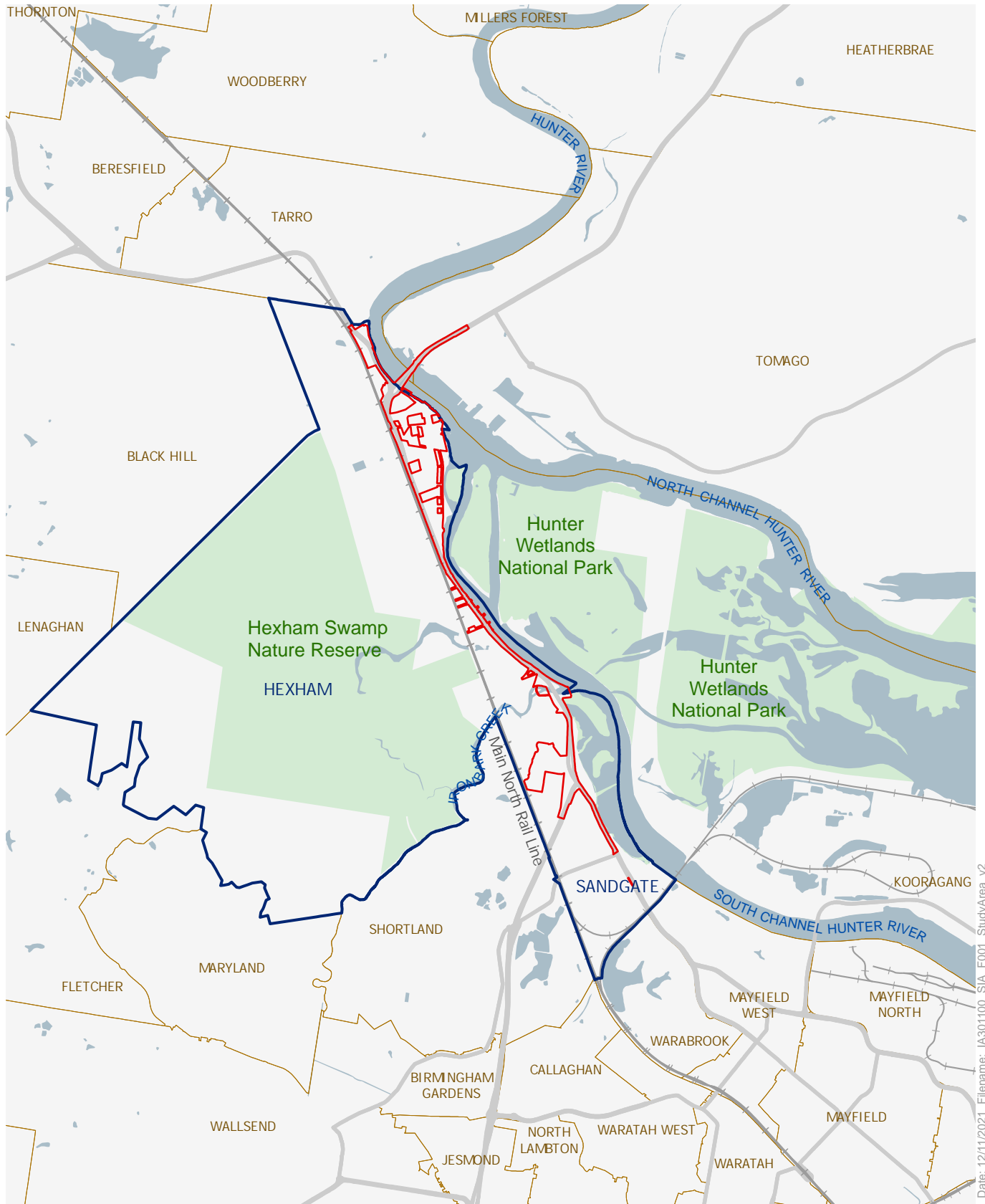
Source: Transport for NSW, 2020

### 3.2 Study area

The study area for this assessment is shown in **Figure 3.1** and is the same for both the REF area and EIS area. The study area extends beyond the REF area and EIS area, and has been based on those localities that may experience direct changes to land use, property and socio-economic conditions due to the location of the proposal, construction activities and changes in movement patterns for residents, workers and visitors. It includes the Australian Bureau of Statistics (ABS) defined State suburbs of Hexham (SSC11898) and Sandgate (SSC13474).

The proposal's benefits and impacts may also be experienced by communities in the wider area, such as surrounding LGAs and the Hunter Region. As such, this assessment also considers at a broader level, regional impacts on communities and businesses in the City of Newcastle LGA and wider Hunter Region.

It is noted that the construction footprint for the proposal extends across Hexham Bridge to Tomago within the Port Stephens Council LGA. The extent of works in this suburb are relatively minor and mainly include new road signage. While the suburb of Tomago does not form part of the study area for this assessment, this assessment considers potential benefits and impacts for communities and businesses in the wider Hunter Region, which includes the Port Stephens Council LGA.



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**Legend**

- Construction area
- Study area
- Suburb
- National Park
- Waterway
- Railway
- Road



Scale 1:60,000 at A4  
GDA94 MGA56

**Data sources:**  
Jacobs 2020  
Department of Finance,  
Services and Innovation 2020

**Figure 3.1** Study area  
Hexham Straight Widening

### 3.3 Data sources

Population and demographic data presented in this assessment is mainly from the 2016 ABS Census, which was conducted on 9 August 2016. The next Census of Australia's population is due to be conducted on 10 August 2021, with data released from June 2022. While this data is nearly five years old, this is the most comprehensive information currently available for Australia's population and demography.

This assessment considers more recent data population and demographic data where this available (for example, estimated resident population and population projections). However, it is noted that this information is generally presented for geographic areas larger than the suburb level that has been used to define the study area for this assessment.

In addition to information from the 2016 Census, this assessment is informed by information and data from:

- NSW Government and Australian Government agencies such as the ABS and NSW Department of Planning, Industry and Environment (DPIE)
- Publications, reports, guidelines, and websites relevant to land use, property and socio-economic environment within the City of Newcastle LGA and Hunter Region
- Aerial mapping and internet searches on businesses and social infrastructure in the study area
- Community and stakeholder consultation carried out for the proposal, including targeted engagement with local businesses for this assessment, feedback from community members and stakeholders on the initial design, and engagement undertaken by Transport with key stakeholders.

### 3.4 Consultation for this assessment

Engagement with owners and managers of businesses in the study area that have potential to experience changes from the proposal's construction and operation was carried out for this assessment. The purpose of the engagement was to gather information on:

- Existing business operations, including days and hours of operation, customer catchments and travel behaviour of staff, customers and deliveries
- Perceptions of business owners and managers about proposed impacts and benefits of the proposal's construction and operation on their businesses, including impacts of access changes, possible changes in trade, impacts of construction
- Input on measures that should be considered to manage potential impacts or maximise benefits.

A preliminary desk-top review was carried out of existing businesses in the study area to identify those businesses likely to experience changes due to the operation of the proposal. Seven businesses were identified that may potentially be affected by access changes, of which six businesses were consulted for this assessment. The remaining business is a service station at Hexham that provides refuelling facilities for trucks. The desktop review indicated that the service station is operated remotely and potential access impacts were considered minor. This consultation was carried out over the telephone due to COVID-19 restrictions.

In addition to targeted engagement with business owners, this assessment has also been informed by engagement carried out for the proposal by Transport, including community and stakeholder feedback on the initial design.

## 4. Existing environment

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

### 4.1 Regional context

The City of Newcastle LGA is bounded by the City of Lake Macquarie LGA to the south, Cessnock LGA to the west, Maitland LGA to the north and Port Stephens Council LGA on the eastern side of the Hunter River. Combined, the LGAs form the Greater Newcastle area, which is the main economic, administrative and cultural centre of the Hunter Region. The City of Newcastle LGA is mainly an urban area comprising residential and industrial uses, although rural land uses are in the north-west of the LGA. The Port of Newcastle is the largest port on Australia's east coast and Australia's third largest port by volume (<https://www.portofnewcastle.com.au/>).

In 2019, the LGA had an estimated resident population of about 165,571 people, with this projected to increase to 199,680 people by 2041 (ABS, 2020; DPIE, 2019). This represents a growth rate of less than one per cent from 2016 and is below the projected rate of population growth for NSW. The City of Newcastle supports about 102,800 jobs and has an annual economic output for \$35.7 billion, of which manufacturing generates the largest output. While the industrial sector continues to be an important part of the City's economy, the service sector is a substantial and growing segment of the economy (Remplan, 2020).

Major features in the City of Newcastle LGA include the Newcastle central business district, the Port of Newcastle, major community facilities such as The University of Newcastle and John Hunter Hospital, Newcastle Art Gallery and Newcastle Museum, and natural areas such as the Hunter River (profile.id, 2020). The Hunter Wetlands National Park is in the northern part of the LGA and includes Kooragang Nature Reserve which is located on the eastern side of the Hunter River and which forms part of the internationally recognised Hunter Estuary Wetlands Ramsar site. A second wetland area forms part of the Hunter Estuary Wetlands Ramsar site and is comprised of Shortland Wetlands (including Hunter Wetlands Centre Australia) which is located about 800 metres to the west of the proposal

The City of Newcastle LGA is serviced by several major roads including the M1 Pacific Motorway, the A1 Pacific Highway, the A43 New England Highway and A43 Pacific Highway. The M1 Pacific Motorway is a key north-south corridor linking Sydney to the Central Coast, Newcastle and the Hunter Region. The A1 Pacific Highway links to the M1 Motorway at Black Hill and provides access to the Hunter Region north to Queensland along the NSW coast. The A43 New England Highway provides access from the City of Newcastle LGA to the Hunter Region and north to Queensland via an inland route through NSW that starts/ends at the Maitland Road and A1 Pacific Highway intersection in Hexham. The A43 Pacific Highway includes sections of the older Pacific Highway route that connects to Newcastle compared to the newer A1 Pacific Highway which bypasses the City of Newcastle.

### 4.2 Property

Property within the study area comprises privately owned property, land owned by the City of Newcastle, State-owned land and Crown Land. Land tenure in the study area is shown in **Figure 4.1** and mainly comprises freehold land. Other land tenure in the study area includes:

- Crown land, comprising the Sandgate Cemetery, vacant land to the north of the cemetery, and land along the banks of the South Channel of the Hunter River including a small lot to the south of Ironbark Creek, a lot that is about one kilometre in length to the north of Hexham Bowling Club on Old Maitland Road, Hexham and four smaller lots to the south and north of Hexham Bridge
- Land owned by the City of Newcastle, comprising Hexham Park and local roads

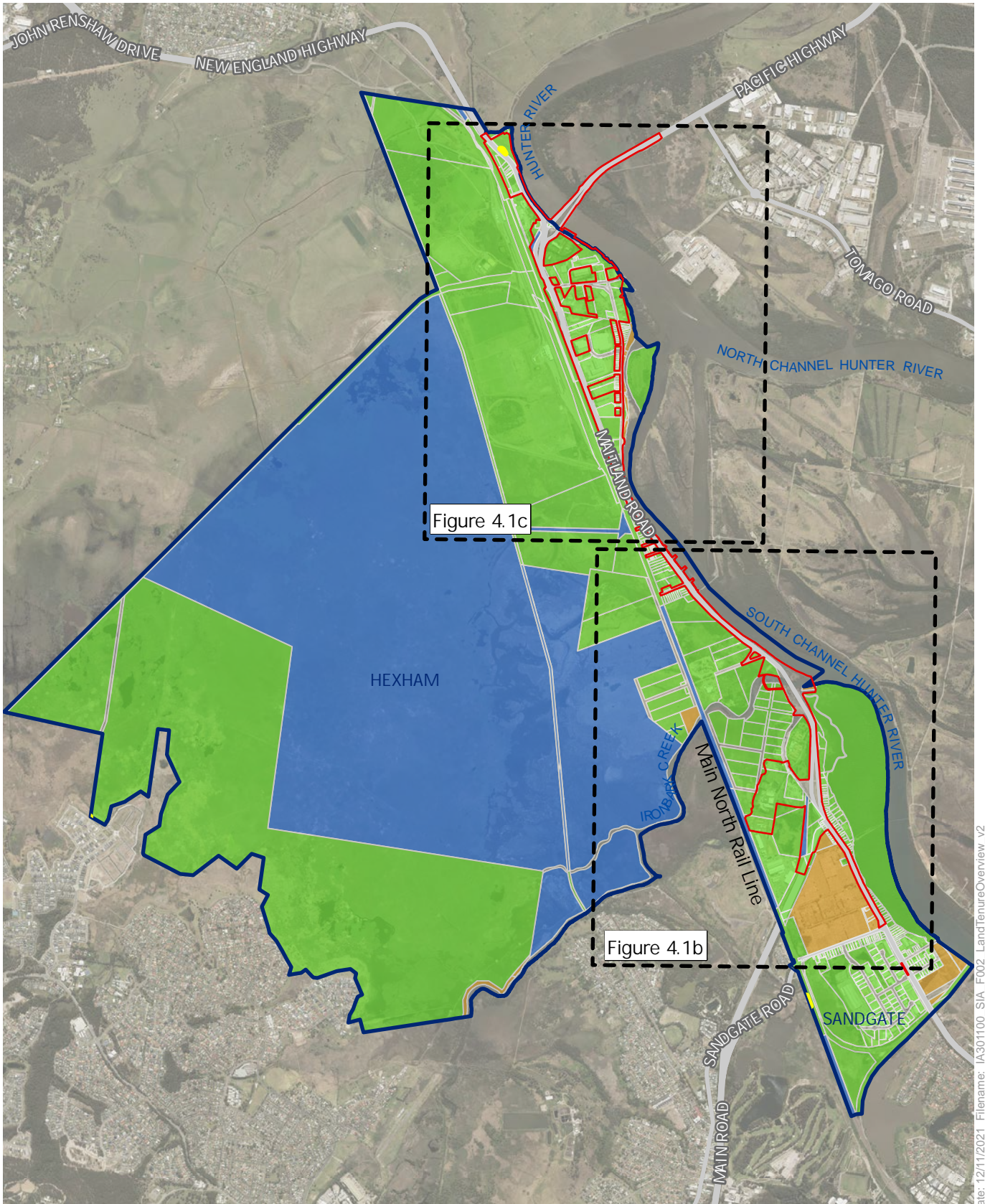
- Land owned by Transport including the Main North Rail Line, and Newcastle Inner City Bypass and Maitland Road corridors.

Commonwealth land within the study area includes the Australia Post distribution centre at Sandgate. This property would not be affected by the proposal.

Property tenure in the EIS area is as follows:

- EIS Area 1 is comprised of a parcel of Crown land (Lot 7314 DP 1160521) and areas of road reserve owned by Transport
- EIS Area 2 and EIS Area 3 are comprised of areas of waterway that are identified as Crown land and areas of road reserve owned by Transport.

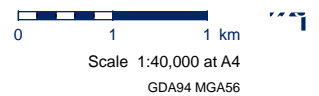




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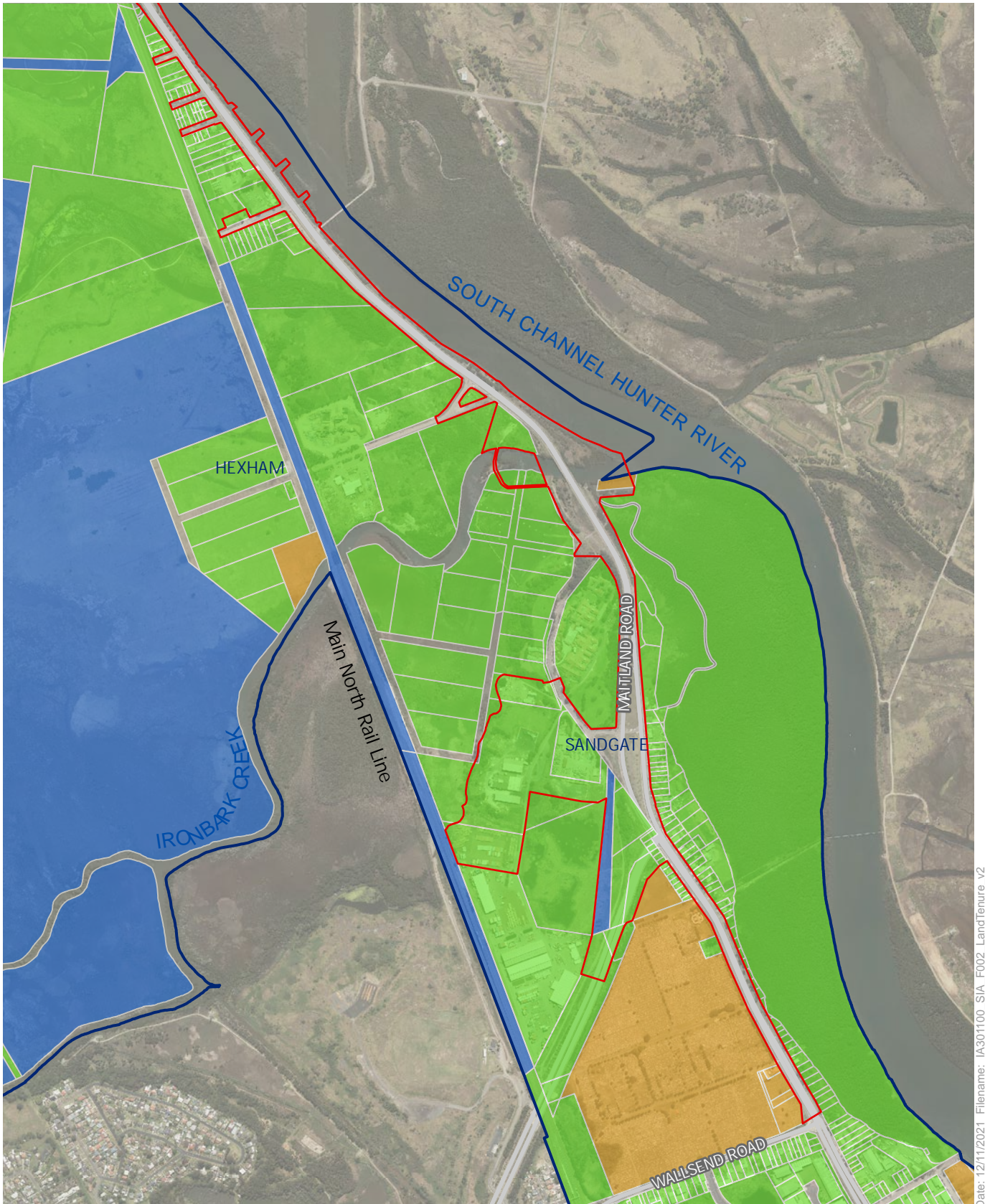
**Legend**

- |   |   |
|---|---|
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|   | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFD700; border: 1px solid black; margin-right: 5px;"></span> Crown                      |
|   | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFFF00; border: 1px solid black; margin-right: 5px;"></span> Local Government Authority |
|   | <span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> NSW Government             |

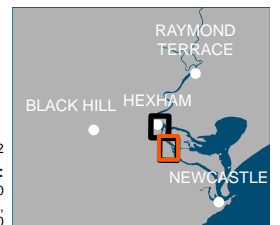
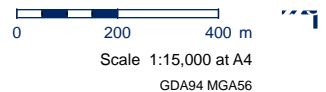
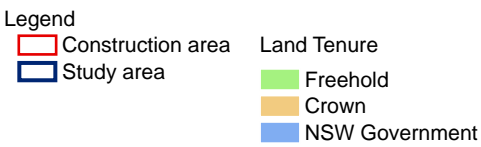


**Data sources:**  
 Jacobs 2020  
 Department of Finance,  
 Services and Innovation 2020

**Figure 4.1a** Land tenure  
 Hexham Straight Widening



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Page 1 of 2  
**Data sources:**  
 Jacobs 2020  
 Department of Finance,  
 Services and Innovation 2020

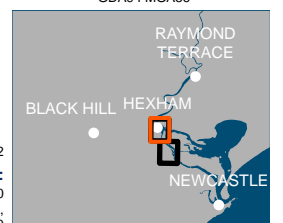
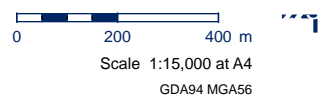
**Figure 4.1b** Land tenure  
 Hexham Straight Widening



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**Legend**

- |  |   |
|--|---|
| <span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span> Construction area | <b>Land Tenure</b>  |
| <span style="border: 1px solid blue; display: inline-block; width: 15px; height: 10px;"></span> Study area       | <span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90;"></span> Freehold                   |
|  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFD700;"></span> Crown                      |
|  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFFF00;"></span> Local Government Authority |
|  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6;"></span> NSW Government             |



Page 2 of 2  
**Data sources:**  
 Jacobs 2020  
 Department of Finance,  
 Services and Innovation 2020

**Figure 4.1c** Land tenure  
 Hexham Straight Widening

### 4.3 Land use

#### 4.3.1 Land use zoning

Planning decisions within the City of Newcastle are guided by land use zoning defined within the Newcastle LEP. Land use zoning in the study area is shown in **Figure 4.2**. The REF area is located within the following land use zones:

- E2 – Environmental conservation
- E3 – Environmental management
- IN3 – Heavy Industrial
- RE1 – Public recreation
- RE2 – Private recreation
- SP2 – Infrastructure
- W2 – Recreational waterways

The majority of the REF area is within the land use zone SP2 – Infrastructure. The purpose of SP2 zoning is to provide for infrastructure and related uses, and to prevent development that is not compatible with or that may detract from the provision of infrastructure.

The EIS area of the proposal is located within the following land use zones:

- EIS Area 1 is located within SP2 – Infrastructure (SP2) and E2 – Environmental conservation (E2)
- EIS Area 2 is located within SP2 – Infrastructure (SP2) and E2 – Environmental conservation (E2) and W2 – Recreational waterway
- EIS Area 3 is located within E2 – Environmental conservation (E2) and W2 – Recreational waterway.

The construction compounds are located within the REF area and these four compound areas are located within the following land use zones:

- E2 – Environmental conservation
- E3 – Environmental management
- IN3 – Heavy Industrial
- SP2 – Infrastructure.

A description of the land use zones that the REF area and the EIS area of the proposal are located within and consistency of the proposal with the LEP objectives is included in **Table 4.1**.

Table 4.1 Land use zones

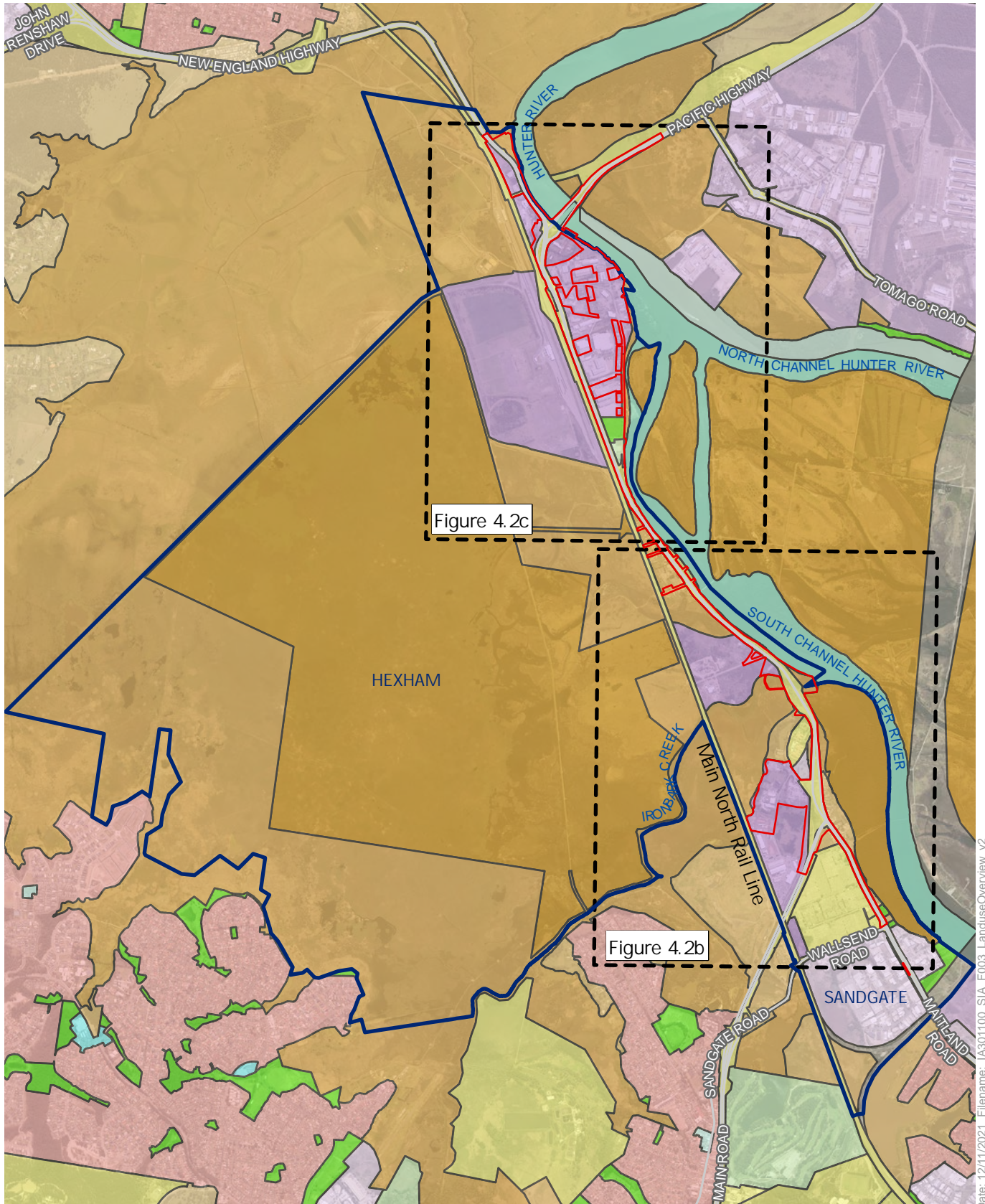
Zone	Objectives of zone	Consistency of proposal with objectives
E2	<p>To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.</p> <p>To prevent development that could destroy, damage or otherwise have an adverse effect on those values.</p> <p>To provide for the management of the majority of the Hunter River floodplain by restricting the type and intensity of development to that compatible with the anticipated risk to life and property.</p>	<p>The proposal has been designed to minimise its impact on areas with high ecological, scientific, cultural or aesthetic values.</p>

Zone	Objectives of zone	Consistency of proposal with objectives
	To provide for the conservation, enhancement and protection of the Hexham Wetlands.	
E3	<p>To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.</p> <p>To provide for a limited range of development that does not have an adverse effect on those values.</p> <p>To provide for the conservation of the rural and bushland character of the land that forms the scenic edge of and the gateway to urban Newcastle.</p>	The proposal has been designed to minimise its impact on environmental values of the area.
IN3	<p>To provide suitable areas for those industries that need to be separated from other land uses.</p> <p>To encourage employment opportunities.</p> <p>To minimise any adverse effect of heavy industry on other land uses.</p> <p>To support and protect industrial land for industrial uses.</p>	The proposal has been designed to minimise its impact on industrial land of the area.
RE1	<p>To enable land to be used for public open space or recreational purposes.</p> <p>To provide a range of recreational settings and activities and compatible land uses.</p> <p>To protect and enhance the natural environment for recreational purposes.</p>	The proposal would have a minor impact on access to public space. There would be temporary construction impacts. The proposal may strengthen and improve links between existing open spaces.
RE2	<p>To enable land to be used for private open space or recreational purposes.</p> <p>To provide a range of recreational settings and activities and compatible land uses.</p> <p>To protect and enhance the natural environment for recreational purposes.</p>	The proposal would have a minor impact on access to public space. There would be temporary construction impacts. The proposal may strengthen and improve links between existing open spaces.
SP2	<p>To provide for infrastructure and related uses.</p> <p>To prevent development that is not compatible with or that may detract from the provision of infrastructure.</p>	The proposal would be consistent with the objectives of this zone as it is road infrastructure.
W2	<p>To protect the ecological, scenic and recreation values of recreational waterways.</p> <p>To allow for water-based recreation and related uses.</p> <p>To provide for sustainable fishing industries and recreational fishing.</p>	The proposal would be designed and constructed to meet the objectives, where possible. Overall, the proposal is unlikely to have significant impacts on ecological, recreational and fishing values.

Other land use zones surrounding the proposal comprise:

- Environmental protection zones, including land zoned:
  - National parks and nature reserves (E1) within the Hunter Wetlands National Park and including areas also identified as Hexham Swamp Nature Reserve
  - Environmental conservation (E2) at Sandgate and Hexham, comprising land within and surrounding Ironbark Creek at Sandgate, parts of the Hunter River floodplain, and residential and commercial areas between Maitland Road and the Main North Rail Line
  - Environmental management (E3) at Sandgate, comprising existing residential, commercial and sport and recreation uses
- Industry zones, including land zoned
  - Light industrial (IN2) at Sandgate, comprising open landscaped area next to Calvary St Joseph's Retirement Community
  - Heavy industrial (IN3), within industrial estates at Sandgate and Hexham.
- Recreation uses, including land zoned:
  - Public recreation (RE1), comprising Hexham Park at Hexham
  - Private recreation (RE2), comprising the Hexham Bowling Club at Hexham.

The Hunter River upstream of the Hexham Bridge is zoned as a recreational waterway (W2). Downstream of the Hexham Bridge, the South Channel of the Hunter River is zoned recreational waterway (W2), with the North Channel of the Hunter River zoned as both natural waterway (W1) and recreational waterway (W2).



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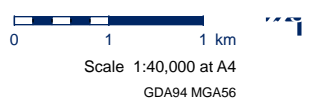
**Legend**

- Construction area
- Study area

Land zoning (EPI DPE, 2019)

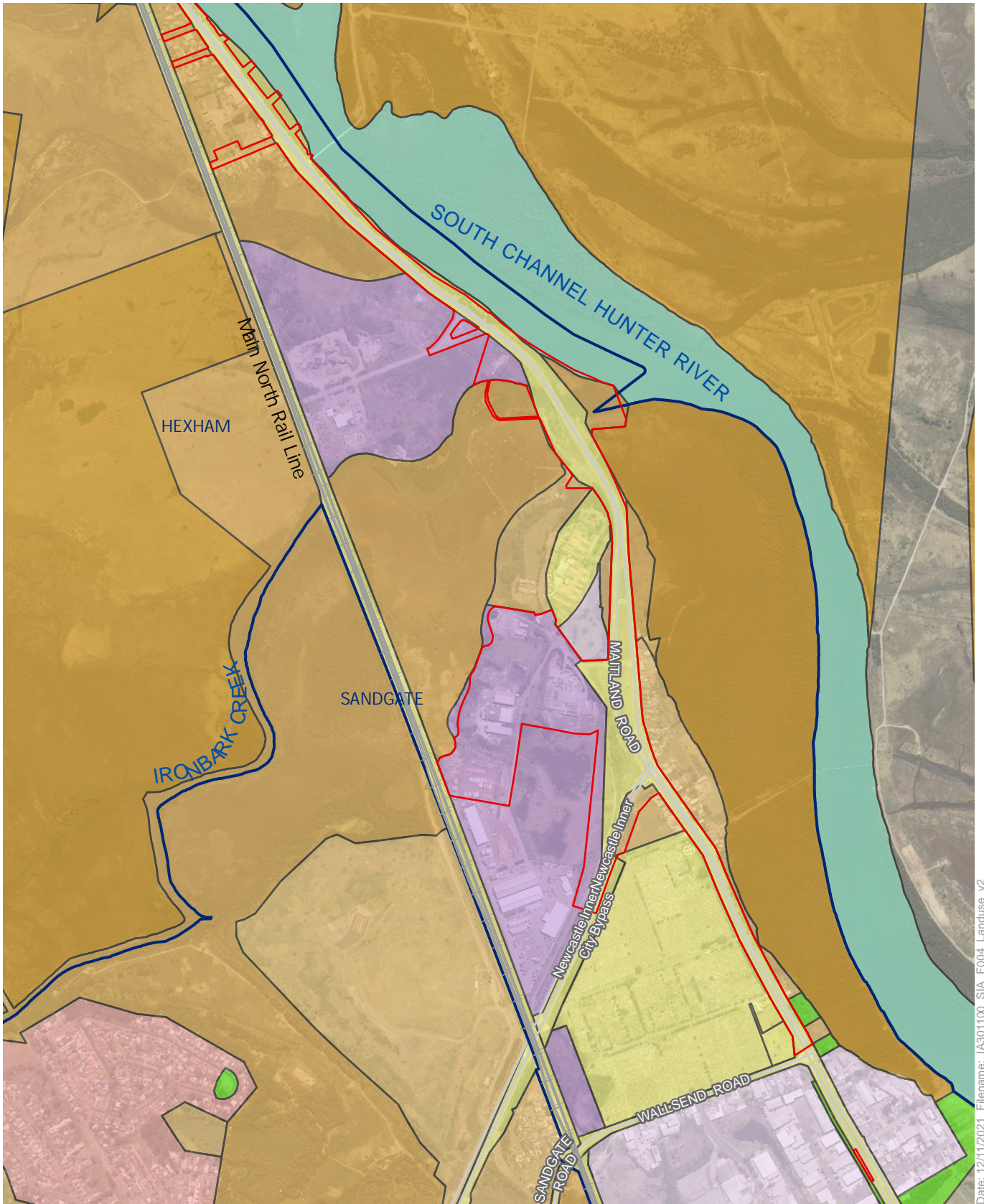
- B1 Neighbourhood Centre
- B2 Local Centre
- E1 National Parks and Nature Reserves
- E2 Environmental Conservation
- E3 Environmental Management
- E4 Environmental Living
- IN1 General Industrial
- IN2 Light Industrial

- IN3 Heavy Industrial
- R2 Low Density Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU2 Rural Landscape
- SP2 Infrastructure
- W1 Natural Waterways
- W2 Recreational Waterways



**Figure 4.2a** Land use zoning  
Hexham Straight Widening

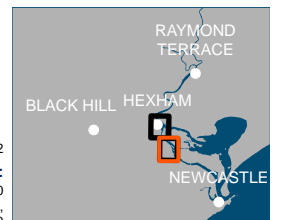
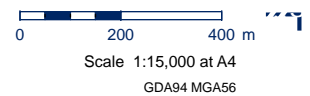
**Data sources:**  
Jacobs 2020  
Department of Finance,  
Services and Innovation 2020



Date: 12/11/2021 Filename: IA301100\_SIA\_F004\_Landuse\_v2

**Legend**

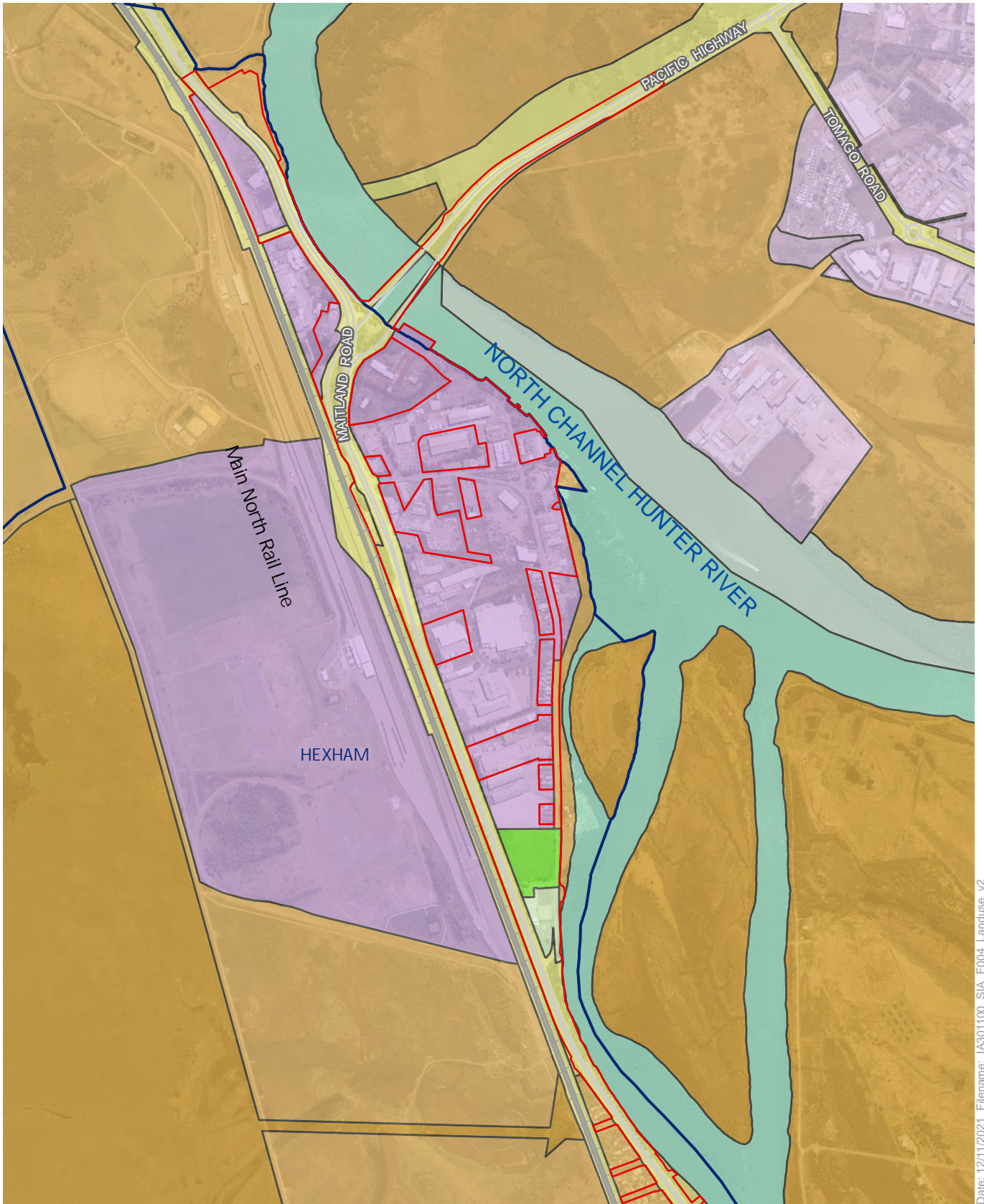
- |                   |                                       |
|-------------------|---------------------------------------|
| Construction area | <b>Land zoning (EPI DPE, 2019)</b>    |
| Study area        | E1 National Parks and Nature Reserves |
| Railway           | E2 Environmental Conservation         |
| Road              | E3 Environmental Management           |
|                   | IN2 Light Industrial                  |
|                   | IN3 Heavy Industrial                  |
|                   | R2 Low Density Residential            |
|                   | RE1 Public Recreation                 |
|                   | SP2 Infrastructure                    |
|                   | W2 Recreational Waterways             |



Page 1 of 2  
**Data sources:**  
 Jacobs 2020  
 Department of Finance,  
 Services and Innovation 2020

**Figure 4.2b** Land use zoning  
 Hexham Straight Widening

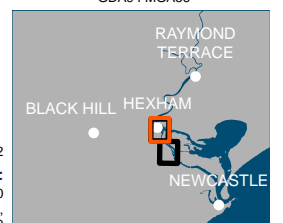
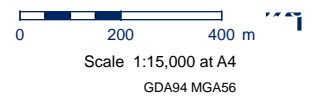




Date: 12/11/2021 Filename: IA301100\_SIA\_F004\_Landuse\_v2

**Legend**

- |                   |                                       |
|-------------------|---------------------------------------|
| Construction area | <b>Land zoning (EPI DPE, 2019)</b>    |
| Study area        | E1 National Parks and Nature Reserves |
| Railway           | E2 Environmental Conservation         |
| Road              | IN1 General Industrial                |
|                   | IN3 Heavy Industrial                  |
|                   | RE1 Public Recreation                 |
|                   | RE2 Private Recreation                |
|                   | SP2 Infrastructure                    |
|                   | W1 Natural Waterways                  |
|                   | W2 Recreational Waterways             |



Page 2 of 2  
**Data sources:**  
 Jacobs 2020  
 Department of Finance,  
 Services and Innovation 2020

**Figure 4.2c** Land use zoning  
 Hexham Straight Widening

### 4.3.2 Existing land use

Land uses in the study area comprise mainly industrial and environmental uses, with a small number of residential uses, community facilities and commercial uses. Land uses in the study area are shown in **Figure 4.3**.

Industrial uses in the study area comprise a mix of general industry, heavy industry and major manufacturing uses within discrete locations at Hexham and Sandgate. The main industrial land uses within the study area include:

- Major industrial and manufacturing uses within the industrial area at Hexham
- Brancourts Dairy processing facility at Maitland Road, north of the Hexham Bridge on-ramp
- Major metals recycling at Sparke Street
- Industrial, manufacturing and transport uses north of the Newcastle Inner City Bypass at Sandgate, between Maitland Road and the Main North Rail Line
- Mixed general industrial uses including food processing, storage, vehicle servicing and warehousing uses within the industrial area at Sandgate.

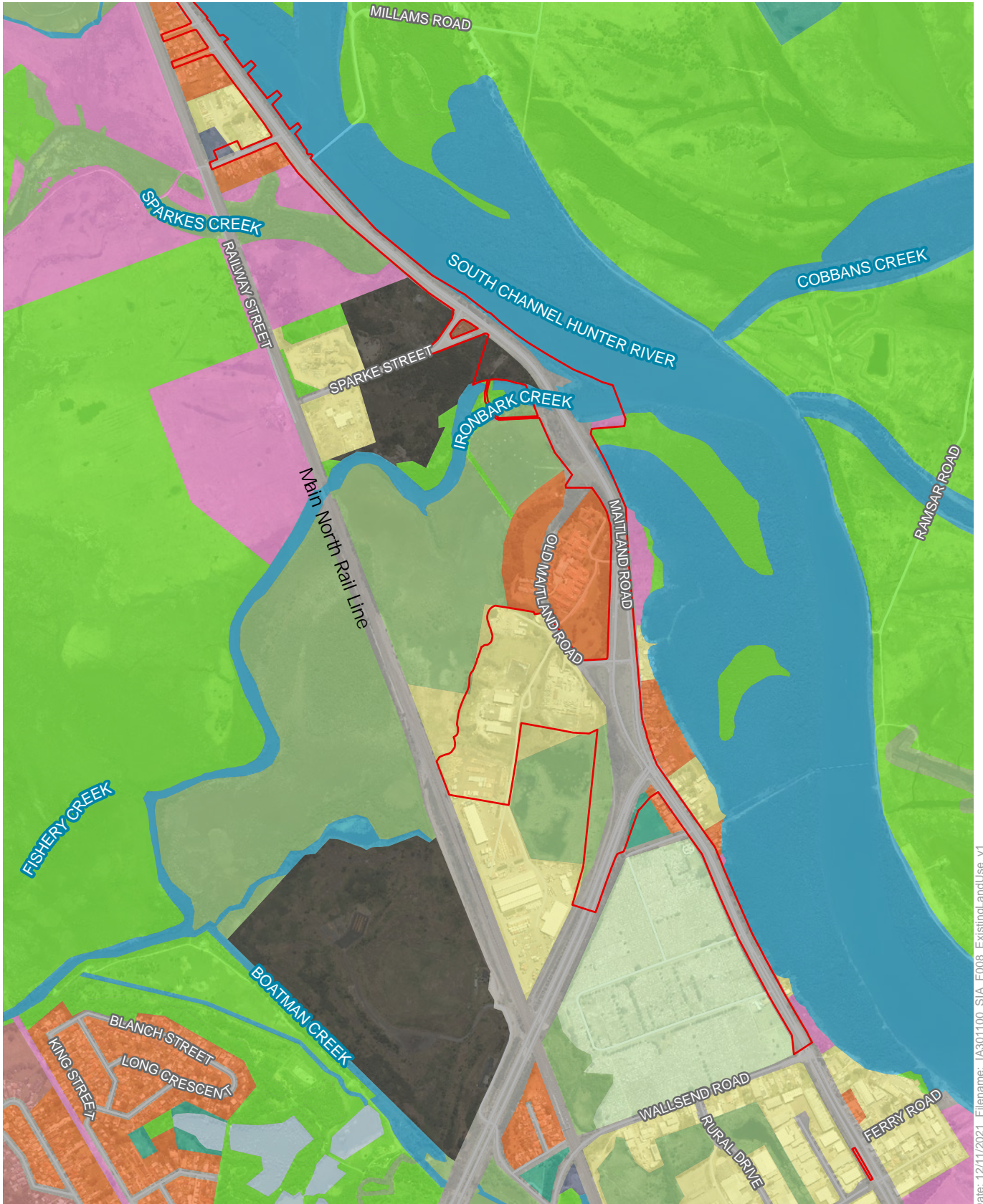
In addition to industrial uses, some commercial properties are scattered throughout the study area, including service stations at Hexham and Sandgate, restaurants and takeaway food outlets at Hexham, and small scale commercial uses at Maitland Road, Sandgate.

Parts of the study area are within the Hunter Wetlands National Park, including Hexham Swamp Nature Reserve to the west of the proposal, Hexham Island, Ash Island to the east of the proposal, and parts of the Hunter River floodplain at Hexham. Other important environmental features within the study area include the Hunter River, Hunter River South Channel, and Ironbark Creek, which is the largest tidal creek in the Hunter River catchment. Drainage of the Hexham Swamp Nature Reserve mainly occurs through Ironbark Creek, which discharges to the Hunter River. Further details about environmental and surface water features in the study area is in the *Hexham Straight Widening Biodiversity Assessment Report* (Jacobs, 2021b), *Hexham Straight Widening Biodiversity Development Assessment Report* (Jacobs, 2021c) and *Hexham Straight Widening Flooding and Hydrology Assessment* (Jacobs, 2021d).

Residential uses in the study area are limited and mainly located:

- Along Maitland Road at Sandgate next to the proposal, including on the western side between Sandgate Cemetery and the Newcastle Inner City Bypass, and on the eastern side of Maitland Road opposite Sandgate Cemetery and extending to the southbound Maitland Road access to Old Maitland Road and the Calvary St Joseph's Retirement Community
- Along Old Maitland Road, within the Calvary St Joseph's Retirement Community at Sandgate, with the closest residential unit about 165 metres from the proposal at Maitland Road and about 50 metres from the construction area
- Within an area between Maitland Road and the Main North Rail Line at Hexham and include Clarke Street, Merchant Street, Fenwick Street and Shamrock Street, next to the proposal at Maitland Road
- On the western side of Old Maitland Road, north of the Hexham Bowling Club, with the closest residential property being about 145 metres from the proposal at Maitland Road and adjoining the construction area.

Community uses in the study area are generally limited and include sport and recreation uses such as Hexham Oval and Hexham Bowling Club, Calvary St Joseph's Retirement Community, and Sandgate Cemetery. Further information on community uses is provided in **Section 4.8**.

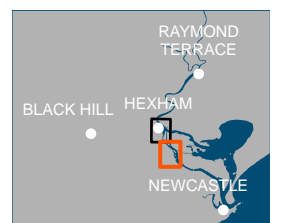


Date: 12/11/2021 Filename: IA301100\_SIA\_F008\_ExistingLandUse\_v1

**Legend**

- |   |                                |                                       |
|---|--------------------------------|---------------------------------------|
| Construction area                       | Industrial/commercial services | Transport and communication           |
| Existing land use (based on DPIE, 2020) | Urban residential              | Landfill                              |
| Conservation and natural environment    | Rural residential              | Lake, reservoir/dam, channel/aqueduct |
| Grazing                                 | Public services                | River                                 |
| Land in transition                      | Recreation and culture         | Marsh/wetland                         |
|   | Utilities                      |                                       |

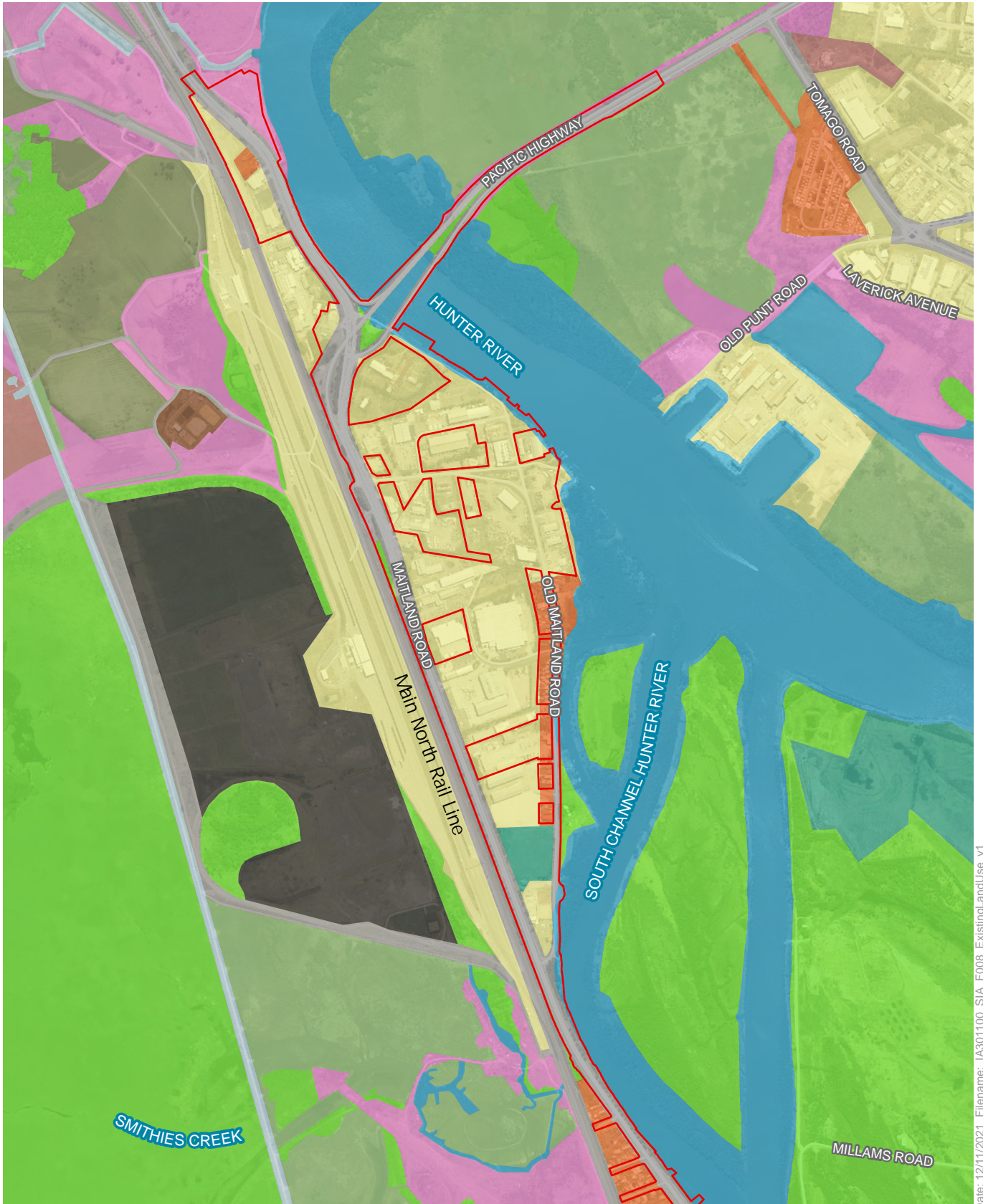
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Page 1 of 2  
Data sources:  
Jacobs 2020  
Department Finance,  
Services and Innovation 2020

**Figure 4.3a** Existing land use

Hexham Straight Widening



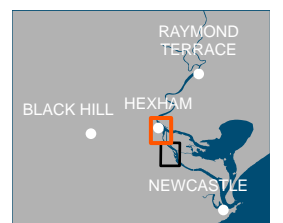
Date: 12/11/2021 Filename: IA301100\_SIA\_F008\_ExistingLandUse\_v1

**Legend**

- |   |                                |                                       |
|---|--------------------------------|---------------------------------------|
| Construction area                       | Industrial/commercial services | Transport and communication           |
| Existing land use (based on DPIE, 2020) | Urban residential              | Landfill                              |
| Conservation and natural environment    | Rural residential              | Lake, reservoir/dam, channel/aqueduct |
| Grazing                                 | Recreation and culture         | River                                 |
| Irrigated cropping                      | Utilities                      | Marsh/wetland                         |



Page 2 of 2  
**Data sources:**  
 Jacobs 2020  
 Department Finance,  
 Services and Innovation 2020



**Figure 4.3b** Existing land use  
 Hexham Straight Widening

Existing land use in the EIS area is described as follows:

- EIS Area 1 is located on the southern bank of Ironbark Creek and contains an access road accessing the southeast side of Ironbark Creek Bridge in the small section of road reserve that extends to the east of the existing road. The larger area of land to the east is zoned as environmental conservation (E2) and comprises land that has been cleared in the past. This area is used infrequently for recreational fishing
- EIS Area 2 is located on the northern bank of Ironbark Creek and the western bank of the South Channel Hunter River. This area has previously been used for old road alignments and contains a large area of remnant vegetation including saltmarsh and mangrove. This area is used infrequently for recreational fishing
- EIS Area 3 is located on the western bank of the South Channel Hunter River. This area contains remnant vegetation, primarily mangrove. This area is used infrequently for recreational fishing.

## 4.4 Community profile

This section describes the key population, demographic and housing characteristics of the study area. Data is provided for the study area (which comprises the suburbs of Hexham and Sandgate, as described in **Section 3.2**) along with data for the City of Newcastle LGA and NSW as a comparison. The information presented is based on data from the ABS 2016 Census of Population and Housing, supplemented with data and information from the ABS and DPIE. Further demographic information is also provided in **Attachment A**.

### 4.4.1 Population, growth and mobility

At the 2016 Census, there were 435 people in the study area of which 305 people lived in Sandgate and 130 people lived in Hexham (ABS, 2016).

More recent information on the residential population of the study area is available at a wider Statistical Area Level 2 (SA2) geography, which include the study area and surrounding suburbs (refer to **Table 4.2**). The SA2s covering the study area include the Shortland-Jesmond SA2, which incorporates the suburb of Sandgate, and the Beresfield-Hexham SA2, which includes the suburb of Hexham. About 21,668 residents lived in communities within and surrounding the study area in 2019. About 13,198 people lived in the Shortland-Jesmond SA2, which incorporates the suburb of Sandgate, and 8,490 people lived in Beresfield-Hexham SA2, which includes the suburb of Hexham. Over the 10-years to 2019, the population of the Shortland-Jesmond SA2 grew at an average of 2.7 per cent annually, nearly double the rate of growth in NSW, with this increasing to an average of 3.1 per cent annually between 2014 and 2019. Over the same period, the Beresfield-Hexham SA2 reported a decrease in residential population at an average of -0.2 per cent annually (Based on ABS, 2020).

Table 4.2 Estimate resident population, 2009-2019

Locality	As of 30 June			Average annual change	
	2009	2014	2019	2009-2019	2014-2019
Beresfield-Hexham	8,633	8,596	8,490	-0.2%	-0.2%
Shortland-Jesmond	10,121	11,353	13,198	2.7%	3.1%
City of Newcastle	151,895	158,683	165,571	0.9%	0.9%
NSW	7,053,755	7,508,353	8,089,817	1.4%	1.5%

Source: Based on ABS 2020

The study area generally had higher levels of population mobility compared to NSW, with lower proportions of people living at the same address both one year and five years prior to the 2016 Census (refer to **Table 4.3**). However, the higher levels of population mobility was mainly due to the low levels of people in Sandgate that lived at the same address as previously, with proportions of people living in Hexham who lived at the same address as previously well above the City of Newcastle LGA and NSW.

Table 4.3 Population mobility, 2016

Locality	Same address one-year prior 2016 Census	Same address five-years prior to 2016 Census
Study area	50.9%	39.4%
City of Newcastle	76.1%	52.3%
NSW	77.4%	53.8%

Source: Based on the ABS 2016 Census of Population and Housing, G41 and G42

#### 4.4.2 Age profile

At the 2016 Census, the study area had an older population compared to NSW, with a higher median age, lower proportion of children aged 14 years or younger, and higher proportion of older people aged 65 years or older. Overall, the proportion of people aged 65 years or over in the study area was 44.8 per cent, compared to 16.3 per cent in NSW (Based on ABS, 2016). However, this was mainly due to the very high proportions of older people in Sandgate (at 52.1 per cent), which is likely to reflect the presence of the Calvary St Joseph's Retirement Community (refer to **Table 4.10**).

#### 4.4.3 Cultural diversity

The study area had a high proportion of Aboriginal and/or Torres Strait Islander people compared to NSW. At the 2016 Census, about 7.8 per cent of the population recorded that they were Aboriginal and/or Torres Strait, compared to about 2.9 per cent in NSW (refer to **Table 4.4**).

At the same time, the study area generally had lower levels of diversity in relation to overseas born and non-English speaking people. At the 2016 Census, overseas born people comprised about 5.5 per cent of the population in the study area and about 5.1 per cent of the population indicated they spoke a language at home other than English. These were both well below the proportions of these groups in both the City of Newcastle and NSW. Residents in the study area generally displayed high levels English proficiency, with 0.9 per cent of the population not speaking English well or at all. This is compared to 1.6 per cent in the City of Newcastle as a whole and 4.5 per cent in NSW.

Table 4.4 Cultural diversity, 2016

Locality	Aboriginal and/or Torres Strait Islander	Overseas born people	Non-English speaking people	Does not speak English well or at all
Study area	7.8%	5.5%	5.1%	0.9%
City of Newcastle	3.5%	13.9%	10.1%	1.6%
NSW	2.9%	27.7%	25.2%	4.5%

Source: Based on ABS 2016 Census of Population and Housing, G07, G09 and G13

#### 4.4.4 Households and families

There were 120 households within the study area at the 2016 Census, of which 54.2 per cent comprised family households (refer to **Table 4.5**). Young families with children aged under 15 years represented about 41.4 per cent of total families in the study area, which was above the proportion of this family type in NSW. Compared to NSW, the study area had lower proportions of families without children and families with older children aged 15 years or over.

The study area had relatively high proportions of lone person households, with this group representing 36.7 per cent of households in the study area. This is compared to 29.2 per cent in the City of Newcastle and 23.8 per cent in NSW, and is likely to reflect the older age profile of residents in the study area.

Table 4.5 Households, 2016

Locality	Family households	Lone person households	Group households	Total households
Study area	54.2%	36.7%	5.0%	120
City of Newcastle	64.0%	29.2%	6.9%	59,974
NSW	72.0%	23.8%	4.2%	2,604,314

Source: Based on ABS 2016 Census of Population and Housing, G31

#### 4.4.5 Housing

There was a total of 151 dwellings in the study area at the 2016 Census, of which 120 dwellings (79.5 per cent) were occupied (refer to **Table 4.6**). Housing in the study area mainly comprises separate houses, with this dwelling type accounting for 95.8 per cent of occupied dwellings. This is well above the proportions of this dwelling type in the City of Newcastle and NSW and is likely to reflect the smaller housing stock and established nature of residential uses.

Table 4.6 Dwellings, 2016

Locality	Total dwellings	Occupancy rate	Separate house*	Semi-detached, row or terrace house, townhouse, flat or apartment*
Study area	151	79.5%	95.8%	0.0%
City of Newcastle	66,471	90.2%	71.1%	28.1%
NSW	2,889,057	90.1%	66.4%	32.1%

\* As proportion of total occupied dwellings

Source: Based on ABS 2016 Census of Population and Housing, G32

At the 2016 Census, about 53.3 per cent of dwellings in the study area were owner occupied (that is, owned outright or owned with a mortgage), which is below the proportion of owner-occupied houses in the City of Newcastle and NSW (refer to **Table 4.7**).

The study area had relatively high levels of rental housing compared to the City of Newcastle and NSW, with 41.7 per cent of households renting at the 2016 Census. About 13.3 per cent of rental houses were privately rented from a person not in the same households (for example, parent, relative) and 6.7 per cent were rented from a housing co-operative, community group or church group. These were both above the proportions of these rental housing types in both the City of Newcastle and NSW.

Housing costs in the study area were generally below the City of Newcastle and NSW in relation to both mortgage costs and rental costs. Households in the study area were more likely to experience housing stress compared to the City of Newcastle and NSW, with higher proportions of households paying 30 per cent or greater of household income on mortgage or rent payments.

Table 4.7 Housing tenure and costs, 2016

Locality	Owner occupied*	Rented	Rented (State housing authority)	Median housing costs**		Housing costs 30% or greater of household income	
				Mortgage costs (\$/month)	Rental costs (\$/week)	Mortgage payments	Rent payments
Study area	53.3%	41.7%	0.0%	1409	248	12.8%	16.5%
City of Newcastle	61.2%	35.5%	5.8%	1768	340	5.4%	14.2%
NSW	64.5%	31.8%	4.0%	1986	380	7.4%	12.9%

Note: \*includes owned outright and owned with a mortgage. \*\*median rental and mortgage costs and rent and mortgage payments for the study area refers to the average of SA2s in the study area.

Source: Based on ABS 2016 Census of Population and Housing, G02 and G33, ABS 2016 QuickStats

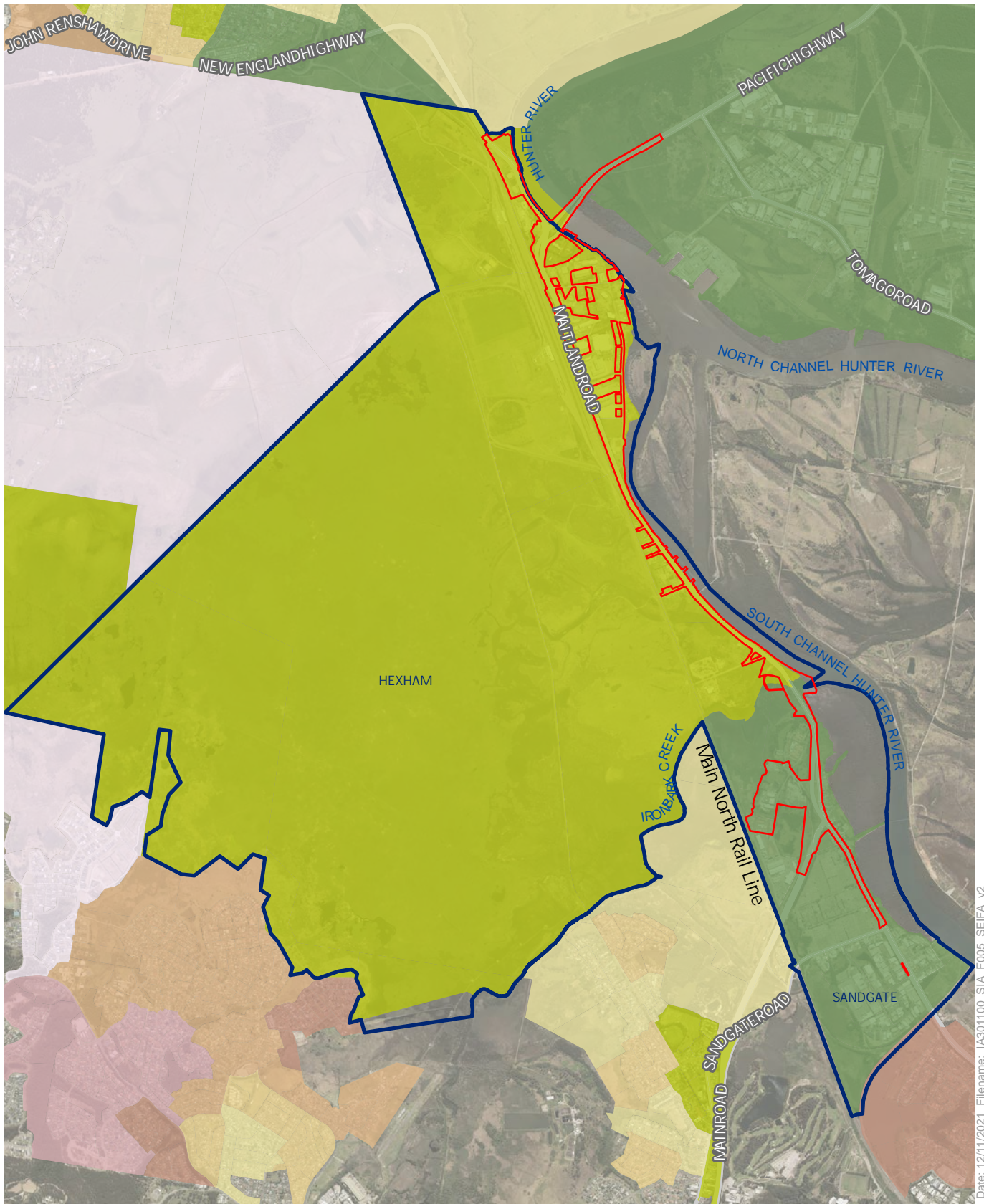
### 4.4.6 Disadvantage and need for assistance

The ABS produce socio-economic indexes for areas (SEIFA) that indicate relative levels of socio-economic advantage and disadvantage. The index of relative socio-economic disadvantage is derived from variables such as income, educational attainment, unemployment and vehicle ownership. Low decile values generally represent areas of disadvantage while high decile values generally represent areas of least disadvantage. The index of relative socio-economic disadvantage for the study area in 2016 is shown in **Figure 4.4**. Communities in the study area generally displayed higher levels of relative disadvantage.

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

As of the 2016 Census, 37.9 per cent of the population in the study area has a high proportion of people reporting a need for assistance, with this well above the proportion of this group in the City of Newcastle LGA and NSW. This was mainly due to very high proportions of people in need of assistance in Sandgate (at nearly 50 per cent), which is likely to reflect the presence of the Calvary St Joseph's Retirement Community.



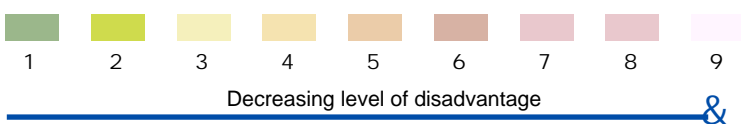


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**Legend**

- Construction area
- Study area

**Decile score**



Scale 1:40,000 at A4  
GDA94 MGA56



**Data sources:**  
 Jacobs 2020  
 Department of Finance,  
 Services and Innovation 2020  
 ABS SEIFA 2016

**Figure 4.4** Index of relative socio-economic disadvantage  
 Hexham Straight Widening

#### 4.4.7 Travel behaviour

Residents in the study area had proportions of people who travel to work by car, as either driver or passenger, well above NSW, although this was similar to the proportions of this group in the City of Newcastle. No residents in the study area reported to use public transport for their journey to work, which is likely to reflect the limited level of public transport servicing the study area. The study area also had a high proportion of people who travel to work using other road-based transport such as truck.

Households in the study area generally had a high level of access to private vehicle with low proportions of households without a vehicle and proportions of households with one or more vehicles similar to both the City of Newcastle and NSW. Vehicle ownership in the study area suggests a greater reliance of households on motor vehicles for travel (refer to **Table 4.8**).

Table 4.8 Vehicle ownership, 2016

Locality	No motor vehicles	One motor vehicle	Two or more motor vehicles
Study area	3.3%	36.7%	49.2%
City of Newcastle	9.3%	37.6%	49.7%
NSW	9.2%	36.3%	50.8%

Source: Based on ABS 2016 Census of Population and Housing, G30

## 4.5 Economic profile

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

### 4.5.1 Income and employment

Communities in the study area have lower incomes compared to the City of Newcastle and NSW, lower household and personal incomes, higher proportions of low income households (that is, households earning less than \$650 per week), and lower proportions of high income households (that is, households earning more than \$2500 per week) (refer to **Table 4.9**).

In 2016, there were 108 people aged 15 years and over in the study area who were either working or looking for work, representing a labour force participation rate of 28.1 per cent. This is significantly lower than the labour force participation rate of about 61 per cent in the City of Newcastle and NSW and is likely to reflect the older population in the study area. The study area reported relatively high levels of unemployment at the 2016 Census, with proportions of people aged 15 years and over who were looking for work which was more than double that for NSW.

Table 4.9 Income and labour force, 2016

Characteristic	Study area	City of Newcastle LGA	NSW
Median total household income (\$/week)	919	1,368	1,468
Median personal income (\$/week)	471	660	664
Lower income households (less than \$650 per week)	14.30%	8.70%	9.50%

Characteristic	Study area	City of Newcastle LGA	NSW
Higher income households (more than \$2500 per week)	10.00%	26.80%	27.70%
Labour force participation	28.10%	61.00%	59.20%
Unemployment	14.80%	7.40%	6.30%

Source: Based on 2016 Census of Population and Housing, G02, G28 and G43

As of the 2016 Census, the key industries of employment for residents in the study area included:

- Manufacturing (13.2 per cent)
- Healthcare and Social Assistance (13.2 per cent)
- Transport, postal and warehousing (12.1 per cent)
- Retail trade (11.0 per cent)
- Agriculture, forestry and fishing (9.9 per cent).

The proportion of the population employed in these industries are generally above the City of Newcastle LGA and NSW averages.

#### 4.5.2 Worker population profile

The ABS working population data provides information based on where a person goes to work. Working population data from the 2016 Census relevant to the study area is available at a SA2 geography, being Shortland-Jesmond SA2, which incorporates the suburb of Sandgate, and the Beresfield-Hexham SA2, which includes the suburb of Hexham, refer further to **Section 4.4.1**.

At the 2016 Census, combined total of 14,295 people worked within Shortland-Jesmond SA2 and Beresfield-Hexham SA2 (ABS, 2016b). Education and training was the highest industry of employment for people working in the study area and surrounding suburbs, employing about 26.1 per cent of workers in these SA2s. This was mainly due to the presence of the University of Newcastle, which accounted for about 46 per cent of people working in the Shortland-Jesmond SA2 (Based on ABS Census, 2016c).

Other key industries of employment for people working in the study area and surrounding suburbs included:

- Manufacturing (12.4 per cent of workers)
- Construction (9.3 per cent of workers)
- Retail trade (6.2 per cent of workers)
- Transport, postal and warehousing (6.1% of workers)
- Health care and social assistance (6.1 per cent of workers) (Based on ABS Census, 2016c).

Travel by car is the predominant form of transport for people commuting to the study area and surrounding suburbs for work. At the 2016 Census, about 80.7 per cent of people working in the Shortland-Jesmond SA2 and Beresfield-Hexham SA2 used a car (as either driver or passenger) for all or part of their journey to work. About two per cent of people walked to work, with this mainly people working in the Shortland-Jesmond SA2, and 1.7 per cent used other road based transport such as taxi, truck, motorbike or scooter. Bus commuters comprised about 1.6 per cent of workers in the study area and surrounding suburbs, with most of these people working in the Shortland-Jesmond SA2, again reflecting the presence of major facilities such as the University of Newcastle and the more urban nature of this SA2 (Based on ABS Census, 2016c).

The high proportion of people using a car to travel to work reflects the level of public transport access in the study area and surrounding suburbs, and the commuting distances workers are required to travel. In 2016, the average commuting distance for people working in the study area and surrounding suburbs was 20.2 kilometres, compared to 16.3 kilometres in the City of Newcastle LGA and 16.1 kilometres in NSW (ABS, 2018).

## **4.6 Local business and industry**

### **4.6.1 Businesses in the study area**

A range of businesses at Sandgate and Hexham that have potential to experience impacts from the proposal's construction and operation due to their location near the proposal. These are shown in shown in **Figure 4.5** and listed in **Attachment B**. They include businesses that service the needs of communities within and surrounding the study area, wider Hunter Region and motorists using Maitland Road, such as:

- Large scale manufacturing and heavy industrial uses
- Automotive retailers, including used car sales and truck sales
- Services related businesses, such as automotive repairs and servicing, transport and freight forwarding and auction house
- Service stations, which also include facilities for truck operators (for example, truck refuelling and parking areas)
- Eateries such as cafes, restaurants and takeaway
- Sport and recreation related businesses, including a sporting club and golf driving range.

In general, most businesses in the study area are considered 'destination businesses', for which people make a conscious decision to visit for a specific product or service. These include manufacturing and industrial businesses, automotive retailers, services-related businesses and sport and recreation related businesses. Businesses such as service stations and eateries are more likely to rely on passing trade for a larger proportion of their customer base.

Within the study area more broadly, light industrial areas are located at Wallsend Road and either side of Maitland Road south of Sandgate Cemetery. These include businesses such as food processing, warehousing, storage, wholesale retail and services related businesses. Access to the industrial area west of Maitland Road is provided from Wallsend Road to either Maitland Road to the east or Newcastle Inner City Bypass to the west.

Consultation with businesses in the study area for this assessment suggested that businesses in the study area service a wide catchment, with feedback indicating that customers to businesses come from across the lower Hunter Region. The hours of operation for businesses consulted for this assessment varied, with many operating until late at night, some operating from the early hours of the morning (that is 3.30am) and businesses such as McDonald's and service stations operating 24 hours, seven days a week.

Staff of businesses consulted with for this assessment generally rely on private vehicle for their work commute with businesses indicating that staff use of public transport was limited. This is consistent with the travel to work information presented in **Section 4.5.2**.

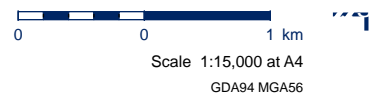
There are no businesses or industry located within the EIS area.



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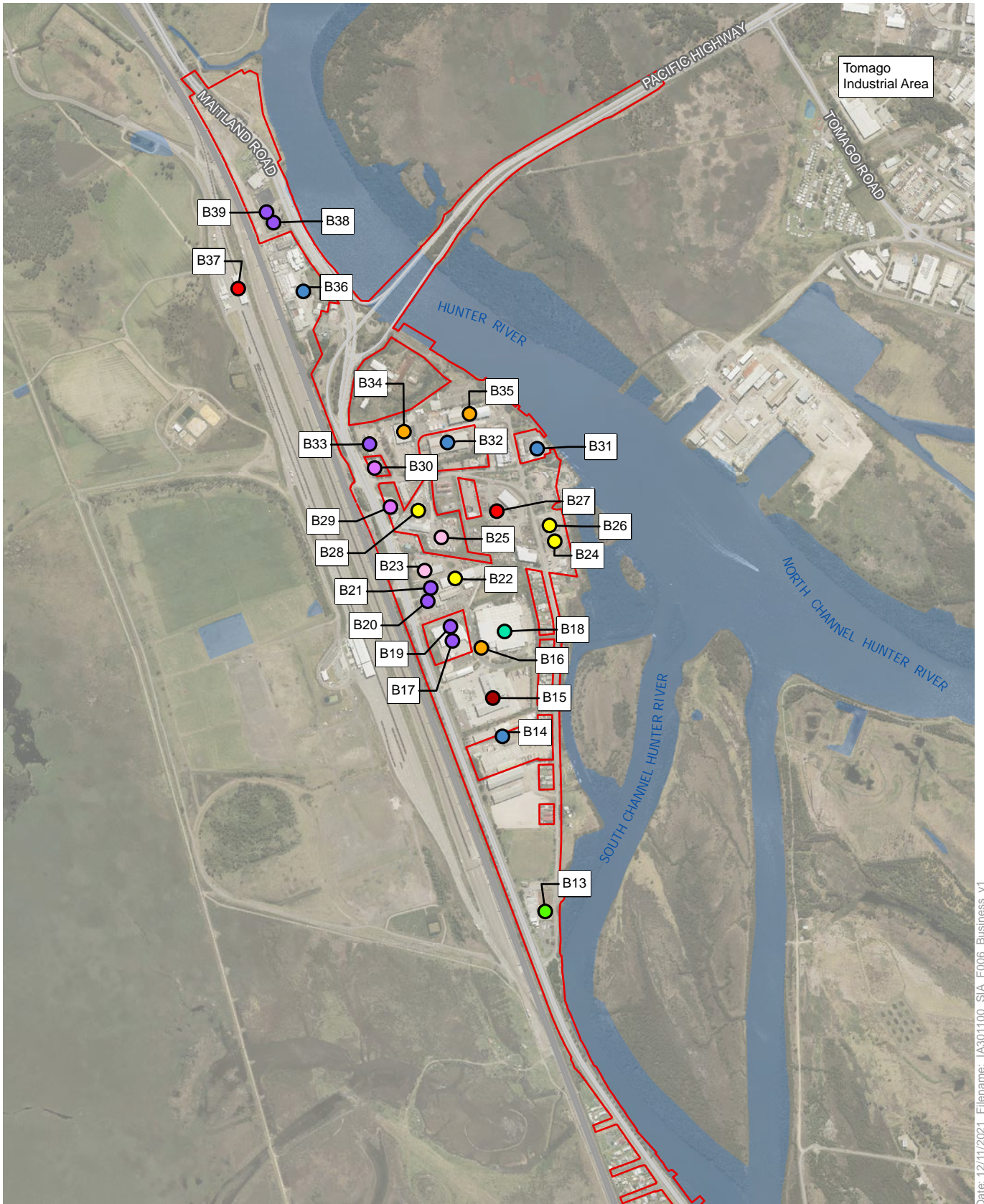
**Legend**

- |  |  |  |
|--|--|--|
| <span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span> Construction area | <b>Business type</b>   | <span style="color: purple;">●</span> Retail - service station   |
| <span style="border-bottom: 1px solid grey; width: 20px; display: inline-block;"></span> Railway                 | <span style="color: blue;">●</span> Industrial / manufacturing | <span style="color: cyan;">●</span> Cafe / restaurant / takeaway |
| <span style="border-bottom: 1px solid grey; width: 20px; display: inline-block;"></span> Road                    | <span style="color: green;">●</span> Construction              | <span style="color: lime;">●</span> Sport and recreation         |
| <span style="background-color: lightblue; width: 20px; height: 10px; display: inline-block;"></span> Waterway    | <span style="color: yellow;">●</span> Professional services    |  |
|  | <span style="color: red;">●</span> Transport services          |  |
|  | <span style="color: darkred;">●</span> Retail - automotive     |  |



**Data sources:**  
 Jacobs 2020  
 Department of Finance,  
 Services and Innovation 2020

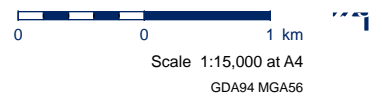
**Figure 4.5a** Businesses within the study area  
 Hexham Straight Widening



Date: 12/11/2021 Filename: IA301100\_SIA\_F006\_Business\_v1

**Legend**

- |  |  |  |
|--|--|--|
| <span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span> Construction area | <b>Business type</b>   | <span style="color: red;">●</span> Retail - automotive         |
| <span style="border-bottom: 1px solid black; width: 15px; display: inline-block;"></span> Railway                | <span style="color: blue;">●</span> Industrial / manufacturing         | <span style="color: purple;">●</span> Retail - service station |
| <span style="border-bottom: 1px solid grey; width: 15px; display: inline-block;"></span> Road                    | <span style="color: cyan;">●</span> Construction                       | <span style="color: pink;">●</span> Retail other               |
| <span style="background-color: lightblue; width: 15px; height: 10px; display: inline-block;"></span> Waterway    | <span style="color: yellow;">●</span> Auto repairs and servicing       | <span style="color: green;">●</span> Sport and recreation      |
|  | <span style="color: orange;">●</span> Professional services            |  |
|  | <span style="color: red;">●</span> Transport services                  |  |
|  | <span style="color: purple;">●</span> Equipment & machinery sales/hire |  |



**Data sources:**  
 Jacobs 2020  
 Department of Finance,  
 Services and Innovation 2020

**Figure 4.5b** Businesses within the study area  
 Hexham Straight Widening

#### 4.6.2 Businesses in surrounding areas

Maitland Road currently provides access to industrial and commercial precincts in suburbs surrounding the study area and in the wider City of Newcastle LGA, including:

- Port of Newcastle, located about 3.2 kilometres south of the proposal and incorporating the Kooragang Precinct, Mayfield Precinct, Carrington Precinct and Walsh Point Precinct. In 2019, the port received nearly 2300 ships and handled about 170 million tonnes of cargo, including coal, agricultural products, steel, machinery and vehicles, ammonia and ore concentrates (Port of Newcastle, 2019). Maitland Road is a key arterial road access between the Hunter Region and the Port of Newcastle
- Mayfield industrial area, located about 2.5 kilometres south of the proposal, which includes a range of general industry and commercial uses such as manufacturing businesses, wholesale retail, technical services, industry supplies, and personal services (for example, gym and fitness services). Access from Maitland Road is provided via Industrial Drive
- Tomago Industrial Precinct, located about 1.4 kilometres east of the proposal, which comprises industrial and manufacturing uses, including Tomago Aluminium, as well as services related businesses and transport services. Access from Maitland Road is provided via Hexham Bridge and Tomago Road
- Beresfield industrial area, located about five kilometres by road west of the proposal, mainly supports light industrial, freight, logistics, manufacturing, services related businesses (for example, auto repairs) and wholesale retail. Retail uses include such things as service stations, eateries and hardware stores that are likely to service surrounding industrial uses and neighbouring residential communities.

#### 4.7 Community values

This section provides an overview of those values and features likely to be important to communities in the study area for quality of life and wellbeing, based on existing literature, understanding of key features in the study area, and feedback received through consultation for the proposal.

Local amenity and character in the study area is mainly influenced by:

- Major industrial and manufacturing uses at Hexham and Sandgate
- Major transport infrastructure such as Maitland Road, the Pacific Highway, the New England Highway and the Main North Rail Line
- Natural features such as the Hunter Wetlands National Park, Hexham Swamp Nature Reserve and Hunter River.

Environmental and natural features such as the Hunter Wetlands National Park, Hexham Swamp Nature Reserve and Hunter River offer environmental, education, recreation and landscape amenity values that are important to local communities, visitors and volunteers. The Hunter Estuary Wetlands Ramsar site, including the Kooragang Nature Reserve (which is part of the Hunter Wetlands National Park to the east of the Hunter River) and Shortland Wetlands (including Hunter Wetlands Centre Australia) to the south Hexham Swamp Nature Reserve, also support nationally and internationally listed threatened species and waterbirds and migratory birds listed under international agreements. These areas are highly valued by local, national and international communities and the protection and conservation of these areas is important.

Major industrial and manufacturing uses in the study area contribute to the local and regional economy and are important to employment for residents in the study area and surrounding LGAs. The need for employment opportunities and support for job creation, including for young people, within the City of Newcastle LGA were identified through consultation for the City of Newcastle *Community Strategic Plan (Newcastle 2030)* as being important to residents (City of Newcastle, 2018b and 2018c).

Existing amenity in some locations in the study area, including residential areas, is currently affected by noise from major arterial roads such as Maitland Road and rail operations for the Main North Rail Line as well as noise from commercial and heavy industrial uses at Hexham and Sandgate.

The Hexham Bowling Club is also an important community meeting place and focus of community activities for local and regional residents, attracting members from the study area and surrounding LGAs. Environmental uses such as the Kooragang Wetlands Information Centre also foster a strong level of community cohesion and sense of community amongst volunteers. Several organisations currently operate volunteer programs that provide weekly and monthly activities for residents from the study area and surrounding LGAs.

Maintaining road safety and provision of a safe, reliable and efficient road network is important to communities in the study area and surrounding LGAs, with safe, reliable and efficient road and parking networks identified as a key strategy within Newcastle 2030 (City of Newcastle, 2018a). Consultation for this assessment and the proposal more broadly raised concerns about the existing level of congestion impacting on travel times for commuters during peak traffic periods and road safety in relation to some turning movements.

The EIS area contains environmental and natural features such as Coastal Wetlands and the South Channel Hunter River and Ironbark Creek offer environmental, recreation, and landscape amenity values. Land within the EIS area on the southern side of Ironbark Creek Bridge is accessed via an informal access road and is used informally for recreational fishing, and is likely to be valued by some community members for these activities.

A desktop internet search identified three roadside tributes located alongside the proposal including:

- A cross and flowers attached to a power pole on the eastern side of the Newcastle Inner City Bypass and Maitland Road intersection alongside the southbound lanes of Maitland Road, refer to **Plate 4.1**
- A free standing cross and flowers on the western side of the northbound lanes of Maitland Road north of the Old Maitland Road, Sandgate intersection near the Calvary St Joseph's Retirement Community, refer to **Plate 4.2**
- A cross attached to a tree on the eastern side of the southbound lanes of Maitland Road opposite the Sparke Street intersection, refer to **Plate 4.3**.



Source: Google Earth Pro, viewed 4 September 2021

Plate 4.1 Roadside tribute located at the Newcastle Inner City Bypass and Maitland Road intersection, view looking southeast



Source: Google Earth Pro, viewed 4 September 2021

Plate 4.2 Roadside tribute located to the north of the Old Maitland Road, Sandgate intersection near the Calvary St Joseph's Retirement Community, view looking northwest





Source: Google Earth Pro, viewed 4 September 2021

Plate 4.3 Roadside tribute located on the eastern side of Maitland Road opposite the Sparke Street intersection, view looking east

### 4.8 Social infrastructure

The study area accommodates a small number of community facilities and services, including sport and recreational facilities, aged care, and cultural facilities. These cater for residents from surrounding areas within the City of Newcastle LGA and adjoining LGAs.

Maitland Road also provides connectivity to services and facilities in surrounding suburbs such as Warabrook, Mayfield, and Shortland that are likely to be accessed by residents in the study area and wider region. These include facilities such as schools, childcare, parks and open space, sporting grounds, recreation facilities, cultural facilities, aged care and support services. The University of Newcastle is also located at the nearby suburb of Callaghan with access from Maitland Road provided via the Newcastle Inner City Bypass and University Drive. In 2019, the university’s Callaghan campus had about 22,736 student enrolments (University of Newcastle, 2020).

Community facilities and services located within about one kilometre of the proposal are listed in **Table 4.10** and shown on **Figure 4.6**. The proximity of these facilities to the proposal means that there is potential for these to experience direct or indirect impacts associated to the siting of project infrastructure, construction activities or operation.

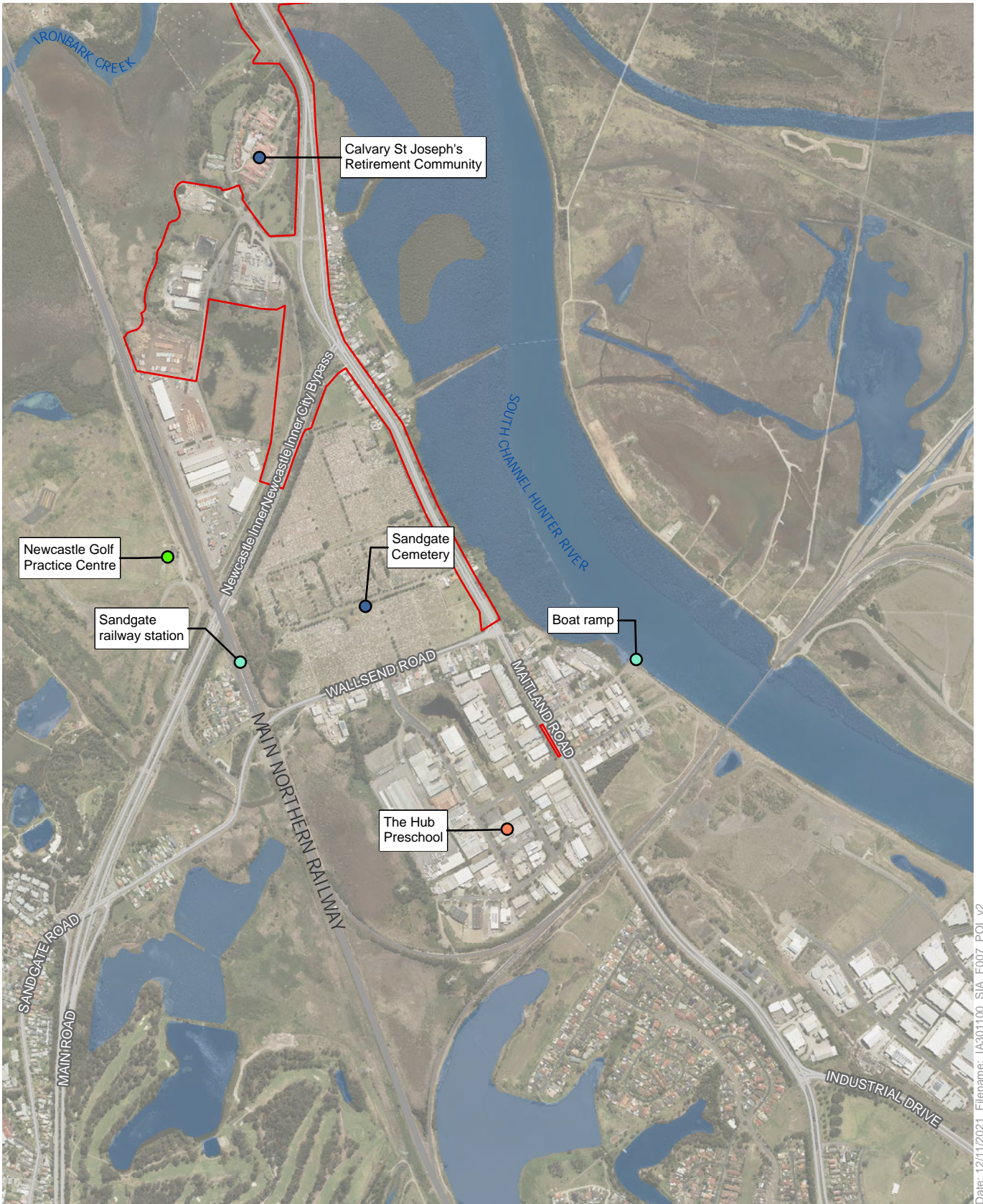
There are no formal social infrastructure facilities within the EIS area, although the area on the southern side of Ironbark Creek Bridge is used informally for recreational fishing.

Table 4.10 Social infrastructure within one kilometre of the proposal

Facility	Location	Description	Approximate distance from the construction footprint
<b>Sport, recreation, and leisure</b>			
Newcastle Golf Practice Centre	Off Astra Street, Shortland	The centre provides golf practice facilities and golf lessons. The facility is open to the public seven days a week from about 8.00am to between 5.30pm and 7.30pm.	670 metres
Foreshore Reserve	Old Maitland Road, Hexham	Informal reserve area that provides access to the South Channel of the Hunter River for activities such as recreational fishing. Facilities within the reserve are limited and include car parking and seating.	Next to the proposal

Facility	Location	Description	Approximate distance from the construction footprint
Hexham Bowling Club	Old Maitland Road, Hexham	<p>The Hexham Bowling Club hosts a range of regular bowling competitions, including on Saturday afternoon, Sunday mornings and Thursdays, and district weekend and midweek pennant competitions.</p> <p>The Bowling Club has a range of function room facilities that cater for business meetings, conferences, and private functions such as weddings for up to about 250 people. The Bowling Club also has a bistro that offers dining at lunchtime and evenings, seven days per week.</p> <p>The Bowling Club opens daily from 10.00am, with closing times varying between 10.00pm and midnight.</p>	Next to the proposal
Hexham Park	Old Maitland Road, Hexham	The park is located next to Hexham Bowling Club and provides sporting facilities for local communities. Facilities include cricket pitch, rugby field, lights, amenity and grandstand. The park is home of the Hexham Jets Rugby League Football Club	Next to the proposal
Rainforest Walk to Riverside Park	Wetlands Place, Shortland	Two-kilometre walking and cycling trail within the Hunter Wetlands National Park. The trail crosses Ash Island, connecting Scotts Point Way to Riverside Park. Access to the start of the walk at Scotts Point Way is provided via the Ash Island Bridge (Millams Road).	650 metres
Kooragang Wetlands Information Centre	Schoolhouse Road, Newcastle	<p>The Kooragang Wetlands are located at the northern end of Kooragang Island (Ash Island). The wetlands form part of the Hunter Wetlands National Park and includes boardwalks, cycleways and walking tracks, and facilities for fishing, birdwatching, and picnicking.</p> <p>The wetlands are accessed via the Ash Island bridge (Millams Road). The Schoolmasters House is occupied by the Friends of the Schoolmasters House Inc and provides a resource for community education.</p> <p>Several organisations operate volunteer programs in Kooragang Wetlands, including weekly and monthly activities (<a href="https://kooragangwetlands.com/">https://kooragangwetlands.com/</a>).</p>	545 metres
<b>Other facilities</b>			
Church	Old Maitland Road, Hexham	The Free Church of Tonga.	140 metres

Facility	Location	Description	Approximate distance from the construction footprint
The Hub Preschool	Rural Drive, Sandgate	Childcare centre catering for children from six weeks to school age. The childcare centre is located within the light industrial area south of Sandgate Cemetery.	910 metres
Calvary St Joseph's Retirement Community	Old Maitland Road, Sandgate	The retirement community provides residential aged care and independent living accommodation for 130 residents. The facility also provides short-term respite care accommodation for up to two weeks at a time ( <a href="https://www.calvarycare.org.au/retirement-communities/locations/sandgate-nsw/">https://www.calvarycare.org.au/retirement-communities/locations/sandgate-nsw/</a> ).	100 metres
Sandgate Cemetery	Maitland Road, Sandgate	The cemetery is bounded by Maitland Road, Newcastle Inner City Bypass, Wallsend Road and the Main North Rail Line. The cemetery has been continuously operating since 1881 and is managed by a not-for-profit community organisation, Northern Cemeteries. The cemetery includes a chapel that is available for services. Vehicle access to the cemetery is from Maitland Road ( <a href="https://nmclm.com.au/locations/sandgate/">https://nmclm.com.au/locations/sandgate/</a> ).	Next to the proposal



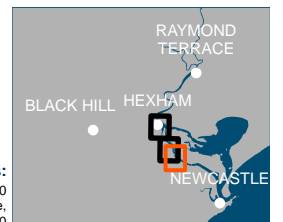
Date: 12/11/2021 Filename: IA301100\_SIA\_F007\_POI\_v2

**Legend**

- |  |   |
|--|---|
| <span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span> Construction area | <span style="color: blue;">●</span> Point of Interest |
| <span style="border-bottom: 1px solid grey; width: 15px; display: inline-block;"></span> Railway                 | <span style="color: orange;">●</span> Community       |
| <span style="border-bottom: 1px solid grey; width: 15px; display: inline-block;"></span> Road                    | <span style="color: green;">●</span> Education        |
| <span style="background-color: lightblue; width: 15px; height: 10px; display: inline-block;"></span> Waterway    | <span style="color: lime;">●</span> Recreation        |
|  | <span style="color: cyan;">●</span> Transport         |
|  | <span style="color: red;">●</span> Utility            |

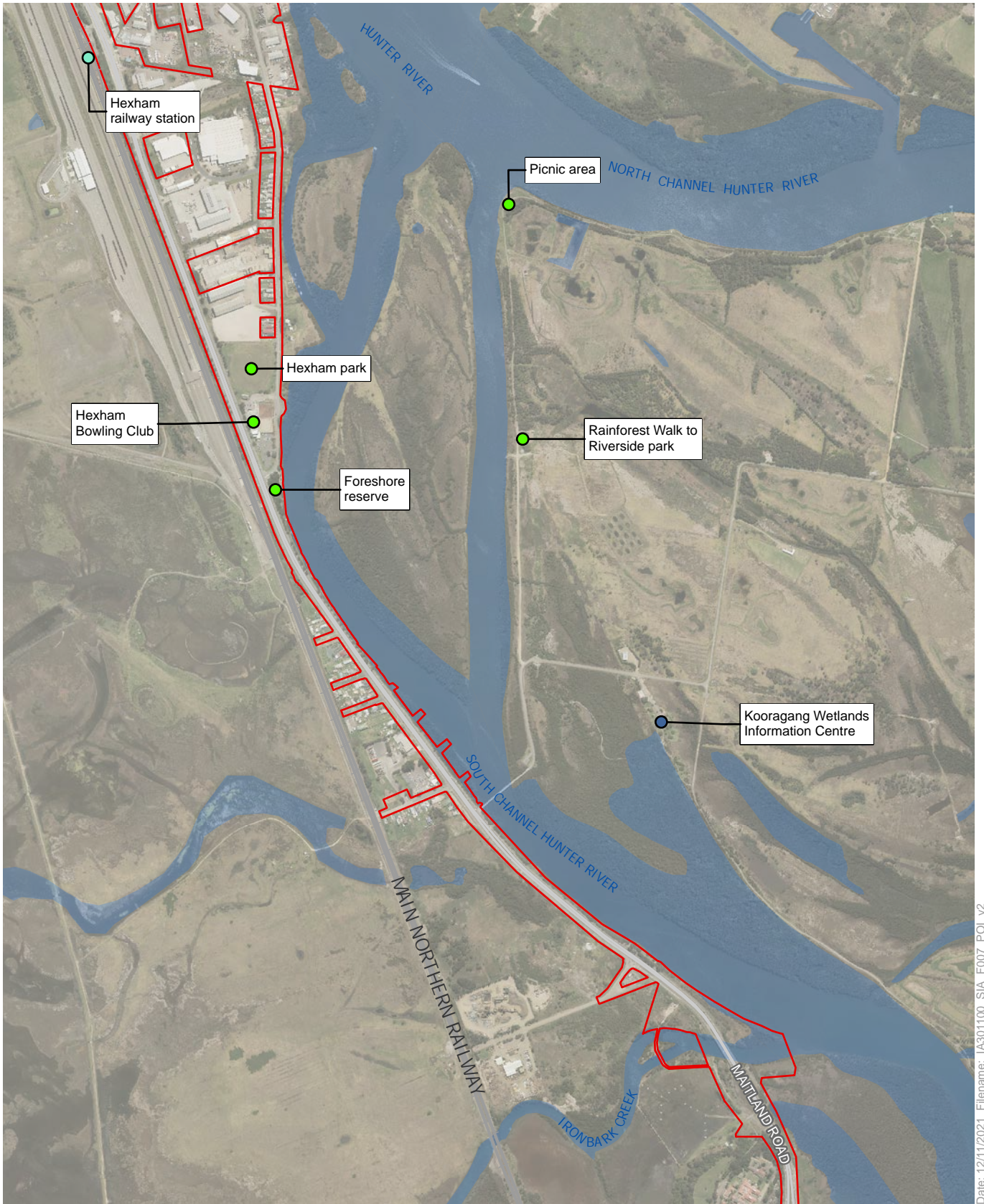


Scale 1:15,000 at A4  
GDA94 MGA56



**Data sources:**  
Jacobs 2020  
Department of Finance,  
Services and Innovation 2020

**Figure 4.6a** Social infrastructure within one kilometre of the proposal  
Hexham Straight Widening



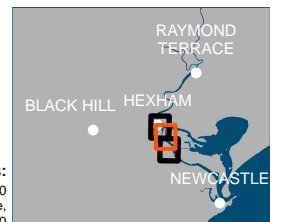
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**Legend**

- |  |   |
|--|---|
| <span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span> Construction area | <b>Point of Interest</b>                            |
| Railway  | <span style="color: blue;">●</span> Community       |
| Road   | <span style="color: orange;">●</span> Education     |
| Waterway   | <span style="color: green;">●</span> Recreation     |
|  | <span style="color: lightgreen;">●</span> Transport |
|  | <span style="color: red;">●</span> Utility          |

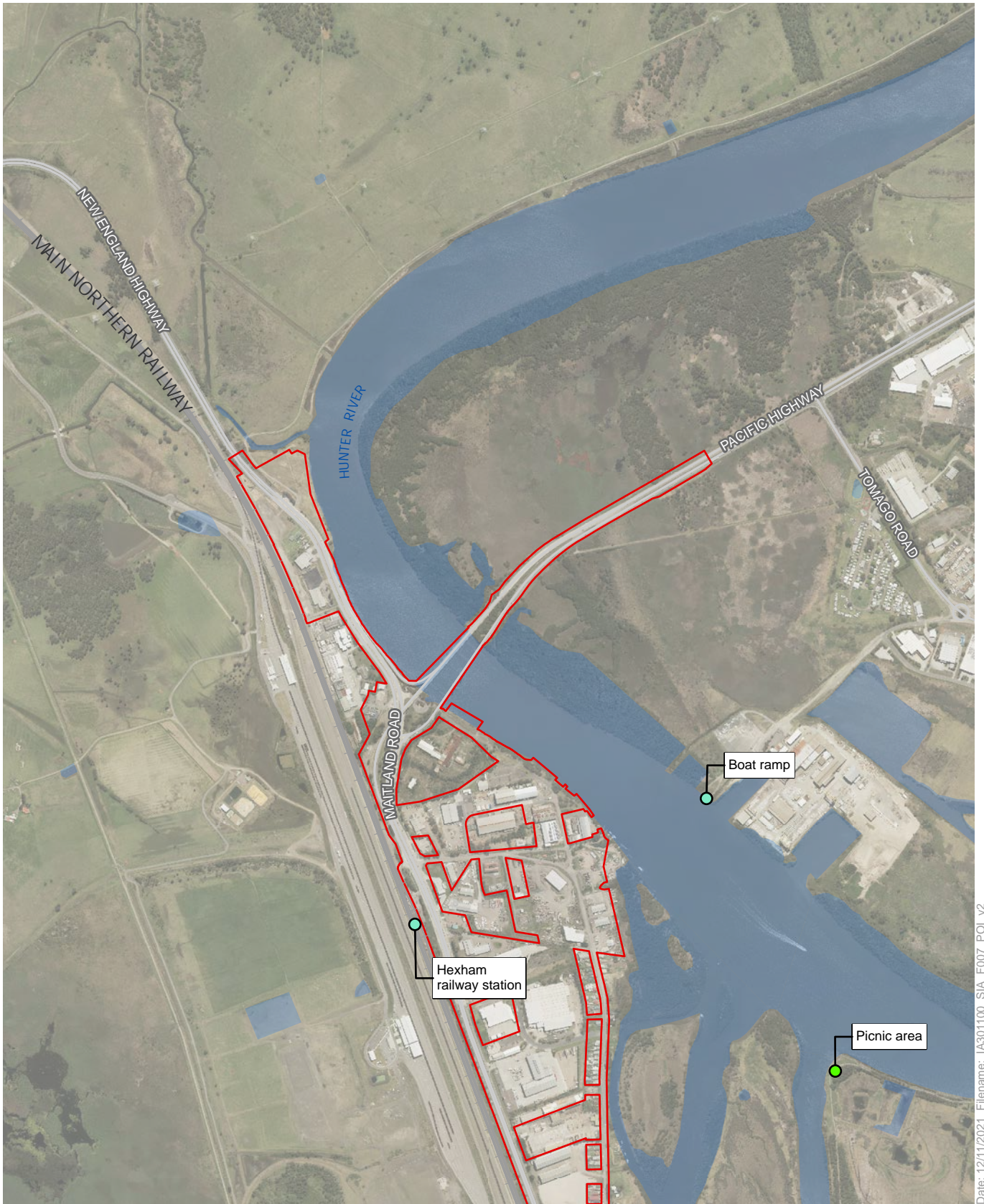


Scale 1:15,000 at A4  
GDA94 MGA56



**Data sources:**  
Jacobs 2020  
Department of Finance,  
Services and Innovation 2020

**Figure 4.6b** Social infrastructure within one kilometre of the proposal  
Hexham Straight Widening



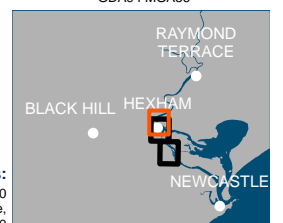
Date: 12/11/2021 Filename: IA301100\_SIA\_F007\_POI\_v2

**Legend**

- |                   |                          |
|-------------------|--------------------------|
| Construction area | <b>Point of Interest</b> |
| Railway           | Community                |
| Road              | Education                |
| Waterway          | Recreation               |
|                   | Transport                |
|                   | Utility                  |



Scale 1:15,000 at A4  
GDA94 MGA56



**Data sources:**  
Jacobs 2020  
Department of Finance,  
Services and Innovation 2020

**Figure 4.6c** Social infrastructure within one kilometre of the proposal  
Hexham Straight Widening

## 4.9 Access and connectivity

The study area is serviced by a range of transport services and facilities, including major roads and public transport facilities. The following provides a summary of key transport infrastructure and facilities in the study area. Further information is also provided in the *Hexham Straight Widening Traffic and Transport Assessment* (Jacobs, 2021a).

### Roads

Maitland Road is a key east-west link connecting the City of Newcastle to the wider Hunter Region. It also connects the Port of Newcastle to the National Land Transport Network, which is a defined national network of important road and rail infrastructure links and their intermodal connections. The road is recognised as Maitland Road and is also recognised as the A43 Pacific Highway to the south of Hexham Bridge, and Maitland Road and the A43 New England Highway and the A1 Pacific Highway to the north of Hexham Bridge to Tarro. The A1 Pacific Highway connects to the M1 Pacific Highway Motorway to the west of the proposal at Black Hill where it extends south to Sydney. The A1 Pacific Highway also heads east across the Hunter River where it extends north to Brunswick Heads and the interstate border with Queensland.

The New England Highway links the Hunter Region and New England regions with the Southern and Darling Downs regions in Queensland. The highway is part of the National Highway system and forms part of the inland route between Brisbane and Sydney.

Other key roads servicing communities, business and industry in the study area include:

- The A37 Newcastle Inner City Bypass, which provides an orbital road linking Newcastle's radial road network, connecting the Pacific Highway at Bennetts Green and the A43 Pacific Highway at Sandgate
- Old Maitland Road, which provides access from Maitland Road to industrial and community uses at Sandgate and Hexham. Old Maitland Road crosses the proposal three times and intersects to the south of Calvary St Joseph's Retirement Community (Old Maitland Road, Sandgate), to the south of Hexham Bowling Club in Hexham (Old Maitland Road, Hexham (south)) and to the north of Hexham Railway Station, Hexham (Old Maitland Road, Hexham (north)).

The study area includes a range of local streets that connect to Maitland Road, providing access for residents and businesses. These include:

- Sparke Street, that provides access for industrial uses
- Shamrock Street, which provides access for local residents and customers of McDonalds and the truck stop for the Shell service station
- Fenwick Street, Merchant Street and Clark Street at Hexham, which provide access for local residents
- Old Punt Road, which connects to Old Maitland Road at Hexham, providing access for industrial and commercial uses.

Community feedback on the initial design raised existing concerns about safety for motorists when entering and existing local streets to Maitland Road and the need for this to be addressed by the proposal.

### Rail network

The rail network in the study area consists of the Main North Rail Line, which provides access for freight and passenger services.

The Main North Rail Line supports the haulage of coal for export between mines in the Hunter Region and the Port of Newcastle (Hunter Valley Coal Chain). The track is maintained by the Australian Rail Track Corporation (ARTC), with services provided by four main haulage providers – Pacific National, Aurizon, Glencore and Southern Shorthaul Railroad. Train movements are scheduled by the Hunter Valley Coal Chain Coordinator. A train support

facility for Aurizon is located at Hexham, west of the Main North Rail Line. The facility consists of seven tracks with a total length of 10.5 kilometres and allows operational management of Aurizon coal trains, maintenance inspections, and servicing. Access to the facility is via an access road from the Tarro interchange to the New England Highway.

Regional passenger services in the study area are provided on the Hunter Line, which is operated by NSW TrainLink. The Hunter Line provides access for services between the Newcastle Interchange at Maitland, Scone and Dungog. Access to these services within the study area is provided by stations at Thornton, Beresfield, Tarro and Hexham. Train services stop at Hexham station generally stop hourly in each direction on Monday to Friday, weekends, and public holidays. The study area is also serviced by long distance passenger services operated by NSW TrainLink, connecting Sydney to Moree, Armidale, Grafton, Casino and Brisbane. Access to these services is provided by stations at Sandgate and Hexham. As indicated in **Section 4.4.7**, no residents in the study area reported using public transport, including rail services, for their journey to work at the 2016 Census.

### **Bus services**

The bus network in the study area consists of local buses and long-distance coach services. Local bus services near the proposal provide connections to Newcastle, Raymond Terrace and Cessnock. Public transport bus services that use Maitland Road within the study area include:

- Route 47, which operates between Jesmond and Marketown, via Warabrook
- Route 140, which connects Newcastle Interchange and Raymond Terrace, via Maitland Road and the A1 Pacific Highway
- Route 150, which connects Taree to Newcastle via Forster, Hawks Nest and Tea Gardens
- Route 151, which connects Taree to Newcastle via Forster and The Rock
- Route 152, which connects Hawks Nest and Newcastle
- Route 160, which connects Newcastle and Cessnock via the Newcastle Inner City Bypass, Maitland Road, New England Highway and John Renshaw Drive.

Routes 150, 151 and 152 do not service bus stops in the study area, with the closest bus stops to the study area at Newcastle and Raymond Terrace.

Maitland Road within the study area is also used for by 22 school bus routes that provide access for students in Raymond Terrace, Maitland, Clarence Town, Woodberry and Beresfield to schools and educational facilities in Newcastle, Raymond Terrace and Maitland.

Bus stops are located on Maitland Road in the study area, including:

- At Sandgate Cemetery (Stop ID 230442 and Stop ID 230467)
- Opposite Old Maitland Road at Sandgate (Stop ID 230470)
- At Calvary St Joseph's Retirement Community (Stop ID 230443 and Stop ID 230424)
- Near Shamrock Street at Hexham (Stop ID 232219 and Stop ID 2322137)
- Opposite Fenwick Street at Hexham (Stop ID 2322129)
- At Hexham Bowling Club (Stop ID 232273 and Stop ID 232218)
- At 320 Maitland Road, Hexham (Stop ID 232212)
- Opposite 338 Maitland Road at Hexham (Stop ID 232211)
- Near Old Maitland Road at Hexham (Stop ID 2322119 and Stop ID 232213).

One bus stop is located within the EIS area. This is on the southbound carriageway of Maitland Road near the intersection of Maitland Road and Shamrock Street at Hexham (Stop ID 2322137).



Feedback from consultation for the proposal also indicated that there were also informal bus stop locations used by bus passengers that were currently not signed.

### **Pedestrian and cycle access**

The cycle network in the study area is limited and mostly consists of on-road routes, facilitated on road shoulders, including Maitland Road and Newcastle Inner City Bypass. The on-road cycle routes in the area are considered to be for more experienced and confident riders. The pedestrian network near the proposal is limited to separated shared paths and footpaths on local roads. Signalised pedestrian crossings are provided at the intersections of:

- Maitland Road and Newcastle Inner City Bypass
- Maitland Road, opposite Calvary St Joseph's Retirement Community at Sandgate.
- Maitland Road and Sparke Street
- Maitland Road and Shamrock Street
- Maitland Road and Old Maitland Road (south)
- Maitland Road and Old Maitland Road (north).

### **Airports**

Newcastle Airport is located in Williamstown about 15 kilometres north of Newcastle. The airport is owned by City of Newcastle and Port Stephens Council on land leased from the Department of Defence. The airport runway is shared with Williamstown RAAF Base, which is located north of the runway and west of Medowie Road.

## 5. Community and stakeholder feedback

This assessment has been informed by the outcomes of community and stakeholder engagement for the project, including engagement with businesses carried out for this assessment (refer to **Section 3.4**). Further details about consultation undertaken for the proposal are detailed in the REF and the EIS.

Information from community and stakeholder consultation for the project identified a range of views and issues relating to land use, property and socio-economic effects of the proposal's construction and operation, including both positive and negative impacts.

**Table 5.1** provides a summary of feedback from interviews with businesses was carried out for this assessment, while **Table 5.2** summarises issues identified through community and stakeholder carried out for the proposal relevant to the key land use, property and socio-economic assessment.

Table 5.1 Summary of feedback from businesses

Issue	Summary of feedback
Business operations	<ul style="list-style-type: none"> <li>▪ Staff and customers access businesses in the study area are 'from all over' the Hunter Region (e.g. Maitland, Newcastle, Raymond Terrace, Beresfield, Heatherbrae)</li> <li>▪ Weekdays are generally busier than weekends (people travelling to and from work)</li> <li>▪ Catchment includes people travelling to and from work in Newcastle and Maitland in the morning and afternoon. Local catchment (Jesmond and Newcastle) are outside of these times.</li> </ul>
Existing business access	<ul style="list-style-type: none"> <li>▪ Staff and customers from the business turn left at the Hunter River (Old Maitland Road) and come out near the BP service station at Maitland Road</li> <li>▪ Customers travelling north currently use Old Maitland Road and lights at the northern end of Old Maitland Road</li> <li>▪ There are safety issues using the existing entry / exit at Maitland Road. Staff mainly use back accesses to businesses (from Old Maitland Road)</li> <li>▪ Trucks mainly use the 'back gate' to access the businesses, because the trucks are not able to use the front entrance due to safety concerns</li> <li>▪ When traffic permits the existing U-turn facility at Maitland Road, Hexham</li> <li>▪ Most staff drive to work</li> <li>▪ Patrons of the Hexham Bowling Club park on Old Maitland Road, Hexham</li> <li>▪ Customers and staff come from all directions. People from Newcastle use Old Maitland Road. If people leaving the business are heading to Beresfield, they use the U-turn facility across the road</li> <li>▪ During peak time, the trip between Mayfield and Hexham can take about 30 minutes, while in non-peak periods this is usually a five-minute trip</li> <li>▪ Congestion issues currently exist at Shamrock Street due to vehicles entering and exiting the McDonald's car park and drive-through.</li> </ul>
Construction access	<ul style="list-style-type: none"> <li>▪ Need to maintain reasonable access into an out of the business during construction to allow the business to function</li> <li>▪ Maintaining access to Old Maitland Road is important for businesses at Hexham</li> <li>▪ Reasonable access during construction should be maintained and trade should not be impacted.</li> <li>▪ Minimising impact on traffic during construction is important. There is a lot less traffic at night. Maitland Road busy very in the morning (6.30am-9.30am) and evening (3.30pm-6.30pm) (work and school trips).</li> </ul>

Issue	Summary of feedback
	<ul style="list-style-type: none"> <li>▪ Night and weekend works should be maximised to minimise traffic impacts by avoiding peak periods</li> <li>▪ Traffic management during construction is the main thing to consider for managing impacts. It is important that lanes aren't blocked during peak periods</li> <li>▪ Communication about access changes is important in order to make arrangements and avoid disruptions.</li> </ul>
Operation access	<ul style="list-style-type: none"> <li>▪ If customers / staff turn right at the Hunter River (Old Maitland Road), they can't turn right at Hexham Bowling Club. Where can they turn around?</li> <li>▪ Can the intersection at Hexham Bowling Club allow right turn movements?</li> <li>▪ There is insufficient room for cars to pass at Old Maitland Road when trucks are parked along the road</li> <li>▪ The proposal shouldn't be an impact, particularly if traffic lights stay where they are</li> <li>▪ The proposal would create a small inconvenience for the business, but it won't stop people coming to the business</li> <li>▪ Anything that frees up congestion will be beneficial. Congestion at Maitland Road is an issue and the proposal is a good idea</li> <li>▪ Don't think that there will be any issues during operation.</li> </ul>
Other issues	<ul style="list-style-type: none"> <li>▪ Issues with local flooding during large downpours at business at Maitland Road, Hexham (for example, driveway of business and street behind the BP is prone to flooding). Movement of stormwater is vital.</li> </ul>

Table 5.2 Summary of feedback from community and stakeholder engagement

Issue	Summary of feedback
Design	<ul style="list-style-type: none"> <li>▪ Suggestions to improve traffic flow at the Newcastle Inner City Bypass intersection, to include a flyover onto the Newcastle Inner City Bypass, and about additional access to Hexham Station</li> <li>▪ Request to extend widening, reduce traffic lights on Hexham Straight, and to add left turn slip and acceleration lane on south side of Maitland Road.</li> </ul>
Access and connectivity	<ul style="list-style-type: none"> <li>▪ Suggestion to close access road from the Calvary St Joseph's Retirement Community on to Maitland Road and redirecting traffic into the Old Maitland Road intersection</li> <li>▪ Concerns of safety and accessing businesses</li> <li>▪ Access and safety for local streets such as Merchant Street, Fenwick Street, Shamrock Street and Sparke Street</li> <li>▪ Suggestions to improve access for northbound cyclists over the Hunter River Bridge at Hexham, and for a dedicated shared pathway or off-road cycle paths and safety improvements</li> <li>▪ Suggestions on improved public transport sign posting and locations</li> <li>▪ Concerns about disruptions on Hexham Straight during construction and from the demolition of Iron Bark Creek bridge</li> <li>▪ Concerns about incidences of anti-social behaviour on Ash Island during the evening.</li> </ul>
Fishing	<ul style="list-style-type: none"> <li>▪ Retention or extension of fishing or tourism alcoves along the Hunter River edge.</li> </ul>

## 6. Impact assessment

### 6.1 Construction impacts

This section assesses potential impacts of the proposal's construction on property, land use, communities and businesses in the study area.

#### 6.1.1 Property

During construction, temporary leases would be required over some properties for temporary construction facilities such as site compounds and stockpile sites. Four locations have been identified for proposed temporary construction facilities within the REF area, including:

- The industrial estate located on Old Maitland Road, Sandgate to the south of Calvary St Joseph's Retirement Community (Compound 1)
- The industrial estate located to the east of Maitland Road and the west of Old Maitland Road, Hexham extending north from the northern boundary of the Hexham Park to the area of road corridor underneath the entry ramps to the Pacific Highway and Hexham Bridge (Compound 2)
- The industrial estate located to the west of Maitland Road Hexham near the Oak Factory (Compound 3)
- Vacant land at the northern end of the proposal to the south of the U-turn facility on Maitland Road at Hexham and to the east of the Hunter River (Compound 4).

The exact sites would be confirmed through the detailed design phase. Use of sites within these areas for temporary construction facilities would generally be consistent with surrounding industrial land uses.

Affected properties would be leased by Transport during the construction phase. Following construction, land occupied by construction works, but not required for ongoing operation of the proposal would be reinstated to its pre-construction use.

There would be no impacts to private property during construction within the EIS area. A temporary lease would be required during construction of the area of Crown land located within EIS Area 1.

#### 6.1.2 Land use

During construction, potential impacts on land use would mainly result from temporary use of land for construction facilities such as site compounds and stockpiles and changes in amenity for some uses near to construction works and temporary construction facilities.

Areas identified for temporary construction facilities include existing industrial land within the industrial areas of Hexham and Sandgate, or vacant land. The use of industrial land would be consistent with the existing land uses and is not expected to impact on industrial land in the study area.

Vacant land at Hexham identified for temporary construction facilities includes an area of cleared land owned by Transport at the northern end of the proposal between Maitland Road and the Hunter River and zoned for environmental conservation in the Newcastle LEP. This land is generally highly disturbed and has no or limited vegetation and an existing access track provides access from Maitland Road) to grazing land north of Purgatory Creek. Following construction, this land would be rehabilitated to its current use and temporary use of this site is not expected to impact on the future use of this land for environmental conservation.

Vacant land at Sandgate proposed to be used as a possible temporary construction facility for the proposal is owned by Transport and includes land north-west of the Newcastle Inner City Bypass and Maitland Road intersection, previously used for the construction of the Newcastle Inner City Bypass. This land is zoned for

infrastructure in the Newcastle LEP. Use of this land for construction is consistent with its current land use zoning.

During construction, potential land use impacts within the EIS area would mainly result from temporary use of land for construction sites and changes to amenity for users of the south channel of the Hunter River and Ironbark Creek near to construction works and temporary construction facilities. The proposal would result in the permanent loss of access to the area near Ironbark Creek used for recreational fishing. This impact would occur from the commencement of the construction phase. There are a number of sites within or near to the study area that provide access for recreational fishing and any impacts from the loss of access to this area for recreational fishing are generally expected to be minor.

The proposal would not result in any direct impacts on the Hunter Wetlands National Park, Hexham Swamp Nature Reserve or Kooragang Nature Reserve, although there is potential for indirect impacts on these natural features. Further assessment of potential impacts on these natural features is provided in the *Hexham Strait Widening Biodiversity Assessment Report* (Jacobs, 2021b).

### **6.1.3 Population and demography**

Construction of the proposal is not expected to change population and demography in the study area, including age and gender profiles.

The proposal would not require the acquisition of any residential properties within the study area. It is also anticipated that the construction workforce would be sourced from across the Hunter Region, where possible, or from areas within commuting distance of the proposal. As such, it is expected that most workers would commute from their homes on a daily basis, avoiding an influx of construction workers looking to live in the study area.

### **6.1.4 Employment and training**

During construction, the proposal would impact positively on employment opportunities for communities in the study area and surrounding LGAs through the creation of direct employment opportunities on the proposal. The proposal's construction would also provide training opportunities and apprenticeships, allowing individuals within the study area and surrounding LGAs to gain skills in the construction industry.

The proposal would create direct employment for about 500 workers, including construction workers and professional and administrative staff. The proposal would also support indirect employment opportunities in local, regional and national businesses and industries that support the construction of the proposal, for example businesses that provide goods and services to support the needs of the construction workforce, suppliers of construction materials and equipment, and transport operators.

Direct employment opportunities associated with the construction phase are likely to provide benefits for groups such as young people, unemployed, women and Aboriginal people. The construction phase would provide an opportunity to increase the representation of these groups in construction related employment, consistent with the NSW Government's Infrastructure Skills Legacy Program. The implementation of the NSW Government's APP policy to the proposal's construction phase would also provide employment, training and business opportunities for Aboriginal people.

Employment, training and apprenticeship opportunities provided by construction would support individuals' skills development and enhance their opportunities for future employment. Income from employment may also support improved social and economic outcomes for some workers. As the construction workforce is expected to be sourced from across the Hunter Region, where possible, these benefits are likely to be realised by local and regional communities. Locally, the benefit for residents in the study area and surrounding localities would be dependent on the availability of appropriately skilled and qualified workers.

### 6.1.5 Business and industry

During construction, potential impacts on local businesses may result from:

- Increased expenditure by construction workers on local goods and services
- Traffic disruptions and local access changes due to road works
- Increased noise, dust and construction traffic impacting on business amenity.

The construction phase may have a positive effect on some businesses within the study area and surrounding suburbs through increased customers and trade in response to the day-to-day needs of construction workers. This includes businesses such as service stations and food outlets near to construction works. Businesses supplying goods and services to construction, for example transport operators and equipment hire, may also experience benefits from increased construction activities locally.

Access to businesses near the proposal would be maintained during construction, although temporary access changes may be required for some businesses that have a frontage to Maitland Road. As indicated in **Section 4.6.1**, most businesses in the study area are considered 'destination businesses', for which people make a conscious decision to visit for a specific product or service. Consequently, any temporary access changes are generally not expected to impact on decisions of customers to visit specific businesses, although there are a small number of businesses that rely on passing trade for their customers, for example service stations and eateries. Where temporary access changes are required, these would be determined in consultation with individual businesses to ensure that impacts on customers and business operations are minimised. The need to maintain access to businesses during construction was identified by local businesses during consultation for this assessment as important to managing potential construction impacts. The importance of communication about access changes with local businesses was also identified through consultation with businesses as important in minimising disruptions.

Disruptions for motorists and road users during construction due to temporary lane changes and reduced speed limits have potential to cause delays for customers, staff and deliveries accessing businesses in the study area. This may be an inconvenience for some people accessing businesses near the proposal, although this is unlikely to impact on their decision to use a particular business given the nature of businesses in the study area (that is, 'destination businesses' access for specific goods or services). Communication about proposed traffic changes and possible disruptions during construction would also allow motorists to plan their journey and minimise any impacts on business staff, customers and deliveries. Further information of traffic management measures is provided in the *Hexham Straight Widening Traffic and Transport Assessment* (Jacobs, 2021a).

During construction, increased noise and dust from construction activities may impact on the amenity of some businesses near the proposal. Construction activities that have the highest potential to cause amenity disruptions for businesses include noise intensive works for early works and utilities, site establishment for compounds, and roadworks. The effect of this impact would depend on such things as the nature and type of business, but could impact on general business ambience. Businesses in the study area mainly include heavy industry and manufacturing uses that are likely to be less sensitive to amenity changes, although there are some businesses such as café/restaurants and sports clubs that have outdoor areas used by customers and may be more sensitive to amenity impacts. These include McDonald's, Oliver's Real Foods and Hexham Bowling Club. The implementation of environmental management measures such as noise and dust mitigation would help in managing potential impacts of construction.

### 6.1.6 Community values

During construction, potential impacts on community values would mainly be associated with adverse changes to local amenity due to such things as increase noise, dust and traffic from construction activities and changes to local access and connectivity due to works within the road corridor.

## Amenity

Temporary changes to local amenity would mainly occur for occupants of residential properties, and users of community facilities near to construction works. Construction activities that have the highest potential for amenity disruptions include early works and utilities, vegetation clearing, roadworks and finishing works. This may temporarily impact on individuals' use and enjoyment of these properties, particularly within outdoor areas such as at the Hexham Bowling Club, front and back yards of residential properties, and gardens and open space areas within the Calvary St Joseph's Retirement Community.

## Community health and wellbeing

It is expected that some work would need to be carried out during the evening and at night to minimise potential impacts on regional road networks for example delivery of oversized plant and materials, traffic switches, road works, construction of culverts, and utility modifications. Noise and light spill from these works have the potential to affect the evening and night-time amenity at residential properties closest to these works, for example houses along or near to Maitland Road at Hexham and Sandgate and residential uses within the Calvary St Joseph's Retirement Community at Sandgate. Concerns about potential noise to cause sleep disruptions and impact on the health and wellbeing of residents was raised during feedback on the proposal. Evening and night-time works also have potential to impact on the health and wellbeing of some residents closest to construction works, particularly where these works result in sleep disturbance or disruptions to sleeping patterns over extended periods of time. Evening and night-time activities at the construction compounds are predicted to be noticeable or audible at residential properties, although noise from these activities is not expected to be intrusive. The exception to this is residential properties along Old Maitland Road at Hexham, which are expected to experience intrusive noise impacts when construction compounds are used during the evening and night-time periods. Further discussion about potential noise impacts during evening and night-time periods, including proposed mitigation measures is in the *Hexham Straight Widening Noise and Vibration Assessment (SLR, 2021)*. Lighting associated with night-time construction works would be managed to minimise the potential for light to spill into nearby residential properties.

Feedback on the proposal identified concerns about possible risk of asthma and future health issues due to dust within homes near the proposal. Dust from construction activities has potential to affect health and wellbeing of some people, particularly where dust levels occur over extended periods. Potential health effects of dust are most likely to affect groups such as young children, elderly, or people with pre-existing respiratory conditions (for example asthma) or heart conditions. Given the number of sensitive receivers near to construction works (for example, houses, residential care home, commercial uses and sporting facilities) there is potential for short-term health effects due to dust from construction activities. Any effects are likely to be appropriately managed with the implementation of dust mitigation measures. Further discussion about potential health impacts from construction dust and recommended measures for mitigating potential health effects is provided in the *Hexham Straight Widening Air Quality Assessment (Jacobs, 2020a)*.

An increase in construction traffic and heavy vehicles on roads within the study area and changes to local traffic and pedestrian and cycle access during construction may impact on community perceptions relating to road safety. Further discussion about potential impacts of construction on access and connectivity within the study area is provided in **Section 6.1.8**.

Three roadside tributes were identified through desktop research along Maitland Road within the REF area (refer to **Section 4.7**) and which are immediately next to or within the construction area of the proposal. The northern most tribute located opposite Sparke Street would be directly impacted, and the other two may be impacted by the proposal. A review would be conducted prior to construction to identify the presence of any additional roadside memorials potentially affected by the proposal. Relocation or removal of these roadside tributes would be required, and would be carried out in accordance with *Roads and Maritime Roadside Tribute Guidelines (September 2016)*.

**Environmental values**

The proposal would not result in any direct impacts on the Hunter Wetlands National Park, Hexham Swamp Nature Reserve or Kooragang Nature Reserve, including within the EIS area, although there is potential for indirect impacts on these natural features. Construction of the new twin bridges spanning Ironbark Creek would also require the removal of native vegetation and the removal and relocation of threatened fauna species roosting within Ironbark Creek Bridge. As indicated in **Section 4.7**, natural and environmental features in the study area are important to communities for their environmental, education, recreation and amenity values and are a focus for environmental volunteering programs. Any impacts, direct or indirect, on the natural features of the study area and surrounding suburbs is likely to be a concern for some people, particularly in the context of historic vegetation removal in this area.

Further assessment of potential impacts on biodiversity values is provided in the *Hexham Straight Widening Biodiversity Assessment Report* (Jacobs, 2021b) and the *Hexham Straight Widening Biodiversity Development Assessment Report* (Jacobs, 2021c).

**6.1.7 Social infrastructure**

As indicated in **Section 4.8**, the study area accommodates a small number of community facilities and services that cater for the needs of residents in the study area and surrounding suburbs and from across the City of Newcastle LGA and adjoining LGAs. Potential impacts on community facilities and services during construction would mainly result from:

- Increased noise, dust and construction traffic impacting on amenity for users and staff of the community services and facilities
- Changes to local access and traffic disruptions and delays, due to road works.

These impacts would mainly affect social infrastructure located closest to construction activities and temporary construction facilities. Potential impacts on social infrastructure within one kilometre of the proposal are summarised in **Table 6.1** (refer to **Figure 4.6** for the location of these facilities). It is recognised that temporary changes to road conditions at Maitland Road may also cause disruption for users of social infrastructure in surrounding suburbs. While these impacts may inconvenience some users of these facilities, this is not expected to impact on the overall use of these community facilities. Further detail about impacts of construction on such things as local amenity and access and connectivity are in **Section 6.1.6** and **Section 6.1.8**.

As indicated in **Section 4.8**, there are no formal social infrastructure facilities within the EIS area and construction activities are not expected to impact any formal social infrastructure facilities in the wider study area. The proposal would result in the loss of permanent access to the area near Ironbark Creek that is used informally for recreational fishing. This impact would occur from the commencement of the construction phase. There are several sites within or near to the study area that provide access for recreational fishing and any impacts from the loss of access to this area for recreational fishing are generally expected to be minor.

Table 6.1 Construction impacts on social infrastructure within one kilometre of the proposal

Facility	Potential construction impacts
Sport, recreation and leisure	
Newcastle Golf Practice Centre	This facility is located off of Astra Street at Shortland, west of the Main North Rail Line. Access to Astra Street is provided via Sandgate Road and Wallsend Road. During construction, potential impacts on this facility would mainly be associated with access disruptions due to road works at Maitland Road. Access impacts would mainly affect users who are travelling from suburbs north of the proposal area, such as at Beresfield, Tarro and Heatherbrae. Any impacts on this facility from construction activities are expected to be negligible and are not expected to impact on the use or functioning of this facility.



Facility	Potential construction impacts
Foreshore Reserve	<p>The Foreshore Reserve area is located near the corner of Maitland Road and Old Maitland Road at Hexham, with access to the reserve provided from Old Maitland Road to the south of Hexham Bowling Club. Access changes due to roadworks at Old Maitland Road and Maitland Road and changes to amenity due to increased noise, dust and construction traffic, may impact on people’s use of this area for activities such as fishing. This may deter some people from using the reserve during the construction period, although alternate access to the river for fishing is available at other locations within the study area and surrounding suburbs. Overall, impacts of the proposal on the use of the reserve would be temporary and are expected to be minor.</p>
Hexham Bowling Club	<p>The Hexham Bowling Club is located at the corner of Maitland Road and Old Maitland Road at Hexham with vehicle access to the bowling club provided from Old Maitland Road. Noise, dust and construction traffic associated with the construction of the U-turn facility at Old Maitland Road, Hexham to the east of the bowling club and widening of Maitland Road may disrupt amenity at the bowling club. This has potential to temporarily affect the use and enjoyment of the bowling club for some individuals, particularly users of the bowling greens and outdoor eating and drinking areas located next to Old Maitland Road. As indicated in <b>Table 4.10</b>, the bowling club hosts regular weekday and weekend bowling competitions. There is potential for temporary disruptions for competitors and spectators if competitions coincide with construction activities that cause high levels of noise and dust. Consultation would be undertaken with the bowling club management during construction about proposed construction activities, which would assist in minimising any potential disruptions for users of the bowling club (refer to in <i>Hexham Straight Widening Traffic and Transport Assessment</i> (Jacobs, 2021a)).</p> <p>Increased dust from construction activities has potential to impact on the health and wellbeing of some groups that may be more sensitive to changes in air quality, for example, elderly and people who suffer respiratory conditions. This is likely to be important for construction activities near the bowling club due to the older demographics that typically participate in the game.</p> <p>Access to the bowling club’s car parking areas would be maintained during construction, although road works at Maitland Road and Old Maitland Road, south, Hexham may temporarily impact on the availability of roadside parking. Consultation for this assessment indicated that roadside parking was currently used by patrons of the bowling club, particularly during the busiest times at the club (for example, Friday, Saturday and Sunday). The loss of some roadside parking near the construction works may make finding a convenient car park near to the bowling club more difficult for some club patrons, possibly requiring some people to park further along Old Maitland Road and increasing the distance people are required to walk to the club. This is likely to have the greatest impact on people with mobility difficulties (for example, elderly, people with a disability), particularly as limited pedestrian facilities currently existing along Old Maitland Road. However, for most patrons, while this may be an inconvenience, it is not expected deter them from visiting the bowling club.</p> <p>An increase in construction traffic and movement of construction equipment and heavy vehicles at Old Maitland Road has potential to influence perceptions of safety for users of the bowling club, particularly children and the elderly. Club patrons are likely to be familiar with the presence of heavy vehicles on Old Maitland Road with the road used by trucks and vehicles accessing nearby industrial and manufacturing uses.</p> <p>The implementation of traffic management measures during construction would assist in minimising disruptions and maintaining safety for bowling club patrons. Ongoing consultation with managers of the bowling club would also help manage potential construction impacts on use of the bowling greens and other club facilities. Further</p>

Facility	Potential construction impacts
	<p>information of traffic and access management measures and is provided in the <i>Hexham Straight Widening Traffic and Transport Assessment</i> (Jacobs, 2021a).</p> <p>Further discussion about potential impacts on the club's business operations is in <b>Section 6.1.5</b>.</p>
Hexham Park	<p>Hexham Park is located to the north of the Hexham Bowling Club near to construction works at Maitland Road and Old Maitland Road.</p> <p>During construction, temporary amenity impacts may occur for users of the sporting oval due to increased construction noise, dust and traffic. This may affect the use and enjoyment of the oval for players and spectators, particularly if events coincide with noise and dust intensive construction activities such as some construction activities for early works and utilities and roadworks.</p> <p>An increase in construction traffic and movement of construction equipment and heavy vehicles at Old Maitland Road has potential to influence perceptions of safety for children using the sporting oval. Users of the sporting oval are likely to be familiar with the presence of heavy vehicles on Old Maitland Road with the road used by trucks and vehicles accessing nearby industrial and manufacturing uses. Traffic management measures would be implemented to minimise disruptions and maintain safety for users of the sporting oval.</p> <p>Construction works at Maitland Road and Old Maitland Road may temporarily impact on the availability of roadside parking for users of the sporting oval. This would most likely be an impact for users during peak use periods for the oval and when these coincide with peak use periods for the adjoining Hexham Bowling Club, although overall potential impacts are expected to be minor.</p>
Rainforest Walk to Riverside Park	<p>The walking track is located on Ash Island. During construction, access would be maintained to the Ash Island Bridge (Millams Road) with impacts for users of the walking track would mainly be due to temporary traffic disruptions from road changes at Maitland Road. Traffic management measures would be implemented to assist in managing delays and disruptions for road users in this area and potential impacts for users of this facility, if any, are expected to be negligible. Potential amenity impacts associated with increased noise from construction activities are not expected given the distance to the walking track from the construction works.</p>
Kooragang Wetlands Information Centre	<p>This facility is located on Ash Island. During construction, access would be maintained to the Ash Island Bridge (Millams Road) with impacts for users of the information centre and Kooragang Wetlands more generally would mainly be due to temporary traffic disruptions from road changes at Maitland Road. Traffic management measures would be implemented to assist in managing temporary delays and disruptions for road users in this area and potential impacts for users of this facility, if any, are expected to be negligible. Potential amenity impacts associated with increased noise from construction activities are not expected given the distance to the walking track from the construction works (that is, more than 500 metres).</p>
<b>Other facilities</b>	
Church (Free Church of Tonga)	<p>The Free Church of Tonga is located at Old Maitland Road next to Hexham Park. Construction noise and construction related traffic has potential to temporarily impact on amenity for users of the church. This may impact on the use and enjoyment of the church for some people as a place of gathering and worship, although any impacts are expected to be minor given the distance to the construction works (about 140 metres).</p> <p>Access would be maintained for church users, although temporary traffic disruptions may occur for some users due to construction works at Maitland Road and Old Maitland Road, Hexham. An increase in construction traffic and movement of construction equipment and heavy vehicles at Old Maitland Road, Hexham has potential to influence perceptions of</p>

Facility	Potential construction impacts
	<p>safety for users of the church, particularly children and elderly. Church parishioners are likely to be familiar with the presence of heavy vehicles on Old Maitland Road, Hexham with the road used by trucks and vehicles accessing nearby industrial and manufacturing uses. Traffic management measures would be implemented to assist in managing delays and disruptions for road users in this area and potential impacts from the use of Old Maitland Road, Hexham by construction traffic.</p> <p>Construction works at Old Maitland Road, Hexham may temporarily impact on the availability of roadside parking for users of the church, particularly when church services coincide with the peak use periods for the adjoining oval, although overall potential impacts are expected to be minor.</p>
<p>Calvary St Joseph's Retirement Community</p>	<p>This facility is located at Old Maitland Road at Sandgate about 100 metres from the proposal. During construction, potential impacts on amenity for residents, staff and visitors may result from increased noise, vibration, dust and construction traffic from construction works for the widening of Maitland Road and the operation of a temporary construction facility at Sandgate. This may temporarily impact on the use and enjoyment of some areas within the retirement community, such as outdoor areas and gardens used as meeting or gathering places or areas used for quiet relaxation.</p> <p>It is expected that some construction works, such as early works and utility relocations, road works, and finishing works would need to be undertaken during the evening and at night to minimise potential traffic impacts for users of Maitland Road during peak periods. Noise from these works may cause adverse changes to evening and night-time amenity and disruptions to sleeping patterns for residents of the retirement community. This has potential to impact the health and wellbeing of some residents, particularly if construction activities result in sleep disturbances over extended periods. Dust from construction activities may also be a concern for some residents who may be more sensitive to changes in air quality (for example, those with respiratory conditions). Further discussion about potential construction noise and dust impacts, including proposed mitigation and management measures is provided in the <i>Hexham Straight Widening Noise and Vibration Assessment</i> (SLR, 2021) and <i>Hexham Straight Widening Air Quality Assessment</i> (Jacobs, 2021e).</p> <p>Access to the retirement community, including to independent living units on Old Maitland Road, will be maintained during construction, although road works on Maitland Road may result in temporary disruptions or influence perceptions of safety residents and visitors of the retirement community. During construction, temporary relocation may be required to the bus stops on Maitland Road near the retirement community to allow safe access to be maintained for bus users. If bus stops are required to be relocated, locating temporary bus stops as close as practicable to the existing bus stop locations would help to maintain convenient access for bus users. Management measures relating to the public transport accessibility are provided in the <i>Hexham Straight Widening Traffic and Transport Assessment</i> (Jacobs, 2021a). Further discussion about potential impacts on local access and connectivity, including from the temporary relocation of bus stops is provided in <b>Section 6.1.8</b>.</p> <p>The implementation of traffic management measures during construction would assist in minimising disruptions and maintain safety for residents, staff and visitors of the retirement community. Communication with managers and residents of the retirement community about proposed changes to road and public transport access would also help to minimise disruptions. Further information of traffic management measures is provided in the <i>Hexham Straight Widening Traffic and Transport Assessment</i> (Jacobs, 2021a).</p>

Facility	Potential construction impacts
Sandgate Cemetery	<p>Sandgate Cemetery is located on Maitland Road south of the Newcastle Inner City Bypass. During construction, potential impacts may occur for visitors to the cemetery due to increased noise from construction activities, possibly disrupting peoples' use of the cemetery for reflection and remembrance of loved ones. This is most likely to impact on visitors to the northern section of the cemetery close to Maitland Road, which includes the crypt complex and war cemetery. Further discussion about potential construction noise impacts, including proposed mitigation and management measures is provided in the <i>Hexham Straight Widening Noise and Vibration Assessment (SLR, 2021)</i>.</p> <p>Potential impacts for visitors may also occur from temporary road changes and construction works at Maitland Road. This would be particularly relevant for visitors who are coming from areas along the proposal or to the north.</p>
The Hub Preschool	<p>The preschool is located within the Sandgate light industrial area south of Sandgate Cemetery. During construction, potential impacts on this facility would be due to temporary traffic disruptions due to works within Maitland Road. Any disruptions are expected to be minor and would mainly affect people travelling to the preschool from areas along the proposal or to the north. Traffic management measures would be implemented to assist in managing temporary delays and disruptions for road users in this area. Potential amenity impacts associated with increased noise from construction activities are not expected given the distance to the preschool from the construction works (that is, more than 910 metres).</p>

### 6.1.8 Access and connectivity

During construction, potential impacts on local access and connectivity would generally be associated with:

- Increased construction traffic on roads within the study area, including heavy vehicles used to deliver materials and equipment, and construction worker vehicles, impacting on road users including private and commercial motorists, cyclists and public transport users
- Temporary changes to road conditions near to construction work, including reductions in speed limits, temporary traffic lane closures, and temporary diversions and access changes
- Potential changes to bus services, including changes to road conditions and the temporary relocation of some bus stops near to construction work for safety, impacting public transport users.

#### Motorists

Much of the proposal would be constructed within the existing road corridor. Traffic flow would be maintained through the study area throughout construction, although temporary lane changes and reduced speed limits during construction may result in disruptions and delays for motorists and other road users. These activities may also present road safety risks for motorists and other road users, including pedestrians and cyclists. Feedback from consultation for the proposal raised issues about existing congestion along Maitland Road and concerns about increased congestion and traffic disruptions during construction of the proposal, particularly during the peak morning and afternoon peak periods. Traffic management measures would be implemented to maintain traffic flow through the proposal.

A pullover area on the northern side of the Ironbark Creek Bridge within the EIS area, opposite Sparke Street, would be impacted by the proposal and would not be available for user by motorists during construction.

#### Public transport users

Potential impacts for bus users would mainly be associated with delays to bus services due to changed road conditions and increased congestion and temporary relocation of bus stops. As indicated in **Section 4**, the study area has a relatively low level of public transport use for the commute to work by both residents and workers in

the study area, although it is likely to be important in providing access to community facilities such as the Hexham Bowling Club and Calvary St Joseph's Retirement Community. Construction works for widening of Maitland Road may require the temporary relocation of bus stops near to construction works for safety. Where bus stops are required to be relocated, some bus users may be required to walk further to access bus services, potentially affecting people with mobility difficulties, such as people with a disability or elderly people. If bus stops are required to be relocated, temporary bus stops would be located as close as practicable to the existing bus stop locations, while maintaining safety for bus users and pathways to the temporary bus stop locations would also be provided. This will be particularly important at bus stops near Hexham Bowling Club and Calvary St Joseph's Retirement Community, which are assumed to be used by higher numbers of older people

Access to rail passenger services at Hexham Station would not be affected during construction of the proposal. Vehicle access to the commuter car park at Hexham Station would be maintained during construction, although temporary changes may be required for construction of the new access road.

The proposal would require the permanent relocation of the bus stop near the intersection of Maitland Road and Shamrock Street (Stop ID 2322137) located within the EIS area. During construction, a temporary bus stop may be required until the permanent bus stop is established. Potential impacts for users of the bus stop would be the same as those described above. Consultation would be carried out with the affected bus operators during detailed design about the location of the bus stop.

### Property access

Access to private properties near to construction works would also be maintained. Where temporary changes are required to driveway accesses during construction, suitable access arrangements would be implemented in consultation with affected property and business owners. The presence of construction works, changes to local road conditions (for example, lane closures), and increased traffic on local streets during night-time diversion periods may influence perceptions of road safety for local communities and some motorists, pedestrians and cyclists. Traffic management measures would be implemented throughout construction to maintain traffic safety near to proposed works. Further discussion about impacts on business access is in **Section 6.1.5**.

The existing informal access road that provides access to the area of Crown land on the southern side of Ironbark Creek Bridge via would be permanently removed by the proposal and would occur from the commencement of construction. Pedestrian access would be available to the area of Crown Land once construction has been completed.

### Emergency services

During construction, potential impacts on emergency services would mainly be associated with temporary road changes including lane closures, speed restrictions and night works through the proposal area. The nearest emergency services near the proposal include NSW Fire and Rescue at Mayfield West and Tarro, and NSW Ambulance at Wallsend and Beresfield. The implementation of traffic management measures during construction would help to manage potential delays or disruptions for motorists using Maitland Road. Liaison with emergency services would also be important before any changes to the existing road network are implemented. Further information of traffic management measures is provided in the *Hexham Straight Widening Traffic and Transport Assessment* (Jacobs, 2021a).

## 6.2 Summary of construction impacts

### 6.2.1 REF area

During construction, the proposal would have temporary positive impacts for local employment and businesses and industry in the REF area. Negative impacts on communities, business and industry during the construction phase would mainly be associated with:

- Direct and indirect employment opportunities for communities in the study area and surrounding LGAs through the creation of direct employment opportunities during construction

- Temporary disruptions for motorists and road users during construction due to temporary lane changes and reduced speed limits that have potential to cause delays for customers, staff and deliveries accessing businesses in the study area. This would potentially inconvenience some people accessing businesses near the proposal
- Temporary changes to local amenity for occupants of residential and commercial properties, and users of community facilities near to construction works. These temporary changes would possibly impact on individuals' use and enjoyment of these properties, particularly within outdoor areas
- Noise and light spill from night works, resulting in potential temporary impacts on night-time amenity at residential properties closest to these works and impacts on health and wellbeing due to sleep disturbance or disruptions to sleeping patterns
- Dust from construction activities, resulting in possible effects on the health and wellbeing of some people near to construction works who may be more sensitive to changes in air quality
- Increased noise, dust and construction traffic and access changes temporarily impacting on users and staff of community services and facilities, such as Hexham Bowling Club, Hexham Park, the Church at Old Maitland Road, and Calvary St Joseph's Retirement Community
- Increased construction traffic on roads within the study area and changes to road conditions, temporarily impacting on road users including private and commercial motorists, cyclists and public transport users
- One roadside tribute would be directly impacted and two roadside tributes may be impacted during construction of the proposal.

### 6.2.2 EIS Area

During construction, potential impacts on land use in the EIS area would mainly result from temporary use of land for construction sites and changes in amenity for some uses near to construction works and temporary construction facilities.

There are no formal social infrastructure facilities within the EIS area and construction activities are not expected to impact any formal social infrastructure facilities in the wider study area. During construction, the proposal would result in the permanent loss of the informal access road to the south of Ironbark Creek which currently provides vehicular access for recreational fishing. This impact would occur from the commencement of the construction phase. There are a number of sites within or near to the study area that provide access for recreational fishing along the nearby waterways and any impacts from the loss of access to this area for recreational fishing are generally expected to be minor.

During construction, a temporary bus stop may be required until the permanent bus stop near the intersection of Maitland Road and Shamrock Street (Stop ID 2322137) is relocated.

The proposal would not result in any direct impacts on the Hunter Wetlands National Park, Hexham Swamp Nature Reserve or Kooragang Nature Reserve, although there is potential for indirect impacts on these natural features.

## 6.3 Operation impacts

### 6.3.1 Property

#### Directly affected properties

The proposal would mainly be within the existing road corridor for Maitland Road, with property acquisition limited to partial property acquisition of two properties, including:

- One private property comprising commercial use:
- About 424 metres squared of vacant land at Shamrock Street, which forms part of a larger Shell service station property (Lot 1, DP623278)

- About 628 metres squared of Crown land at Old Maitland Road (Lot 7002, DP1052280).

Directly impacted properties are shown in **Attachment C**. The proposal would not require the acquisition of any residential properties.

The proposal would also directly impact on land within the Main North Rail Line corridor owned by Transport and maintained by ARTC (Lot 1013, DP1193512), and vacant land owned by Transport next to the Maitland Road connection with Hexham Bridge (Lot 100, DP1034798).

Private properties affected by the proposal would be acquired by Transport prior to construction in accordance with the provisions of the *NSW Land Acquisition (Just Terms Compensation) Act 1991* (the Act) and the Land Acquisition Reform 2016 process (<https://www.propertyacquisition.nsw.gov.au/>). The Act provides the basis for an appropriate valuation process and the fair assessment of compensation. Section 29 of the *Land Acquisition (Just Terms Compensation) Act 1991* also provides for the compulsory acquisition of Crown land by an authority of the State.

Where private property is only partly affected by the proposal, Transport would carry out a partial acquisition of the directly affected portion. The partial acquisition of the one private property would not impact on the operation of the commercial uses on this property (that is, the Shell service station). Further discussion about potential business impacts of the proposal's construction and operation is provided in **Section 6.1.5** and **Section 6.3.5**.

The proposal would not require the full or partial acquisition of property within the EIS area.

### Other property impacts

The proposal would not require the demolition of any buildings or structures on properties to be partially acquired. The proposal would not require any property adjustments and any driveway access affected by the proposal would be reinstated. Access to three properties at Maitland Road, south of Shamrock Street, is currently provided via an informal side road that runs parallel to Maitland Road. This would be changed as part of the proposal so that the driveways to each of the three properties connects directly to Maitland Road.

Potential impacts may occur for properties near to the proposal due to changes in local amenity and road traffic noise. Further discussion about potential amenity impacts for communities near the proposal are discussed in **Section 6.3.6**. Additional information is also provided in the *Hexham Straight Widening Noise and Vibration Assessment* (SLR, 2021), *Hexham Straight Widening Air Quality Assessment* (Jacobs, 2021e) and *Hexham Straight Widening Urban Design, Landscape Character and Visual Amenity Assessment* (Tract, 2021).

### 6.3.2 Land use

The proposal involves the upgrade of the existing road corridor and would mainly be located within the existing road corridor for Maitland Road. As such, the proposal is not expected to change the land use pattern in the study area and current land uses in the study area would continue. Access would be maintained to existing properties near the proposal and any driveway access affected by the proposal would be reinstated.

The proposal is recognised in the Greater Newcastle Metropolitan Plan and would support future land use and development within the study area and surrounding suburbs. The proposal would also support improved connectivity between strategic centres and growth areas within the City of Newcastle and adjoining LGAs, supporting efficiencies in freight movements and future growth, and making it easier for people to get to work, recreation facilities and services.

Operation of the proposal would result in the permanent loss of the informal access road located on the southern side of Ironbark Creek and within EIS Area 1. The informal access road provides vehicular access for recreational fishing but the area would be able to be accessed on foot once the proposal is operation. Furthermore, there are several sites within or near to the study area that provide access for recreational fishing on nearby

waterways and any impacts from the loss of vehicular access to this area for recreational fishing are generally expected to be minor. Within the EIS area, the proposal would also result in the permanent loss of a small area of land zoned for environmental conservation (E2) on the northern side of Ironbark Bridge Creek. This is not expected to impact on the land use within the wider study area. Potential impacts on ecological values is in the *Hexham Straight Widening Biodiversity Assessment Report* (Jacobs, 2021b).

### 6.3.3 Population and demography

The proposal would not require the removal of any dwellings or relocation of residents within the study area and consequently would not directly cause changes to population and demography in the study area. Indirectly, operation of the proposal would support future population growth of strategic centres and growth areas within the study area and wider Hunter Region.

### 6.3.4 Employment and training

Operation of the proposal would not result in any direct impacts on employment and training. As indicated in **Section 6.3.1**, the partial acquisition of one private commercial property would not directly impact any commercial functions or change existing commercial operations on this property.

Indirectly, the proposal would support improved access and connectivity to key employment areas in the study area and Hunter Region, including at Hexham, Thornton, Beresfield, Black Hill, Tomago, Raymond Terrace and Port of Newcastle. In particular, the proposal would reduce commuting times for resident and worker populations, business and industry.

As indicated in **Section 4**, private vehicle was the predominant mode of transport used by residents and workers in the study area and surrounding suburbs for their commute to work. Further, workers in the study area and surrounding suburbs currently commute long distances to work. Reduced congestion provided by the proposal and consequent improvements in travel times and travel reliability would impact positively on residents and workers, helping to reduce commuting times for residents and workers and helping to increase access to employment within convenient commuting times.

### 6.3.5 Business and industry

As indicated in **Section 6.3.1**, the proposal would require the partial acquisition of one private commercial property at Hexham. The partial acquisition would not impact any commercial functions or change existing commercial operations on this property.

During operation, the proposal would have positive impacts for local and regional business and industry by supporting improved access and connectivity to key employment and strategic growth areas in the Lower Hunter Region, including Black Hill – Beresfield, Tomago, Raymond Terrace, Hexham, the Port of Newcastle and Newcastle central business district. In particular, the proposal would reduce congestion and improve travel time reliability for motorists and freight vehicles.

Locally, the proposal would improve road safety and accessibility, including through reduced congestion, travel time savings and improved travel reliability for staff, customers and deliveries. This would impact positively on businesses, supporting general improvements to local business and industry within the study area and surrounding suburbs. Changes to existing U-turn facilities and removal of some right turn movements would require changes in access routes for staff, customers and deliveries of some businesses, increasing the distance required for some people to travel. For example:

- Closure of the median and the right-turn facility at Gilbert & Roach Trucks would mean drivers would have to make a detour when accessing the facility from the south. Two options are available and include:
  - Accessing the rear of the property from Gallegghan Street via Old Maitland Road (south). This would be an increase of between 200 metres but would only be available for light vehicles



- Using the existing U-turn facility at the northern end of the proposal opposite the Oak Factory access road (heavy and light vehicles permitted) which would be increase in 2.4 kilometres. Vehicles could access the front access on Maitland Road
- Vehicles heading north when leaving the property, would have to exit Gilbert & Roach Trucks via the rear access on Galleghan Street turning left onto Old Maitland Road to access the Old Maitland Road (north) and Maitland Road intersection
- Closure of the right-turn facility at Gilbert & Roach trucks would mean drivers of light vehicles accessing Industrial Galvanizers Corporation from the south are unable to perform U-turns on Maitland Road and would be required to access the property from the entrance at Old Maitland Road, or alternatively use the detours proposed for Gilbert & Roach trucks discussed above
- Closure of the U-turn facility south of Old Maitland Road, Hexham would mean drivers of light vehicles exiting the Ampol Hexham Diesel Stop and Truckline Newcastle to head to Beresfield would be required to use Old Maitland Road, increasing travel distance by about 2.7 kilometres. Heavy vehicles would need to continue south to use the U-turn facility at Sparke Street, increasing travel distance by up to six kilometres
- Access to the Oak Factory to the north of the A1 Pacific Highway and Maitland Road intersection would be upgraded to a short left-turn slip lane from Maitland Road to provide safer access. Access southbound to this site would be via the existing right turn lane at the signalised intersection. The uncontrolled right turn 150 metres to the north of this would be removed as a solid median barrier would be in place
- Closure of the median at Brancourts Dairy along with the right in and right out movements. Access to Brancourts Dairy northbound would be maintained as left in and left out only. Access for southbound traffic would be via the existing signalised intersection of the Oak Factory southern access road. Vehicles exiting the site and travelling south would use the existing southern access signalised intersection to turn right onto Maitland Road.

Feedback from consultation for this assessment suggested that potential impacts of these changes would generally be minimal, if any. It was also suggested that while restrictions on turning movements would be a small inconvenience for some staff and customers, it would not impact on people accessing businesses in the study area.

Operation of the proposal is not expected to impact on business amenity in the study area, with most businesses in the study area comprising heavy industry and manufacturing uses.

A summary of potential impacts on businesses near the proposal from the operation of the proposal are outlined in **Table 6.2**. Further discussion about local access changes is provided in **Section 6.3.8**.

Table 6.2 Summary of operational impacts

Location	Potential operational impacts
Old Maitland Road, Sandgate	Businesses in this location include a Crawfords Freightlights (transport operator), Adbri Masonry and HL Mullane & Son (services-related business). Operation of the proposal is not expected to impact on the operation of these businesses. Access arrangements to Old Maitland Road, Sandgate would be the same as existing access arrangements.
Maitland Road, Sandgate (Sandgate Cemetery to Old Maitland Road, Sandgate)	A small number of businesses are in this location, including a Caltex service station, glass manufacturer (Koala Glass), radio station studio (105.3 NEWFM) and automotive retailer (Sandgate Autos). Operation of the proposal is not expected to impact on the operation of these businesses with proposed access arrangements similar to existing arrangements.
Maitland Road, Hexham (Sparke Street to Fenwick Street)	Businesses in this section of the study area include InfraBuild Recycling, McDonald's, Shell service station and Oliver's Real Food located within the service station. No changes are proposed to existing access arrangements for these businesses.

Location	Potential operational impacts
	<p>The establishment of a new U-turn facility at Shamrock Street is likely to increase traffic volumes in this street. Shamrock Street is used by customers accessing McDonald’s car park and drive-through facilities and the heavy vehicle parking and refuelling facilities for the Shell service station. Feedback from local businesses on the proposal identified existing concerns about the operation of the Maitland Road and Shamrock Street intersection, with lengthy queues occurring during peak periods for vehicles exiting the McDonald’s car park. Increased traffic in Shamrock Street associated with the U-turn facility has potential to increase queuing for customers of McDonald’s, resulting in potential delays for customers.</p>
<p>Hexham industrial area</p>	<p>The Hexham industrial area includes numerous heavy industrial and manufacturing businesses as well as service stations and other retail uses, services-related businesses, and a sporting club (Hexham Bowling Club). For most businesses, the proposal would not result in any changes to existing access arrangements or result in changes to business operations. During operation, some businesses fronting Maitland Road would be affected by changed access arrangements associated with the closure of the central median and U-turn facility located opposite Truckline Newcastle. This may require some customers, staff and delivery drivers to travel further to access businesses in this area. For example:</p> <ul style="list-style-type: none"> <li>▪ The closure of the right-turn into Gilbert &amp; Roach Trucks would mean drivers of light vehicles accessing Gilbert &amp; Roach Trucks from the south would be required to access the property from Galleghan Street at the rear of the property, an increase of about 200 metres, while vehicles leaving the property to head north would be required to travel a further 500 metres</li> <li>▪ Closure of the right-turn facility at Gilbert &amp; Roach trucks would mean drivers of light vehicles accessing Industrial Galvanizers Corporation from the south would be required to access the property from the entrance at Old Maitland Road, or alternatively use the northern intersection of Old Maitland Road and Maitland Road</li> <li>▪ The closure of the U-turn facility south of Old Maitland Road, Hexham would mean drivers of light vehicles exiting the Ampol Hexham Diesel Stop and Truckline Newcastle to head to Beresfield would be required to use Old Maitland Road, increasing travel distance by about 2.7 kilometres.</li> </ul> <p>Consultation with local businesses for this assessment suggested that the proposed changes would have minimal impact, if any, on business customers, staff and deliveries. Feedback also indicated that:</p> <ul style="list-style-type: none"> <li>▪ While the existing turn-facility (opposite Truckline Newcastle) was used by some staff and customers, this was dependent on traffic permitting this movement</li> <li>▪ Use of the existing right-turn facility within the central median opposite Gilbert &amp; Roach, was generally not used by staff or customers due to safety and constraints of existing traffic.</li> </ul> <p>A number of businesses with a frontage to Maitland Road, also have a secondary entrance from Galleghan Street or Old Maitland Road, Hexham which are used by staff, customers and delivery drivers to access the businesses. Overall, businesses in this location consulted for this assessment suggested that while some motorists would be inconvenienced by longer travel routes to access businesses, this impact would be minimal and would not impact on people accessing businesses in this location.</p> <p>The proposal would include the establishment of a new U-turn facility at Old Maitland Road, Hexham to the north of the Hexham Bowling Club. The establishment of this facility is not expected to impact on the functioning or operation of the bowling club.</p>
<p>Maitland Road, Hexham</p>	<p>Businesses in this section of the study area include Brancourts Dairy, two businesses that provide industrial equipment sales and hire, and Hexham Train Support Facility.</p>

Location	Potential operational impacts
(north of A1 Pacific Highway on-ramp)	<p>Operation of the proposal is not expected to impact on the ongoing operation and functioning of these businesses. The existing property access to Brancourts Dairy would be modified to improve safety for road users and vehicles exiting and entering this site. This includes the removal of the median at Brancourt Dairy along with the right in and right out movements. Access to Brancourt Dairy for northbound traffic would be maintained as left in and left out only. Access for southbound traffic would be via the signalised intersection of the Oak Factory southern access road and Maitland Road where traffic would have to complete a U-turn on either side of the intersection. Vehicles exiting the site and travelling south would need to exit north and turn around at the existing U-turn facility at the northern end of the proposal or use a side road further north.</p>

**6.3.6 Community values**

Overall, the proposal would support improved travel and accessibility to work, business and leisure activities in the study area and surrounding suburbs.

More efficient travel and connectivity for motorists and public transport users provided by the proposal would have positive impacts on community cohesion within the study area and surrounding LGAs, by encouraging people to make trips they may otherwise avoid due to reduced travel reliability and unacceptable travel times. This would support social and community interaction and participation of community members in community activities.

Improved access and connectivity to employment areas in the study area and surrounding LGAs would also support enhanced access to employment opportunities. This would have a positive impact on residents and workers and increase the number and types of employment within acceptable commuting times. As indicated in **Section 4.7**, supporting employment and jobs creation is important to communities in the surrounding LGAs, and enhanced access to employment centres is likely to be seen as a positive by community members.

Potential adverse impacts of the proposal’s operation on community values would mainly be associated with changes in traffic noise at residential, commercial and community uses along the proposal and increased traffic on local roads such as Shamrock Street at Hexham. Land uses in the study area, including residential uses, are currently subject to high levels of road traffic noise and the proposal is not expected to result in an increase in road traffic noise at a level that would be perceptible from current noise levels (that is, by more than 2 dB). Further consideration would be given during future detailed planning to cumulative traffic noise impacts of the proposal and the need for additional noise mitigation measures. Mitigation measures would be implemented for receivers that qualify for consideration of additional noise mitigation to manage potential operational noise impacts. Noise mitigation would potentially include low noise pavements, noise mounds or barriers or at-property treatments where other measures are not appropriate or practical.

Elsewhere, operation of the proposal is not expected to adversely impact on community values, although the proposal would require changes to local access routes as discussed in **Section 6.3.8**. This was identified as a concern by some residents and is likely to affect their satisfaction with their immediate surroundings.

Feedback on the proposal raised concerns about impacts for residents in Shamrock Street due to the new U-turn facility. Specifically, concerns were raised about impacts of additional traffic on homes in Shamrock Street, which are already affected by heavy vehicle traffic associated with the truck stop for the Shell service station and traffic from the McDonald’s restaurant, and potential impacts of increased traffic noise on the health and wellbeing of residents (for example, disruptions to sleep patterns). The *Hexham Straight Widening Traffic and Transport Assessment* (Jacobs, 2021a) completed for the proposal assessed changes to traffic due to the use of the U-turn facility on Shamrock Street. The assessment found that changes to traffic on Shamrock Street due to the inclusion of the U-turn facility are not expected to be significant, with about 45 additional vehicles traveling on Shamrock Street daily. This represents an increase in traffic movements on Shamrock Street of about two per

cent from traffic counts undertaken for the proposal in March 2021. Traffic using the U-turn facility at Shamrock Street may however impact on perceptions of safety for local residents, including when accessing or exiting their property or when using their front yards and street. Vehicle noise and lighting from traffic using the U-turn facility also has potential to impact on the amenity of residential properties in Shamrock Street and affect residents' use and enjoyment of their homes. Noise and lighting from vehicles using the U-turn facility also has potential to disrupt sleep or affect the sleep quality for some individuals, possibly affecting their health and wellbeing. Further discussion about potential traffic noise impacts is provided in the *Hexham Straight Widening Noise and Vibration Assessment* (SLR, 2021).

The proposal would not result in any direct impacts on the Hunter Wetlands National Park, Hexham Swamp Nature Reserve or Kooragang Nature Reserve within the EIS area, although there is potential for indirect impacts on these natural features. Further assessment of potential impacts on these natural features is provided in the *Hexham Straight Widening Biodiversity Assessment Report* (Jacobs, 2021b).

### **6.3.7 Social infrastructure**

During operation, the proposal would contribute to improved access and connectivity to services and facilities within the study area and surrounding suburbs. This includes major regional facilities such as the University of Newcastle and facilities such as schools, sport and recreation facilities, and cultural uses that service residents in the study area and surrounding suburbs. This would have long-term positive impacts for local and regional communities.

Locally, access routes for most social infrastructure in the study area would remain the same as those currently used. However, access changes would be required for facilities on Ash Island (for example, the Rainforest Walk to Riverside Park and Kooragang Wetlands Information Centre) due to the closure of the central median and right turn from Old Maitland Road. Users of these facilities would be required to use the new U-turn facilities at Shamrock Street and Sparke Street, increasing the distance to be travelled by about 600 metres for motorists from the south (for example, from Newcastle) and about 1.4 kilometres for motorists travelling to the north (for example, towards Beresfield). While this may be an inconvenience for users of these facilities, any potential impacts would be balanced by increased road safety and quicker and more reliable travel times and is not expected to adversely impact on the overall use of these facilities.

Traffic noise from the operation of the proposal has the potential to impact on some social infrastructure at Sandgate and Hexham, including Sandgate Cemetery, Hexham Park, the Hexham Foreshore Reserve, and the Free Church of Tonga at Old Maitland Road. These facilities are currently affected by road traffic noise and noise from surrounding land uses. Further discussion about operational noise impacts of the proposal is in *Hexham Straight Widening Noise and Vibration Assessment* (SLR, 2021).

### **6.3.8 Access and connectivity**

#### **Motorists**

Operation of the proposal would support travel time savings and improved travel reliability for motorists using the Maitland Road corridor. This would have positive impacts of local and regional communities, business and industry through improved connectivity to employment and growth areas in the study area and surrounding suburbs, and the Lower Hunter Region more broadly.

Within the study area, the proposal would result in changes to local routes through the closure of the median and restrictions on some right turn movements along Maitland Road, including:

- For northbound motorists accessing Ash Island Bridge (Millams Road)
- For southbound motorists accessing Fenwick Street and for motorists exiting Fenwick Street towards the south
- Into Gilbert and Road Trucks Newcastle for northbound motorists

- For southbound motorists using the signalised U-turn facility south of Hexham Station.

Feedback from community members on the initial proposal design identified concerns relating to restrictions on right-turn movements at Fenwick Street impacting on access for residents of Fenwick Street and Merchant Street, Hexham. Access changes at Fenwick Street would increase travel distances by about 840 metres for motorists travelling from the north and 1400 metres for motorists exiting Fenwick Street to head south. Access changes to Gilbert & Roach Trucks would increase travel distance by up to 500 metres.

It is recognised that changes to travel routes for residents and business customers and staff to access affected properties are likely to be an inconvenience for motorists that currently make these traffic movements, resulting in increased travel distances and travel time. However, these changes would support improved road safety for road users, and on balance it is considered that the impacts associated with increased travel distances and travel time would be outweighed by the improved safety outcomes for motorists and local communities.

A new U-turn facility would be established at Shamrock Street, Hexham, which would cater for vehicles with a maximum size of 12.5 metres (that is, a single unit truck or bus). This would allow access for:

- Northbound motorists to Ash Island Bridge (Millams Road)
- Motorists from Sparke Street travelling to destinations south of Sparke Street (with the exception of vehicles from the metals recycling businesses at Sparke Street, which according to the DA approval for this facility restricts southbound vehicles associated with the business from using any residential streets, including Shamrock Street, and requires vehicles to use the existing U-turn facility located under the A1 Pacific Highway northbound on ramp that connects to the bridge over the Hunter River that is opposite the Oak factory southern access road about 90 metres north of the A1 Pacific Highway and Maitland Road intersection)
- Southbound motorists to residential streets between Fenwick Street and Clark Street
- Motorists from Hexham Bowling Club who are travelling to destinations north of Hexham Bowling Club, noting that access for northbound motorists is also provided via the intersection of Maitland Road and Old Maitland Road north of Hexham Station.

Shamrock Street currently provides access to numerous residential and commercial uses, including:

- Residential properties along the southern side of Shamrock Street between Maitland Road and the Main North Rail Line corridor
- McDonalds for customers, staff and deliveries
- The heavy vehicle parking and refuelling facilities at the Shell service station
- Main North Rail Line corridor for maintenance activities by ARTC.

Community feedback on the proposal identified existing issues for residents of Shamrock Street accessing their properties due to traffic accessing local businesses or using Shamrock Street as an informal turn around. Specifically, community members were concerned about potential for the new U-turn facility to exacerbate existing traffic issues within Shamrock Street, including difficulties in accessing properties during peak periods, use of Shamrock Street by B-double vehicles, and speeding vehicles. Feedback also raised concerns about delays for customers of McDonald's due to the layout and signal phasing at the intersection of Shamrock Street and Maitland Road.

### **Public transport users**

Operation of the proposal would have beneficial impacts for bus operators and public transport users associated with reduced congestion and improvements in bus travel times and reliability. Feedback on the proposal identified that increasing delays is affecting the ability of bus operators to provide timely and attractive services, making it difficult to encourage residents within the Hunter Region to use public transport. The proposal would support the aim of encouraging more residents to use public transport.

The proposal would not affect current bus routes, although some bus stops would be relocated. These include bus stops opposite Calvary St Joseph's Retirement Community, opposite Shamrock Street and Fenwick Streets, and at Hexham Bowling Club. The bus stop at Maitland Road opposite Old Maitland Road (north) would also be relocated south to provide better connectivity to Hexham Station. Relocation of the bus stops would provide safer access and improved connectivity for bus commuters, and help to encourage the use of public transport for some trips. A new bus stop would also be provided near the Newcastle Inner City Bypass and Maitland Road intersection, improving bus access for nearby residents.

The proposal would require the permanent relocation of the bus stop near the intersection of Maitland Road and Shamrock Street (Stop ID 2322137) located within the EIS area. Potential impacts for users of the bus stop would be the same as those described above. Consultation would be carried out with the affected bus operators during detailed design about the location of the bus stop. Further information on bus stop locations, including the location of new or relocated bus stops, is in the *Hexham Straight Widening Traffic and Transport Assessment* (Jacobs, 2021a).

Access to the Hexham Railway Station for northbound vehicles would be modified to include a new left slip lane about 150 metres to the south of the existing access road. For southbound vehicles travelling to the Hexham Railway Station the closure of the U-turn facility on Maitland Road opposite Truckline Newcastle would require vehicles to use Old Maitland Road (either north or south) at Hexham to access the station. A new access road has been added to the western side of the intersection of Old Maitland Road (north) and Maitland Road to Hexham Railway Station.

### **Pedestrian and cyclist access**

The proposal would improve access and safety for pedestrians within the study area and connectivity to bus stops and residential, commercial and industrial uses through the relocation of existing pedestrian facilities and provision of new facilities. Changes to existing pedestrian network would include relocation of signalised pedestrian crossings at the Shamrock Street and Maitland Road intersection and Old Maitland Road (south) and Maitland Road intersection. These changes would support improved access to relocated bus stops opposite Shamrock Street and at Hexham Station. A new signalised pedestrian crossing would also be provided at the A1 Pacific Highway and Maitland Road intersection and across the access to the Brancourts Dairy along with a new 900 metre shared user path along the western side of Maitland Road, north of the A1 Pacific Highway and Maitland Road intersection. This would have positive impacts for residents, workers and visitors within the study area.

The proposal would include dedicated two-metre wide shoulders for cyclists and a new 900 metre shared user path at the northern end of the proposal. This would improve cycle access and connectivity through the study area and would support increased cycling for residents and workers in the study area and surrounding suburbs. This would also support access for people who use mobility scooters.

### **Emergency services access**

Once operational, the proposal would have positive impacts for emergency services due to reduced congestion and enhanced travel times and travel reliability for emergency service vehicles using Maitland Road.

## **6.4 Summary of operational impacts**

### **6.4.1 REF area**

Once operational, the proposal would have positive impacts for local and regional communities, business and industry in the REF area by enhancing access and connectivity for residents, workers, businesses and freight in the study area and surrounding LGAs, supporting future growth and development of employment areas and strategic centres. The main negative impacts on communities, business and industry from the proposal's operation would mainly be associated with:

- Changes in local access at Hexham due to the restriction of right-turn movements, resulting in changes to local routes and increasing travel distance required to access residential properties, businesses and community facilities
- Use of the U-turn facility at Shamrock Street, Hexham impacting on perceptions of safety for local residents, amenity of residential properties and possible disruptions to sleeping patterns for some individuals.

### 6.4.2 EIS Area

There would be no impacts on property and land use due to the operation of the EIS area. During operation, impacts to social infrastructure within the EIS area include:

- The bus stop (ID 2322137) located on the southbound carriage way of Maitland Road at the Shamrock Street and Maitland Road intersection would be permanently relocated. Consultation would be carried out with the affected bus operators during detailed design
- Loss of the informal road access to the area on the southern side of Ironbark Creek Bridge providing vehicular access for recreational fishing, requiring users of this area to use facilities elsewhere for this activity. There are a number of sites within or near to the study area that provide vehicular access for recreational fishing and any impacts from the loss of vehicular access to this area for recreational fishing are generally expected to be minor as the area will still be able to be accessed on foot once the proposal is operational.

## 6.5 Cumulative impacts

Cumulative impacts associated with construction operation of the proposal and other major projects in the area have been considered and are discussed in **Table 6.3**. These projects are in varying stages of delivery and planning.

Interaction of the proposal with other projects in the study area and surrounding suburbs may change the land use, property and socio-economic impacts or benefits of the proposal. During construction, cumulative impacts with other projects would mainly relate to impacts on access and connectivity, resulting in:

- Extended periods of traffic disruptions for motorists, public transport users, cyclists and commercial vehicle movements, due to the consecutive delivery of nearby projects
- An increase in traffic disruptions (for example, longer delays and disruptions) due to roadworks at multiple locations and construction traffic associated with construction haulage and workers for multiple construction projects.

Positive impacts may occur for local employment and local businesses due to an increase in construction related jobs, providing employment opportunities for local people and opportunities for skills development across multiple construction projects. An increase in the number of construction workers within the study area and surrounding suburbs for multiple projects may also have positive impacts for some businesses through increased customers and trade from construction workers and new business opportunities.

Overall, the contribution of the proposal to cumulative impacts on communities, business and industry in the study area is expected to be minor, considering construction work be managed through the implementation of a range of environmental management measures detailed in **Section 7**.

Table 6.3 Assessment of potential cumulative impact for relevant identified projects

Project (approval status)	Relevance in consideration of cumulative impact	Potential cumulative impact
M1 Pacific Motorway to Raymond Terrace	Located about one kilometre north of the proposal and directly alongside the proposal	This road project is currently in planning. Transport plans to construct a new segment of the M1 Pacific Motorway between Tarro and Raymond Terrace.

Project (approval status)	Relevance in consideration of cumulative impact	Potential cumulative impact
Upgrade (In planning)	to the east of the Hunter Rive. Potential to be consecutive (back to back) construction and concurrent (simultaneous) operation.	<p>During construction, potential cumulative impacts would mainly result from traffic changes and increased construction traffic, resulting in extended periods of delays and disruptions for road users.</p> <p>Construction activities would have benefits for local businesses due to increased demand for goods and services to support construction activities. Positive impacts may also occur for local employment due to an increase in construction related jobs, providing employment opportunities for local people and opportunities for skills development across multiple construction projects.</p> <p>The proposal plans to use land zoned for environmental conservation for a construction facility which is also proposed to be used as a temporary construction facility for the M1 Pacific Motorway to Raymond Terrace Upgrade project. This land is generally highly disturbed and has no or limited vegetation and an existing access track provides access to grazing land north of Purgatory Creek. Use of this land for the proposal would extend the duration of impact on this land use, although this is not expected to impact on the future use of this land for environmental conservation.</p> <p>Combined with the proposal, the project would support improved access and connectivity between Newcastle and the NSW central and northern coasts.</p>
Lower Hunter Freight Corridor (In planning)	The investigation area includes Hexham at the south east of the project and M1 Pacific Motorway and Lenaghans Drive at the south west of the proposal.	As corridor options and environmental assessment are not available for the LHFC, the cumulative impacts associated with the construction or operation of the project are unknown.

## 6.6 Evaluation of significance

Table 6.4 and Table 6.5 summarises potential land use, property and socio-economic impacts of the project's design construction and operation. The level of impact significance is also provided based on the evaluation framework outlined in Section 3.1. This considers:

- The sensitivity of receptors (that is, communities, businesses, business clusters, social infrastructure, residences)
- Magnitude of the proposed works.

The level of impact significance is presented without mitigation and with the mitigation and management measures. Further detail on proposed mitigation measures is provided in Section 7.



Table 6.4 Evaluation of significance – construction

Summary of impact	Impact significance (without mitigation)			Management measure	Impact significance (with mitigation)		
	Sensitivity	Magnitude	Significance		Sensitivity	Magnitude	Significance
<b>Property</b>							
Temporary lease of land for temporary construction facilities	Low	Negligible	Negligible	Not required	Low	Negligible	Negligible
<b>Land use</b>							
Temporary use of industrial land uses for temporary construction facilities	Low	Negligible	Negligible	Not required	Low	Negligible	Negligible
Temporary use of vacant land uses temporary construction facilities	Low	Low	Low	Not required	Low	Low	Low
<b>Population and demography</b>							
Construction of the proposal is not expected to change population and demography in the study area	-	-	-	Not required	-	-	-
<b>Employment and training</b>							
Construction of the proposal is not expected to negatively impact on employment and training	-	-	-	Not required	-	-	-
<b>Business and industry</b>							
Traffic disruptions and local access changes due to road works	High	Moderate	Moderate-high	▪ Implementation of traffic management measures	High	Low	Moderate

Summary of impact	Impact significance (without mitigation)			Management measure	Impact significance (with mitigation)		
	Sensitivity	Magnitude	Significance		Sensitivity	Magnitude	Significance
Increase noise, dust and construction traffic impacting on business amenity.	Low	Moderate	Moderate-low	<ul style="list-style-type: none"> <li>Implementation of construction noise, dust and traffic management measures</li> </ul>	Low	Low	Low
<b>Community values</b>							
Changes to local amenity impacting on use and enjoyment of nearby properties	Moderate	Moderate	Moderate	<ul style="list-style-type: none"> <li>Implementation of construction noise, dust and traffic management measures</li> </ul>	Moderate	Low	Moderate-low
Impacts of evening and night-works on night-time amenity of residential uses	High	High	High	<ul style="list-style-type: none"> <li>Implementation of noise management measures</li> <li>Implementation of measures to manage potential light spill</li> </ul>	High	Moderate	Moderate-high
Construction noise impacts on sleeping patterns and health and wellbeing	High	Moderate	Moderate-high	<ul style="list-style-type: none"> <li>Implementation of noise management measures</li> </ul>	High	Low	Moderate
Construction dust impacts on health and wellbeing	Moderate	Moderate	Moderate	<ul style="list-style-type: none"> <li>Implementation of dust management measures</li> </ul>	Moderate	Negligible	Negligible
Potential impacts on community values relating to the environment due to construction of Ironbark Creek bridge	Moderate	Low	Moderate-low	<ul style="list-style-type: none"> <li>Minimise extent of proposal footprint and clearing of vegetation required</li> </ul>	Moderate	Low	Moderate-low
Impacts on community perceptions of road safety due to increased construction traffic	Moderate	Low	Moderate-low	<ul style="list-style-type: none"> <li>Implementation of traffic management measures</li> </ul>	Low	Low	Low

Summary of impact	Impact significance (without mitigation)			Management measure	Impact significance (with mitigation)		
	Sensitivity	Magnitude	Significance		Sensitivity	Magnitude	Significance
<b>Social infrastructure</b>							
Newcastle Golf Practice Centre	Low	Negligible	Negligible	Not required	Low	Negligible	Negligible
Disruption to use of the Foreshore Reserve at Hexham	Low	Moderate	Moderate-low	<ul style="list-style-type: none"> <li>Implementation of construction noise, dust and traffic management measures</li> <li>Maintain access for users of the reserve</li> </ul>	Low	Low	Low
Disruption to use of Hexham Bowling Club	Moderate	Moderate	Moderate	<ul style="list-style-type: none"> <li>Implementation of construction noise, dust and traffic management measures</li> <li>Minimise extent of roadside parking affected by the proposal</li> </ul>	Moderate	Low	Moderate-low
Disruption to use of Hexham Park	Moderate	Moderate	Moderate	<ul style="list-style-type: none"> <li>Implementation of construction noise, dust and traffic management measures</li> </ul>	Moderate	Low	Moderate-low
Disruption to use of the Church at Old Maitland Road	Moderate	Moderate	Moderate	<ul style="list-style-type: none"> <li>Implementation of construction noise, dust and traffic management measures</li> </ul>	Moderate	Low	Moderate-low
Disruption for residents of Calvary St Joseph's Calvary Retirement Community	High	Low	Moderate	<ul style="list-style-type: none"> <li>Implementation of construction noise, dust and traffic management measures</li> </ul>	Moderate	Low	Moderate-low

Summary of impact	Impact significance (without mitigation)			Management measure	Impact significance (with mitigation)		
	Sensitivity	Magnitude	Significance		Sensitivity	Magnitude	Significance
Disruption to peoples' use of Sandgate Cemetery for reflection and remembrance of loved ones	Moderate	Low	Moderate-low	<ul style="list-style-type: none"> <li>Implementation of construction noise, dust and traffic management measures</li> </ul>	Low	Low	Low
<b>Access and connectivity</b>							
Disruptions and delays for motorists and other road users	High	High	High	<ul style="list-style-type: none"> <li>Implementation of traffic management measures</li> </ul>	High	Moderate	Moderate-high
Impacts on public transport users due to traffic disruptions and bus stop changes	Moderate	Moderate	Moderate	<ul style="list-style-type: none"> <li>Implementation of traffic management measures</li> </ul>	Moderate	Low	Moderate-low
Changes to property access near construction works	Moderate	Low	Moderate-low	<ul style="list-style-type: none"> <li>Maintain access to properties during construction</li> </ul>	Moderate	Negligible	Negligible
Impacts on emergency services due to temporary road changes	High	Moderate	Moderate-high	<ul style="list-style-type: none"> <li>Implementation of traffic management measures to maintain access for emergency vehicles</li> <li>Communication with emergency services about proposed access changes</li> </ul>	High	Low	Moderate

Table 6.5 Evaluation of significance – operation

Summary of impact	Impact significance (without mitigation)			Management measure	Impact significance (with mitigation)		
	Sensitivity	Magnitude	Significance		Sensitivity	Magnitude	Significance
<b>Property</b>							
Acquisition of private property for the proposal	Moderate	Negligible	Negligible	Not required	Moderate	Negligible	Negligible
<b>Land use</b>							
The proposal is not expected to directly impact on land use in the study area	-	-	-	Not required	-	-	-
<b>Population and demography</b>							
The proposal would not cause direct changes to population and demography	-	-	-	Not required	-	-	-
<b>Employment and training</b>							
Operation of the proposal is not expected to negatively impact on employment and training	-	-	-	Not required	-	-	-
<b>Business and industry</b>							
Partial acquisition of one private commercial property at Hexham	Moderate	Negligible	Negligible	Not required	Moderate	Negligible	Negligible
Changes in access routes for staff, customers and deliveries of some businesses	Low	Low	Low	Not required	Low	Low	Low

Summary of impact	Impact significance (without mitigation)			Management measure	Impact significance (with mitigation)		
	Sensitivity	Magnitude	Significance		Sensitivity	Magnitude	Significance
<b>Community values</b>							
Health and wellbeing impacts associated with traffic using the U-turn facility on local roads such as Shamrock Street	Moderate	Low	Moderate-low	<ul style="list-style-type: none"> <li>Implementation of mitigation measures outlined in the <i>Hexham Straight Widening Noise and Vibration Assessment (SLR, 2021)</i>.</li> </ul>	Moderate	Low	Moderate-low
Impacts on perceptions of road safety due to traffic using the U-turn facility at Shamrock Street	High	Moderate	Moderate-high		High	Moderate	Moderate-high
<b>Social infrastructure</b>							
Loss of permanent access to the area near Ironbark Creek that is used informally for recreational fishing	Low	Low	Low	<ul style="list-style-type: none"> <li>Prior to closure, notify local communities about potential impacts and alternate facilities</li> </ul>	Low	Low	Low
Impacts on users of facilities on Ash Island (for example, the Rainforest Walk to Riverside Park and Kooragang Wetlands Information Centre) due to access changes	Moderate	Low	Moderate-low	<ul style="list-style-type: none"> <li>Implement road signage about proposed access changes</li> </ul>	Moderate	Low	Moderate-low
<b>Access and connectivity</b>							
Changes to local routes through the closure of the median and restrictions on some right turn movements along Maitland Road	Moderate	Moderate	Moderate	<ul style="list-style-type: none"> <li>Implement road signage about proposed access changes</li> <li>Notification about proposed access changes prior to implementation</li> </ul>	Moderate	Low	Moderate-low

Summary of impact	Impact significance (without mitigation)			Management measure	Impact significance (with mitigation)		
	Sensitivity	Magnitude	Significance		Sensitivity	Magnitude	Significance
Access impacts at Shamrock Street due to the introduction of the U-turn facility	Moderate	Moderate	Moderate	<ul style="list-style-type: none"> <li>Implement road signage about proposed access changes</li> </ul>	Moderate	Moderate	Moderate
Operation of the proposal would not result in negative impacts on other transport users (for example, public transport commuters, pedestrians and cyclists)	-	-	-	Not required	-	-	-

## 7. Mitigation measures

Recommended safeguards and mitigation measures to manage land use, property and socio-economic impacts are summarised in **Table 7.1**. These measures should be incorporated into relevant Environmental Management Plans (EMPs) during construction and operations.

Additional measures relevant to the management of land use, property and socio-economic impacts are also outlined in other specialist assessments completed for the proposal, including:

- *Hexham Straight Widening Traffic and Transport Assessment* (Jacobs, 2021a)
- *Hexham Straight Widening Noise and Vibration Assessment* (SLR, 2021)
- *Hexham Straight Widening Biodiversity Assessment Report* (Jacobs, 2021b)
- *Hexham Straight Widening Urban Design, Landscape Character and Visual Amenity Assessment* (Tract, 2021)
- *Hexham Straight Widening Air Quality Assessment* (Jacobs, 2021e).

Table 7.1 Mitigation measures

Impact	Mitigation measure	Responsibility	Timing
Community consultation	<p>A Community Communication Strategy (CCS) will be prepared for the proposal to facilitate communication with the local community including relevant Government agencies, Councils, adjoining affected landowners and businesses, residents, motorists and other relevant stakeholders that may be affected by the proposal. The strategy will:</p> <ul style="list-style-type: none"> <li>▪ Identify people, businesses and organisations to be consulted during the delivery of the proposal</li> <li>▪ Set out procedures and mechanisms for the regular engagement with local businesses and organisations (for example, around local events) and distribution of information about the proposal</li> <li>▪ Outline mechanisms to keep relevant stakeholders updated on site construction activities, schedules and milestones</li> <li>▪ Outline avenues for the community to provide feedback (including a 24-hour, toll free project information and complaints line) or to register complaints and through which Transport will respond to community feedback</li> <li>▪ Outline a process to resolve complaints and issues raised.</li> </ul>	Transport/ Contractor	Prior to construction
Property acquisition	All partial and full acquisitions and associated property adjustments will be carried out in accordance with the requirements of the <i>Land Acquisition (Just Terms Compensation) Act</i>	Transport	Prior to construction



Impact	Mitigation measure	Responsibility	Timing
	1991 and the Land Acquisition Reform 2016 in consultation with landowners. This will include the provision of monetary compensation determined in accordance with the provisions of the Act.		
	Property adjustments will be completed in consultation with property owners/business managers.	Transport/ Contractor	Prior to construction/ during construction
Business impacts	Access will be maintained to local businesses near to construction work. Where temporary access changes are proposed, these will be agreed with the affected business owner.	Contractor	Construction
Social infrastructure	Communication will be undertaken with local communities and recreational fishers about changes to the area near Ironbark Creek that is used informally for recreational fishing, including temporary restrictions during construction and permanent removal of the informal vehicle access road.	Transport	Prior to construction
Emergency vehicle access	Access for emergency vehicles will be maintained at all times during construction. Any site-specific requirements will be determined in consultation with the relevant emergency services agency.	Contractor	Construction
Roadside tributes	A review will be undertaken of the corridor prior to construction to confirm the presence of roadside memorials.	Contractor	Prior to construction
	Relocation or removal of roadside tributes will be carried out in accordance with Roads and Maritime <i>Roadside Tribute Guidelines</i> (September 2016).	Contractor	Construction

## 8. Conclusion

### 8.1 Overview of potential impacts in the REF area

This report assesses potential land use, property and socio-economic impacts associated with the construction and operation of the Hexham Straight Widening. Maitland Road is a critical link from the Port of Newcastle to the National Land Transport Network and is among the busiest transport corridors carrying some of the highest traffic volumes in the Hunter. The proposal is required to reduce congestion and improve safety along Hexham Straight during peak travel times.

Existing land uses in the study area comprise mainly industrial and environmental uses, with a small number of residential uses, community facilities and commercial uses. There were 435 residents in the study area at the 2016 Census. More broadly, about 21,668 residents lived in communities within the study area and surrounding suburbs in 2019. About 14,295 people worked within the study area and surrounding suburbs.

Temporary leases would be required over some properties for temporary construction facilities such as site compounds and stockpile sites. Four locations have been identified for proposed temporary construction facilities, with the exact sites to be confirmed through the detailed design phase. These are mainly located within existing industrial areas and use of sites within these areas for temporary construction facilities would generally be consistent with surrounding industrial land uses.

Once operational, the proposal would mainly be within the existing road corridor for Maitland Road, with direct property impacts generally limited to partial acquisition of one private property comprising commercial use; an area of Crown land at Old Maitland Road; land within the Main North Rail Line corridor owned by Transport and maintained by ARTC; and vacant land owned by Transport next to the Maitland Road connection with Hexham Bridge. The partial acquisition of the commercial property would not impact any commercial functions or change existing commercial operations on this property.

During construction, the project would have positive impacts for local employment and businesses and industry. Other impacts on communities, business and industry during the construction phase would mainly be associated with:

- Direct and indirect employment opportunities for communities in the study area and surrounding LGAs through the creation of direct employment opportunities during construction
- Disruptions for motorists and road users during construction due to temporary lane changes and reduced speed limits that have potential to cause delays for customers, staff and deliveries accessing businesses in the study area. This would potentially inconvenience some people accessing businesses near the proposal
- Temporary changes to local amenity for occupants of residential and commercial properties, and users of community facilities near to construction works. These temporary changes would, possibly impact on individuals' use and enjoyment of these properties, particularly within outdoor areas
- Noise and light spill from night works, potentially impacting night-time amenity at residential properties closest to these works and impacts on health and wellbeing due to sleep disturbance or disruptions to sleeping patterns
- Dust from construction activities, resulting in possible effects on the health and wellbeing of some people near to construction works who may be more sensitive to changes in air quality
- Increased noise, dust and construction traffic and access changes impacting on users and staff of community services and facilities, such as Hexham Bowling Club, Hexham Park, the Church at Old Maitland Road, and Calvary St Joseph's Retirement Community
- Increased construction traffic on roads within the study area and changes to road conditions, impacting on road users including private and commercial motorists, cyclists and public transport users.

Once operational, the proposal would enhance access and connectivity for residents, workers, businesses and freight in the study area and surrounding LGAs, supporting future growth and development of employment areas and strategic centres.

The environmental management measures identified in **Section 7** would generally be effective in mitigating potential land use, property and socio-economic impacts of the proposal.

The main impacts on communities, business and industry from the proposal's operation would mainly be associated with changes in local access due to the restriction of right-turn movements, resulting in changes to local routes and increasing travel distance required to access residential properties, businesses and community facilities. While these changes are likely to be an inconvenience for motorists currently making these movements, these changes would support improved road safety for road users, and on balance it is considered that the impacts associated with increased travel distances and travel time would be outweighed by the improved safety outcomes for motorists and local communities.

Impacts on communities and businesses would mainly be managed through the implementation of measures relevant to other environmental matters such as noise and vibration, air quality, traffic and transport, and visual amenity. Access to local businesses and access for emergency vehicles would be maintained during construction and operation. All partial and full acquisitions and associated property adjustments would be carried out in accordance with the requirements of the *Land Acquisition (Just Terms Compensation) Act 1991* and the Land Acquisition Reform 2016 in consultation with landowners. A Community Communication Strategy would also be prepared for the proposal to facilitate communication with the local community, business, and other stakeholders.

Land uses in the study area, including residential uses are currently subject to high levels of road traffic noise and the proposal is not expected to result in an increase in road traffic noise at a level that would be perceptible from current noise levels. Further consideration would be given during future detailed planning to cumulative traffic noise impacts of the proposal and the need for additional noise mitigation measures. Potential changes to traffic at Shamrock Street due to the inclusion of the U-turn facility are not expected to be significant, although traffic using the U-turn facility at Shamrock Street may impact on perceptions of safety for local residents. Vehicle noise and lighting from traffic using the U-turn facility also has potential to impact on the amenity of residential properties in Shamrock Street and affect residents' use and enjoyment of their homes. Noise and lighting from vehicles using the U-turn facility also has potential to disrupt sleep or affect the sleep quality for some individuals, possibly affecting their health and wellbeing.

## **8.2 Overview of potential impacts in the EIS area**

The EIS area does not contain any businesses or residential dwellings.

During construction, potential impacts on land use in the EIS area would mainly result from temporary use of land for construction sites and changes in amenity for some uses near to construction works and temporary construction facilities.

There are no formal social infrastructure facilities within the EIS area, although the area on the southern side of Ironbark Creek Bridge is used informally for recreational fishing. Construction activities are not expected to impact any formal social infrastructure facilities in the wider study area. From the commencement of the construction phase, the proposal would result in the permanent loss of the informal access road to the south of Ironbark Creek, which currently provides vehicular access for recreational fishing. Access to areas within the EIS construction footprint used for recreational fishing would be temporarily disrupted during construction, although access by foot would be maintained to these areas once the proposal is operational.

During construction, a temporary bus stop may be required until the permanent bus stop near the intersection of Maitland Road and Shamrock Street (Stop ID 2322137) is relocated.

The proposal would not result in any direct impacts on the Hunter Wetlands National Park, Hexham Swamp Nature Reserve or Kooragang Nature Reserve, although there is potential for indirect impacts on these natural features.

There would be no impacts on property and land use due to the operation of the EIS area. During operation, impacts to social infrastructure within the EIS area include:

- The bus stop (ID 2322137) located on the southbound carriage way of Maitland Road at the intersection of Maitland Road and Shamrock Street would be permanently relocated. Consultation would be carried out with the affected bus operators during detailed design.
- Vehicle access to the informal fishing spot south of Ironbark Creek Bridge would be removed. There are a number of sites within or near to the study area that provide vehicle access for recreational fishing along the nearby waterways and any impacts from the loss of access to this area for recreational fishing are generally expected to be minor. The area would be able to be accessed by foot once the proposal is operational.

### **8.3 Proposal summary**

In conclusion, travel time savings and enhanced travel reliability provided by the proposal would support improved access and connectivity for local and regional communities, business and industry. This would have long-term benefits and support improved access to employment areas and future growth and development of strategic centres in Greater Newcastle.

## 9. References

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## 10. Acronyms

Acronym	Definition
ABS	Australian Bureau of Statistics
CCS	Community Consultation Strategy
DPIE	NSW Department of Planning, Industry and Environment
CEMP	Construction environment management plan
DPI	Department of Primary Industries
EPA	Environment Protection Authority
ERP	Estimated Resident Population
LEP	Local Environment Plan
LGA	Local government area
M12RT	M1 Extension to Raymond Terrace
NSW	New South Wales
PAH	Polycyclic Aromatic Hydrocarbons
PEI	Preliminary environmental investigation
POEO Act	<i>Protection of the Environment and Operations Act 1997</i>
REF	Review of environmental factors
SA2	Statistical Area Level 2
SEIFA	Socio-Economic Indexes for Areas
SEPP	State Environmental Planning Policy
Transport	Transport for New South Wales

## **Attachment A. Demographic data**



Table A.1 Resident population profile

Indicator	Sandgate SSC	Hexham SSC	Study area	City of Newcastle	NSW
<b>Population and growth</b>					
Total population (2016)	305	130	435	155,411	7,480,228
Same address one year prior to 2016 Census	40.2%	76.2%	50.9%	76.1%	77.4%
Same address five years prior to 2016 Census	28.2%	65.9%	39.4%	52.3%	53.8%
<b>Age profile</b>					
Median age	61 years	50 years	56 years	37 years	38 years
14 years or younger	8.2%	13.1%	9.7%	16.9%	18.5%
15-64 years	37.7%	63.1%	45.3%	67.2%	65.2%
65 years or over	52.1%	27.7%	44.8%	15.9%	16.3%
<b>Cultural diversity</b>					
Aboriginal and/or Torres Strait Islander	7.5%	8.5%	7.8%	3.5%	2.9%
Overseas born	5.6%	5.4%	5.5%	13.9%	27.7%
Main overseas countries of birth	<ul style="list-style-type: none"> <li>▪ Scotland (1.3%)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pakistan (3.1%)</li> <li>▪ England (2.3%)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pakistan (0.9%)</li> <li>▪ Scotland (0.9%)</li> <li>▪ England (0.7%)</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ England (2.1%)</li> <li>▪ China (excl SARs and Taiwan) (1.1%)</li> <li>▪ New Zealand (1.0%)</li> <li>▪ India (0.7%)</li> <li>▪ Philippines (0.5%)</li> </ul>	<ul style="list-style-type: none"> <li>▪ China (excl SARs and Taiwan) (3.1%)</li> <li>▪ England (3.0%)</li> <li>▪ India (1.9%)</li> <li>▪ New Zealand (1.6%)</li> <li>▪ Philippines (1.2%)</li> </ul>
Speaks language other than English at home	4.9%	5.4%	5.1%	10.1%	25.2%
Main non-English languages spoken at home	-	<ul style="list-style-type: none"> <li>▪ Urdu (5.4%)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Urdu (1.6%)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mandarin (1.2%)</li> <li>▪ Macedonian (0.7%)</li> <li>▪ Italian (0.5%)</li> <li>▪ Greek (0.5%)</li> <li>▪ Arabic (0.5%)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mandarin (3.2%)</li> <li>▪ Arabic (2.7%)</li> <li>▪ Cantonese (1.9%)</li> <li>▪ Vietnamese (1.4%)</li> <li>▪ Greek (1.1%)</li> </ul>
Speaks English not well or not at all	1.3%	0.0%	0.9%	1.6%	4.5%

Indicator	Sandgate SSC	Hexham SSC	Study area	City of Newcastle	NSW
<b>Dwellings and households</b>					
Total dwellings	86	65	151	66,471	2,889,057
Occupancy rate	73.3%	87.7%	79.5%	90.2%	90.1%
Separate house	92.1%	100.0%	95.8%	71.1%	66.4%
Semi-detached dwelling, flat or apartment	0.0%	0.0%	0.0%	28.1%	32.1%
Other dwelling	4.8%	0.0%	2.5%	0.4%	0.9%
Owner occupied (owned outright or owned with a mortgage)	44.4%	63.2%	53.3%	61.2%	64.5%
Rented (total)	47.6%	35.1%	41.7%	35.5%	31.8%
Rented (State housing authority)	0.0%	0.0%	0.0%	5.8%	4.0%
Median mortgage repayment (monthly)	1,517	1,300	1,409	\$1,768	\$1,986
Median rent (weekly)	250	245	248	\$340	\$380
Households with mortgage repayments greater than or equal to 30% of household income***	0.0	12.8	12.8	5.4%	7.4%
Households with rent payments greater than or equal to 30% of household income***	21.4	10.9	16.5	14.2%	12.9%
<b>Families</b>					
Total families	39	31	70	39,068	1,940,226
Couple family no children	25.6%	38.7%	31.4%	38.4%	36.6%
Families with children under 15 years	51.3%	29.0%	41.4%	37.4%	38.2%
Family with no children under 15 years	15.4%	19.4%	17.1%	22.1%	23.5%
<b>Need for assistance</b>					
Has need for assistance	49.8%	10.0%	37.9%	5.9%	5.4%
<b>Income and employment</b>					
Median total household income (weekly)	\$922	\$916	\$919	\$1,368	\$1,486
Median total personal income (weekly)	\$505	\$437	\$471	\$660	\$664
Lower income households (less than \$650 per week)	17.9%	9.7%	14.3%	8.7%	9.5%

Indicator	Sandgate SSC	Hexham SSC	Study area	City of Newcastle	NSW
Higher income households (more than \$2500 per week)	17.9%	0.0%	10.0%	26.8%	27.7%
Total labour force	61	47	108	78,864	3,605,881
Labour force participation	22.3%	42.0%	28.1%	61.0%	59.2%
Unemployment	21.3%	6.4%	14.8%	7.4%	6.3%
<b>Vehicle ownership and travel</b>					
No motor vehicles	6.3%	0.0%	3.3%	9.3%	9.2%
One motor vehicle	39.7%	33.3%	36.7%	37.6%	36.3%
Two or more vehicles	42.9%	56.1%	49.2%	49.7%	50.8%

Sources:

Based on ABS 2016 Census of Population and Housing General Community Profile (unless otherwise indicated)

\*\*\* ABS (2016), 2016 Census of Population and Housing QuickStats

Table A.2 Worker population and business profile

Indicator	Beresfield-Hexham SA2	Shortland-Jesmond SA2	Study area and surrounding suburbs	City of Newcastle	NSW
<b>Worker population</b>					
Total number of workers	6,766	7,529	14,295	97,327	3,358,175
Average commuting distance to place of work (km)^	23.2	17.1	20.2	16.3	16.1

Sources:

Based on ABS 2016 Census of Population and Housing Worker Profile (unless otherwise indicated)

^ABS (2018) Census of Population and Housing: Commuting to Work – More Stories from the Census, 2016, Catalogue No. 2071.0.055.001, Commuting Distance from Place of Usual Residence and Commuting Distance to Place of Work

Table A.3 Population projections, 2041

Locality	As of 30 June		Average annual population change (2016-2041)
	2016	2041	
City of Newcastle	160,707	199,680	0.9%
NSW	7,732,858	10,572,696	1.3%

Source: Based on NSW DPIE, 2019

Table A.4 Family Composition, 2016

Locality	Couple family with no children	Families with children under 15 years	Family with no children under 15 years	Total families
Study area	31.4%	41.4%	17.1%	70
City of Newcastle	38.4%	37.3%	22.1%	39,068
NSW	36.6%	38.3%	23.5%	1,940,226

Source: Based on ABS 2016 Census of Population and Housing, G25

## Attachment B. Businesses within the study area

ID number	Business	Business type
B1	Newcastle Golf Practice Centre	Sport and recreation
B2	Caltex	Retail – service station
B3	Koala Glass	Industrial/manufacturing
B4	105.3 NEWFM & 1143 2HD Studios	Media
B5	Crawfords Frontline	Transport services
B6	Adbri Masonry Newcastle	Industrial/manufacturing
B7	Sandgate Autos	Retail – automotive
B8	HL Mullane & Son	Construction
B9	InfraBuild Recycling	Industrial – recycling centre
B10	McDonalds	Café/restaurant
B11	Shell	Retail – service station
B12	Oliver's Real Food	Café/restaurant
B13	Hexham Bowling Club	Sport and recreation
B14	Industrial Galvanizers Corporation Pty	Industrial/manufacturing
B15	Gilbert & Roach Trucks Newcastle	Retail – automotive
B16	QCC Resources	Professional services
B17	ASV Sales & Services	Equipment sales and hire – construction
B18	Downer Group	Construction
B19	JCB Newcastle	Equipment sales and hire – construction
B20	Kentan Machinery	Machinery and equipment sales
B21	Ag-Pride	Machinery and equipment sales
B22	Hexham Truck Repairs	Auto repairs and servicing
B23	Truckline Newcastle	Retail – automotive
B24	Snowlist Pty Ltd	Auto repairs and servicing
B25	Daydream Spas	Retail
B26	Diesel Pro	Auto repairs and servicing
B27	Max Lynch Group	Freight forwarding
B28	Hexham Caravan Repairs and Spares	Auto repairs and servicing
B29	Ampol Hexham Diesel Stop	Retail – service station
B30	BP Truckstop	Retail – service station
B31	Reliance Hexham Pty Ltd	Industrial/manufacturing
B32	Milltech Martin Bright	Industrial/manufacturing
B33	CEG Rentals	Retail – automotive
B34	Slattery Auctions and Valuations	Auction house
B35	WEARX	Mining company
B36	Brancourts Dairy	Industrial/manufacturing – food processing
B37	Aurizon Provisioning	Professional services
B38	Access Hire Newcastle	Equipment sales and hire – industrial
B39	Generators Australia Newcastle	Equipment sales and hire – industrial

## **Attachment C. Property acquisition**



**LEGEND**

- LOT 1 CADASTRAL LOT AND DP NUMBER
- DP 573254
- DP EXISTING CADASTRAL BOUNDARY
- AREA OF ACQUISITION - PARTIAL
- PROPOSED BOUNDARY

SETOUT TABLE		
POINT	EASTING	NORTHING
A1	377681.849	6364770.775
A2	377680.992	6364779.385
A3	377684.909	6364788.477
A4	377696.046	6364793.387
A5	377719.265	6364786.413

**NOTES**

1. EXISTING CROWN LAND AND ROAD CORRIDOR BOUNDARY IN THIS AREA ARE TO BE PROVIDED
2. AREA OF ACQUISITION IS APPROXIMATE. TO BE CONFIRMED ONCE EXISTING BOUNDARIES ARE AVAILABLE.

PROPERTY ADDRESS:	TO BE PROVIDED
LOT/DP:	1/623278
OWNERS NAME:	THE SHELL COMPANY OF AUS LTD

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50mm ON A3 SIZE ORIGINAL

<p>DRAWING FILE LOCATION \ NAME - PLOT DATE \ TIME - PLOT BY          C:\users\bojjs\appdata\local\projectwise\jacobs_anz_ie\d0349919\IA301100-HSW-PQ-DRG-0101-0103.dwg - 11/28/2020 11:20:31 AM - Bojjs</p>	<p>PROJECT BREAKDOWN STRUCTURE</p>	<p>JACOBS DOCUMENT NUMBER IA301100-HSW-PQ-DRG-0101</p>	<p>PLOT DATE / TIME 28/11/2020</p>	<p>PLOT BY Bojjs</p>	<p>CLIENT  <b>Transport for NSW</b></p>	<p>NEWCASTLE COUNCIL LGA MAITLAND ROAD A43 HEXHAM STRAIGHT WIDENING</p>																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING</th> <th>REV</th> <th>DATE</th> <th>AMENDMENT / REVISION DESCRIPTION</th> <th>APPROVAL</th> </tr> </thead> <tbody> <tr> <td></td> <td>0</td> <td>30.11.2020</td> <td>80% CONCEPT DESIGN</td> <td>F NAPOLITANO</td> </tr> </tbody> </table>	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING	REV	DATE	AMENDMENT / REVISION DESCRIPTION	APPROVAL		0	30.11.2020	80% CONCEPT DESIGN	F NAPOLITANO	<p>SCALES ON A3 SIZE DRAWING</p> <p>SCALE 1:500  AT A3</p>	<p>DRAWINGS / DESIGN PREPARED BY</p> <p style="font-size: 24pt; font-weight: bold; text-align: center;">Jacobs</p> <p style="font-size: 8pt;">Jacobs Group (Australia) Pty Ltd Level 7, 177 Pacific Highway North Sydney, NSW 2060 AUSTRALIA Tel: +61 2 9928 2100 Fax: +61 2 9928 2500 Web: www.jacobs.com</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TITLE</th> <th>NAME</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>DRAWN</td> <td>S BOJJI</td> <td>30.11.2020</td> </tr> <tr> <td>DRG CHECK</td> <td>S GALLOWAY</td> <td>30.11.2020</td> </tr> <tr> <td>DESIGN</td> <td>K PETRI</td> <td>30.11.2020</td> </tr> <tr> <td>DESIGN CHECK</td> <td>T DALEY</td> <td>30.11.2020</td> </tr> <tr> <td>DESIGN MNGR</td> <td>T DALEY</td> <td>30.11.2020</td> </tr> <tr> <td>PROJECT MNGR</td> <td>F NAPOLITANO</td> <td>30.11.2020</td> </tr> </tbody> </table>	TITLE	NAME	DATE	DRAWN	S BOJJI	30.11.2020	DRG CHECK	S GALLOWAY	30.11.2020	DESIGN	K PETRI	30.11.2020	DESIGN CHECK	T DALEY	30.11.2020	DESIGN MNGR	T DALEY	30.11.2020	PROJECT MNGR	F NAPOLITANO	30.11.2020	<p>PREPARED FOR HUNTER REGION ENGINEERING SURVICES NEWCASTLE</p>	<p>HEXHAM STRAIGHT WIDENING PROPERTY ACQUISITION LOT 1 / DP 623278</p>
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**LEGEND**

- LOT 1 CADASTRAL LOT AND DP NUMBER
- DP 573254
- DP EXISTING CADASTRAL BOUNDARY
- AREA OF ACQUISITION - PARTIAL
- PROPOSED BOUNDARY

SETOUT TABLE		
POINT	EASTING	NORTHING
A1	377389.597	6365905.593
A2	377402.947	6365893.505
A3	377406.348	6365883.361
A4	377388.896	6365843.560

**NOTES**

1. EXISTING CROWN LAND AND ROAD CORRIDOR BOUNDARY IN THIS AREA ARE TO BE PROVIDED
2. AREA OF ACQUISITION IS APPROXIMATE. TO BE CONFIRMED ONCE EXISTING BOUNDARIES ARE AVAILABLE.

PROPERTY ADDRESS:	TO BE PROVIDED
LOT/DP:	7002/1052280
OWNERS NAME:	THE STATE OF NSW SOUTH WALES (CROWN LAND)

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											DESIGN CHECK	T DALEY	30.11.2020						
											DESIGN MNGR	T DALEY	30.11.2020	PREPARED FOR HUNTER REGION ENGINEERING SURVICES NEWCASTLE		RMS REGISTRATION No.		PART PQ	
											PROJECT MNGR	F NAPOLITANO	30.11.2020	ISSUE STATUS 80% CONCEPT DESIGN		EDMS No.		SHEET No. PQ-0103 REV 0	