

Appendix L

Socio-economic assessment report

Roads and Maritime Services

**New England Highway upgrade
between Belford and the Golden
Highway**

Socio-economic assessment

Final | 18 April 2017

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 245608

Arup
Arup Pty Ltd ABN 18 000 966 165



Arup
Level 10
201 Kent Street
Sydney NSW 2000
Australia
www.arup.com

ARUP

Document Verification

ARUP

Job title		New England Highway upgrade between Belford and the Golden Highway		Job number		245608	
Document title		Socio-economic assessment		File reference			
Document ref							
Revision	Date	Filename	B2G_SEIA_d1_150916				
Draft 1	23 Sept 2016	Description	First draft				
			Prepared by	Checked by	Approved by		
		Name	Marissa Powell / Jess Tieppo	Leah Howell	Nic Fleury		
		Signature					
Draft 2	23 Dec 2016	Filename	B2G_SEIA_d1_161216				
		Description	Second draft				
			Prepared by	Checked by	Approved by		
		Name	Marissa Powell	Leah Howell	Nic Fleury		
Signature							
Final	24 Mar 2017	Filename	B2G_SEIA_FINAL				
		Description	Final				
			Prepared by	Checked by	Approved by		
		Name	Marissa Powell	Leah Howell	Nic Fleury		
Signature							
Final	18 Apr 2017	Filename	B2G_SEIA_FINAL_ISSUE				
		Description	Final				
			Prepared by	Checked by	Approved by		
		Name	Marissa Powell	Leah Howell	Nic Fleury		
Signature							
Issue Document Verification with Document <input checked="" type="checkbox"/>							

Contents

	Page	
1	Introduction	1
1.1	Background	1
1.2	Report purpose	4
1.3	Assessment methodology	4
1.4	Data sources used to inform assessment	4
1.5	Policy context	5
1.6	Study area	5
1.7	Proposal scoping	9
2	Description of the proposal	10
3	Existing socio-economic environment	12
3.1	Population and demography	12
3.2	Travel	13
3.3	Property and access	13
3.4	Economic	14
3.5	Business and industry	14
3.6	Social infrastructure	17
4	Assessment of social and economic impacts	20
4.1	Construction phase impacts	20
4.2	Operation phase impacts	26
5	Mitigation measures and strategies	29
6	Conclusion	31
7	References	32

Tables

Table 1 Property acquisition

Table 2 Summary of construction related impacts

Table 3 Summary of operational related impacts

Table 4 Management and mitigation measures

Figures

Figure 1 Location of the proposal

Figure 2 Geographic areas studied for the socio-economic assessment – SEIA study area

Figure 3 Geographic areas studied for the socio-economic assessment – Singleton Local Government Area

Figure 4 The proposal

Figure 5 Land zoning

Figure 6 Location of infrastructure (social and other)

Figure 7 Property acquisition map

1 Introduction

1.1 Background

The New England Highway (route A43) forms part of the inland road network between Sydney and Brisbane and is the primary route connecting the Upper Hunter with Maitland and Newcastle. The 887 km highway runs from Hexham near Newcastle in NSW, to Yarraman near Toowoomba in QLD. The 314 km Golden Highway (route B84) starts at the intersection with the New England Highway at Whittingham and provides access through to Dubbo. Both highways are designated B-Double routes used extensively by freight vehicles travelling through to the Port of Newcastle servicing coal mining, grain production and other industries in the Hunter Valley and Central West. Local residents and other travellers also use these highways to access the local population and employment centres of Maitland and Singleton and beyond.

The intersection between the Golden Highway and the New England Highway is currently an at-grade, all movements junction, laid out as a ‘sea gull’ type intersection. Traffic volumes in the vicinity of the intersection have grown steadily during the past 10 years, with traffic counts and analysis indicating a growth rate of two percent per year on average, with this two per cent growth rate exceeded in recent years.

The Golden Highway arm of the intersection is located on the outside of a bend on the New England Highway. Vehicles turning right from the Golden Highway onto the New England Highway do so by crossing through the sea gull layout, with the eastbound merge lane forming a second lane for eastbound traffic on the New England Highway. This right turning traffic includes a significant portion of B-double, high utilisation vehicles transporting goods and materials from the Upper Hunter and Central West to the Port of Newcastle and vehicles diverting onto the Hunter Expressway further east toward Sydney and the central coast.

At peak times queuing and congestion occurs, particularly on the Golden Highway approach to the intersection.

Accident statistics show that there have been a number of accidents related to the right turn manoeuvre onto the New England Highway. Rear end accidents on the approach to the junction along both the New England Highway and Golden Highway as also common. The accident statistics identify that, on average, each month there is an accident at this junction. The number of fatal accidents at this location exceeds the state average.

Given that the highways’ intersection is a key node in the local and regional road network, accidents or construction works that affect its capacity create significant traffic issues for users as there are no alternative routes for local or interurban traffic.

To address these issues, Roads and Maritime Services (Roads and Maritime) propose to upgrade the New England Highway, between Belford and the Golden

Highway to improve safety for motorists, reduce travel times and improve traffic flow in the area.

Key features of the proposal include:

- Widening the New England Highway for around 3.2 km to provide a divided road with two travel lanes in each direction between Belford and the Golden Highway
- Replacing the existing right turn movement from the Golden Highway to the New England Highway with a right turn flyover bridge
- Removal of the Whittingham rest area adjacent to the New England Highway and Golden Highway intersection.

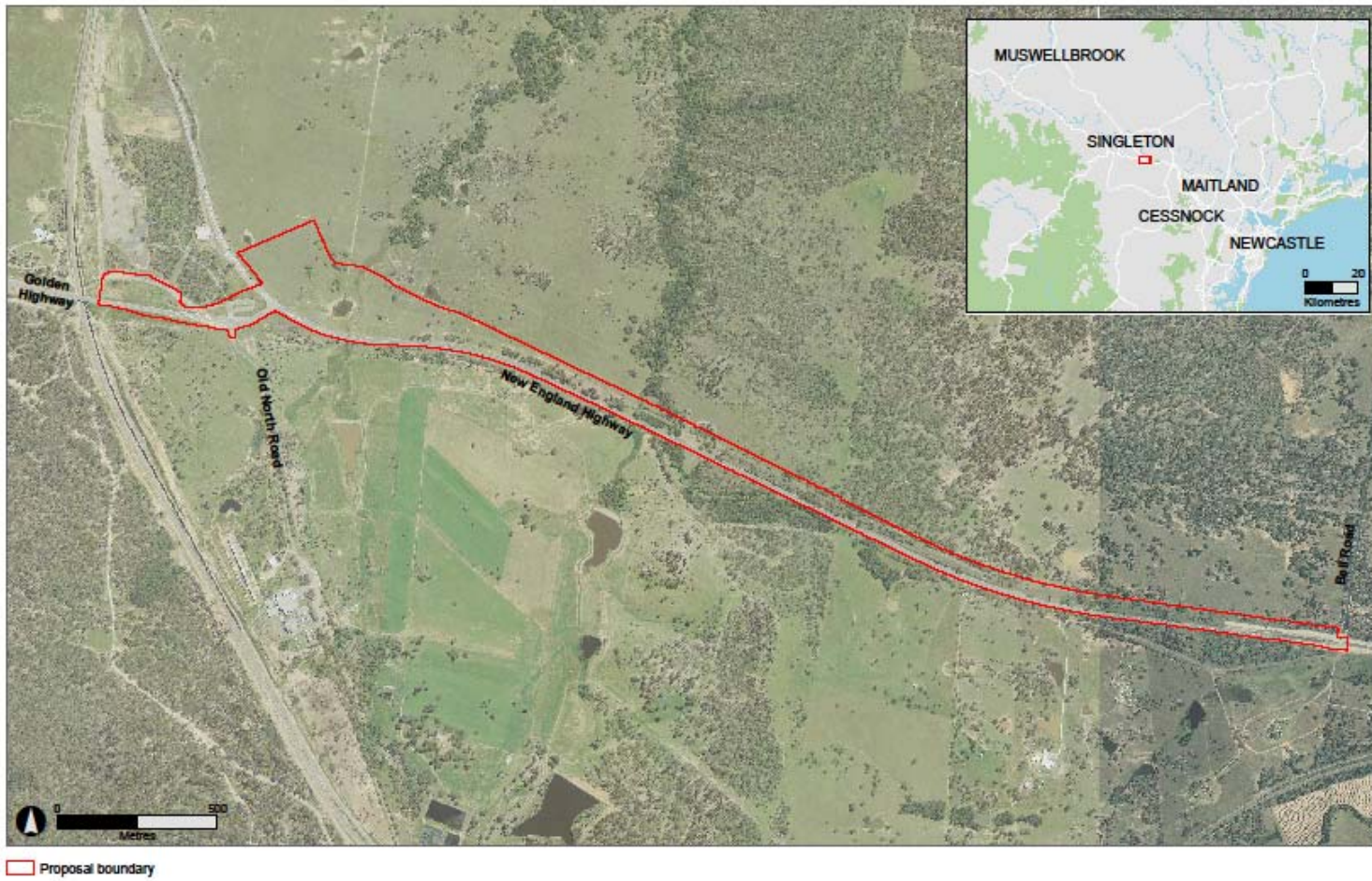


Figure 1 Location of the proposal

1.2 Report purpose

This socio-economic assessment (SEIA) has been prepared to inform the Review of Environmental Factors (REF) for the New England Highway upgrade between Belford and the Golden Highway. The SEIA is required by Roads and Maritime to ensure potential socio-economic impacts have been considered in the proposal's planning phase.

The SEIA:

“...includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, or planned interventions (policies, programs, plans, and projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment” (Vanclay, 2003).

This desktop assessment describes the existing socio-economic environment to provide a basis for predicting likely changes related to the proposal. It then identifies and analyses the likely benefits or impacts of the proposal and assesses the magnitude, duration and likelihood of identified benefits and impacts. It finally identifies mitigation and monitoring measures to avoid, manage or mitigate potential impacts and enhance the project's benefits.

1.3 Assessment methodology

The SEIA has been prepared in accordance with the Roads and Maritime 'Environmental Impact Assessment Practice Note: Socio-economic assessment' (EIA-N05) (the Practice Note). The initial project scoping checklist provided in Table 1 of the Practice Note was used to determine the level of socio-economic assessment required. The proposal is expected to have very localised impacts that would be minor in scale, therefore a 'basic' socio-economic assessment has been completed.

The assessment was carried out at a desktop level and relied on analysis of the socio economic context of the area, including demographic analysis of the population using the 2011 ABS Census data.

1.4 Data sources used to inform assessment

Information used in this SEIA was drawn from a variety of primary and secondary sources. These include:

- Discussions with landowners and local businesses to gain access and local knowledge of the project site
- Technical reports for other topics that may have socio-economic impacts, prepared by external consultants

- Previous Roads and Maritime reports associated with the project such as the Belford to Golden Highway Community Consultation Report (Roads and Maritime Services, 2015)
- State Government planning documentation, such as the Rebuilding NSW Plan
- Singleton Council planning documentation – Singleton Land Use Strategy (SLUS), Singleton Local Environmental Plan 2013 (Singleton LEP) (Singleton Council, 2015), mapping online tools and DA information
- Analysis of the socio economic context of the area, including demographic analysis of the population using the 2011 ABS Census data
- Other demographic data provided by the NSW Government, i.e. Department of Planning and Environment
- NSW Government – Key Freight Route Mapping
- Other technical reports prepared for the project.

1.5 Policy context

The SEIA has also drawn on guidance provided by a range of local, State and Federal policies and plans including:

- NSW State priorities (NSW Government, 2015)
- NSW Long Term Transport Master Plan (Transport for NSW, 2012)
- Hunter Regional Transport Plan (Transport for NSW, 2014)
- State Infrastructure Strategy (NSW Government, 2014)
- Hunter Regional Plan 2036 (NSW Government, 2016)
- New England Highway Draft Corridor Strategy (NSW Government, 2016)
- Golden Highway Corridor Strategy (NSW Government, 2016)
- New England Highway Urban Design Framework (Roads and Maritime, 2016)
- Upper Hunter Strategic Regional Land Use Plan (NSW Government, 2012)
- Singleton Land Use Strategy (Singleton Council, 2008)
- Singleton Local Environment Plan (LEP) (Singleton Council, 2013).

1.6 Study area

The proposal site is located in the Upper Hunter Region, within the Singleton Local Government Area (LGA). The intersection of the New England Highway and Golden Highway is located approximately 10 km from the centre of Singleton, the closest major town. The proposal includes upgrading 3.2 km of the New England Highway from the intersection of the Golden Highway in the east to Bell Road, Belford, in the west.

The SEIA utilises a number of geographic areas to describe the socio-economic environment that may be impacted by the proposal. These include:

- **The proposal site** - as shown in red in Figure 2.
- **SEIA study area** - defined by combining two Statistical Area Level 1 (SA1) areas (1111210 and 1110705) as shown in blue in Figure 2. Given the rural nature of this area, the SA1 areas cover quite a large area. To provide more accurate population and dwelling data related to the proposal area, ABS Mesh Block areas have also been used where relevant (shown in green in Figure 2) for dwelling and population data only.
- **Singleton Local Government Area** - defined by the ABS as the Singleton Local Government Area (LGA). The proposal area sits within the LGA's boundary as shown in yellow in Figure 3. Where relevant, this area has been used for comparative purposes within the SEIA
- **State of NSW** - defined by the ABS as the State of NSW (STE). Where relevant, this area has been used for comparative purposes within the SEIA.

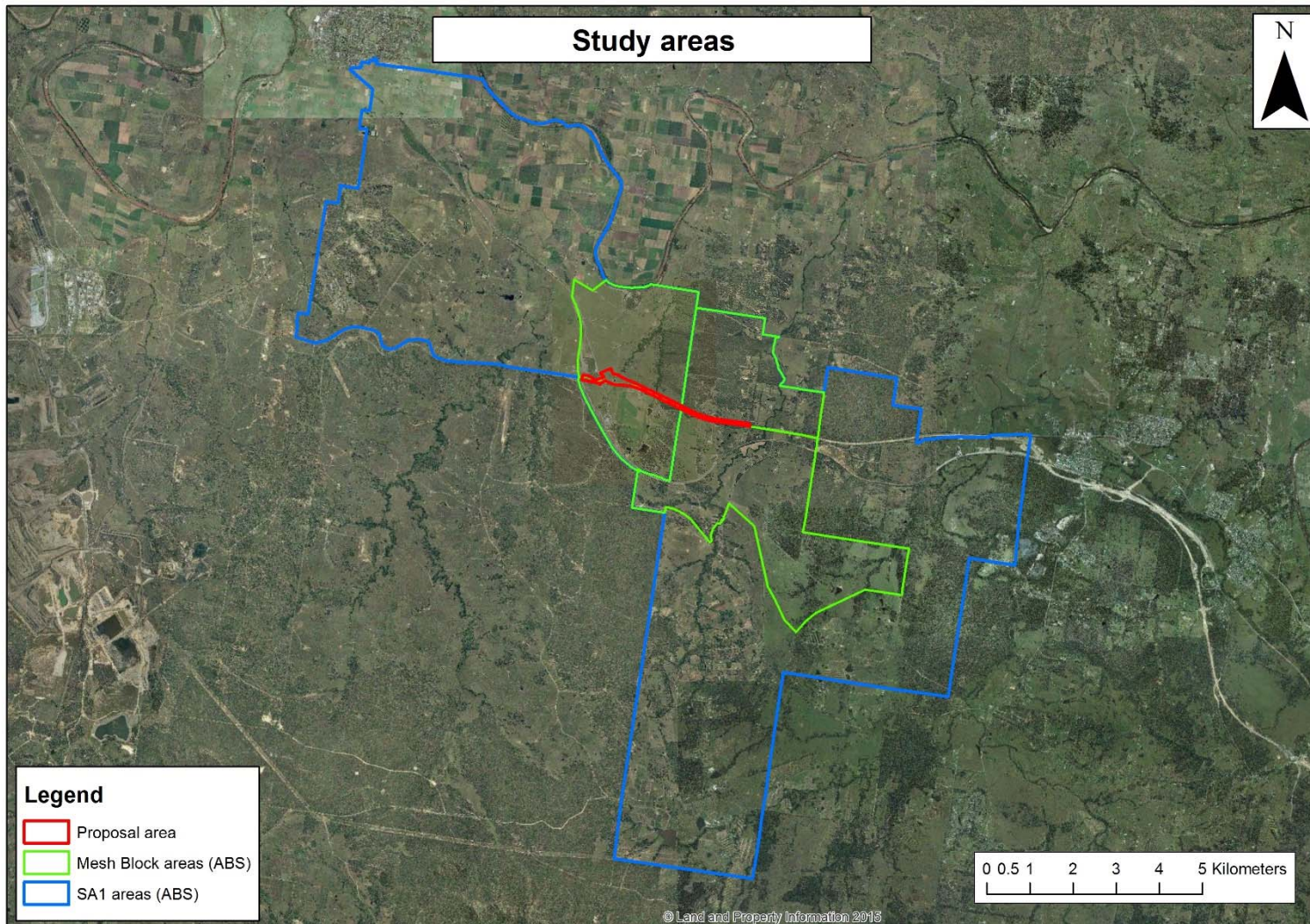


Figure 2 Geographic areas studied for the socio-economic assessment – SEIA study area

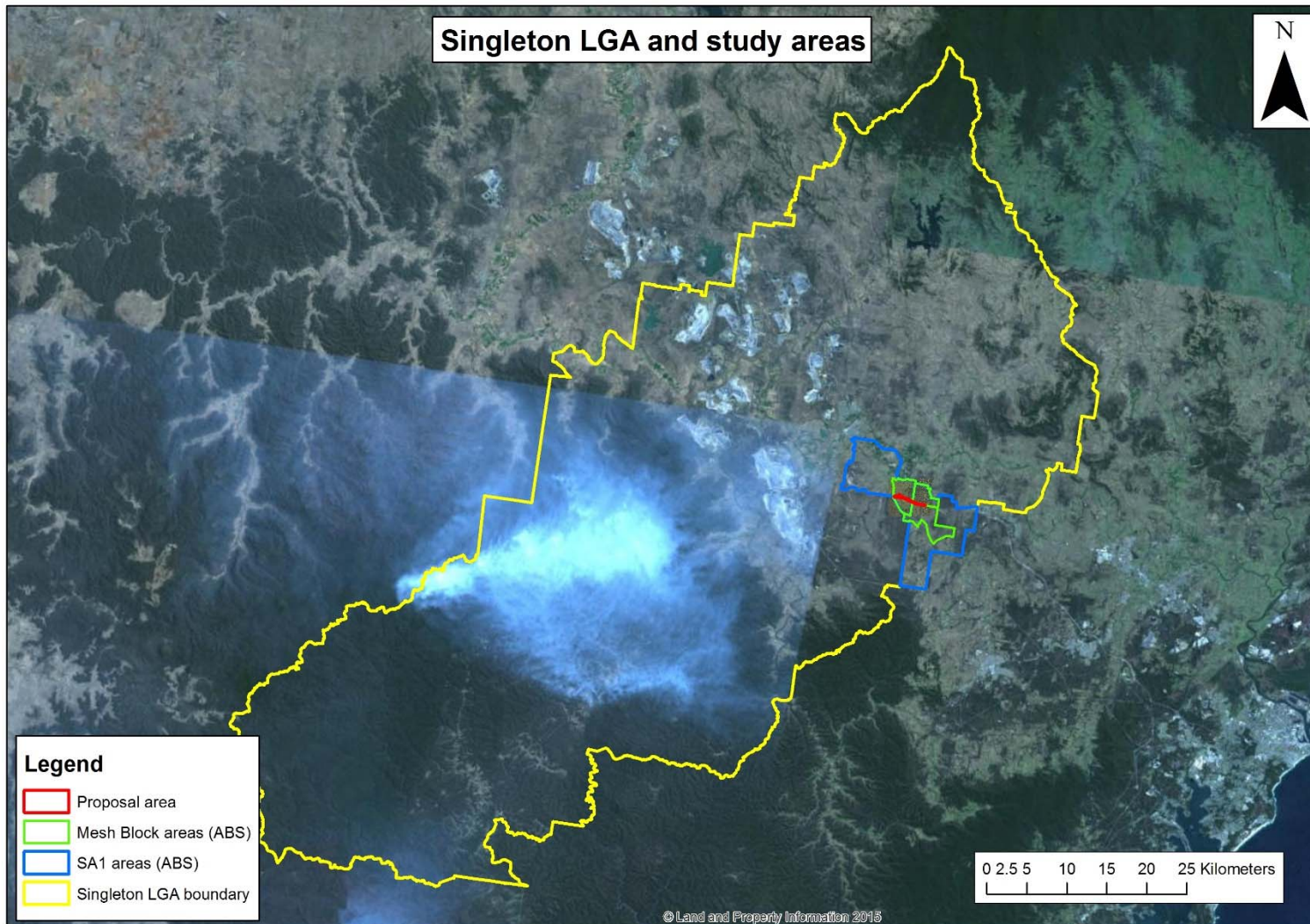


Figure 3 Geographic areas studied for the socio-economic assessment – Singleton Local Government Area

1.7 Proposal scoping

As outlined in the Practice Note, the initial scoping checklist was used to undertake a preliminary review of potential social and economic impacts associated with the proposal. These include:

- Property acquisition. The required land is currently un-developed and zoned IN3 - Heavy Industrial under the Singleton LEP (Singleton Council, 2013)
- Upgrade will preclude right hand turns across the New England Highway
- Potential impacts to Aboriginal heritage.
- Some construction related impacts, mainly associated with traffic flow and local amenity.

Few socio-economic impacts are expected as a result of the proposal, and these would be experienced at a local scale. They would be minor in nature and only experienced during the construction period (except for changes to right hand turn arrangements from the southern side of the New England Highway).

2 Description of the proposal

The proposal includes (as shown in Figure 4):

- Duplication of a 3.2 km section of the New England Highway between Belford and the Golden Highway:
 - Modification of the existing single three lane carriageway to a dedicated two lane westbound carriageway
 - A new two lane 110 km/h eastbound carriageway
 - Provision of median separation between the eastbound and westbound carriageways
- Grade separation of the right-turn movement out of the Golden Highway:
 - Right turn flyover embankment ramps including tie-ins
 - Modification of the existing at grade intersection to remove right turn
 - Two-lane bridge over the existing New England Highway alignment
- Utility adjustment such as; underground high pressure gas, overhead electricity and underground telecommunication conduits
- Provision of a permanent Variable Message Sign (VMS) adjacent to the westbound carriageway at Belford (i.e. opposite the existing eastbound VMS)
- Provision of a CCTV camera at the New England / Golden Highway intersection
- Removal of the Whittingham rest area.

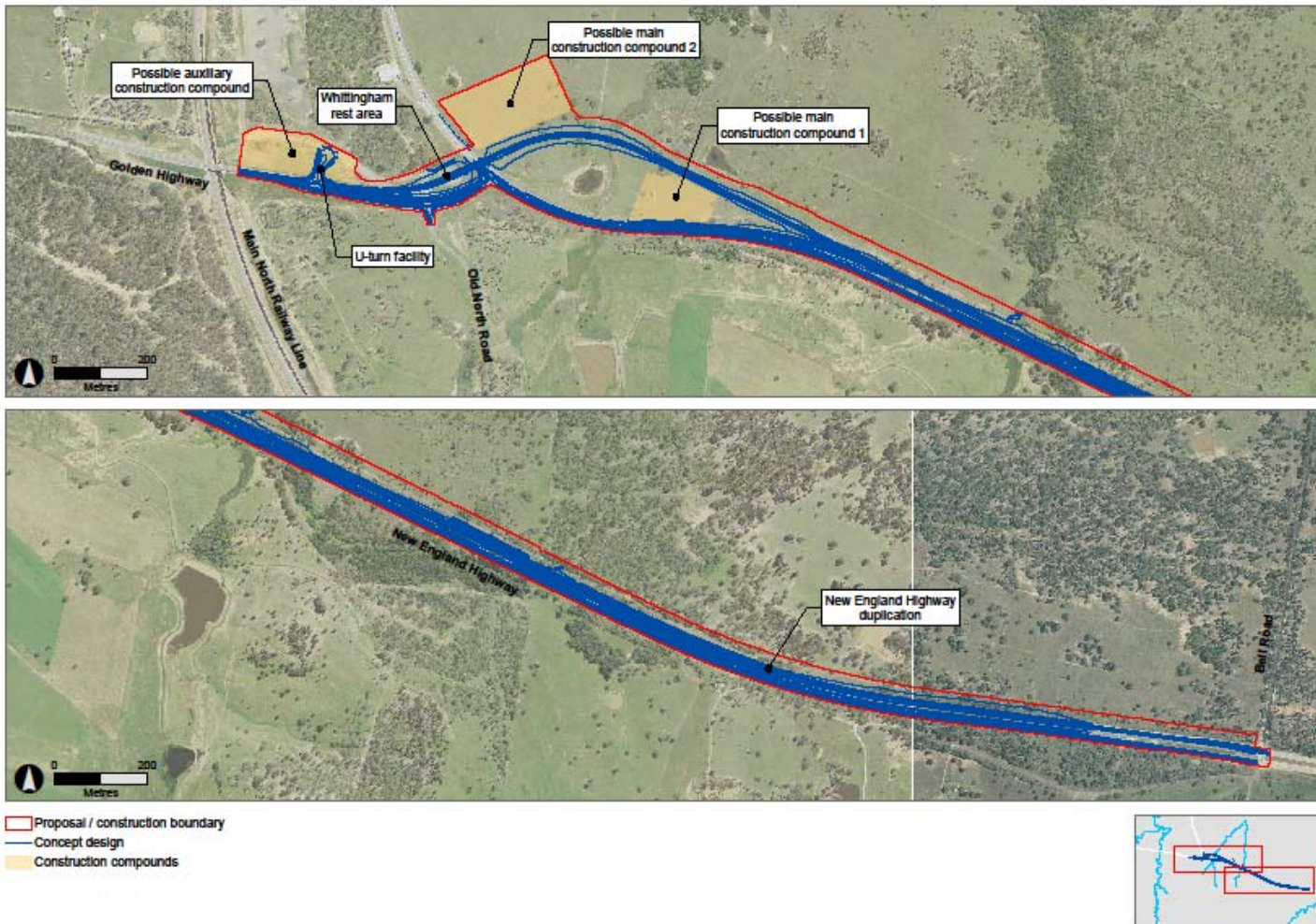


Figure 4 The proposal

3 Existing socio-economic environment

This section of the SEIA provides an overview of the existing conditions within the relevant areas identified in section 1.6. This review has been completed to provide baseline information from which to assess potential impacts on the social and economic environment.

3.1 Regional context

The New England and Golden highways are designated B-Double routes used extensively by freight vehicles travelling through to the Port of Newcastle servicing coal mining, grain production and other industries in the Hunter Valley and Central West. Local residents and other travellers also use these highways to access the local population and employment centres of Maitland and Singleton and beyond.

Within the proposal area, the New England and Gold Highways run through sparsely populated land that is zoned for primary production, heavy industrial and infrastructure land uses.

3.2 Population and demography

- The population of the study area (a combination of the two Statistical Area Level 1 areas described in section 1.6) in 2011 was 906 people. Of these people, 106 were located within the Mesh Block areas in the vicinity of the proposal area (see green area in Figure 2)
- The population of the Singleton LGA in 2011 was 22,694 people. This increased to 23,884 people in 2014 (Singleton Shire Council, 2014) and is projected to grow to 25,600 people by 2021 (Department of Planning and Environment, 2016)
- Of the population in the study area, 14 per cent are aged 14 years or younger, which is relatively low compared to 22 per cent for the Singleton LGA population and 19 per cent for NSW population
- Nine per cent of the population in the study area are aged 65 years or older compared to 11 per cent for the Singleton LGA and 15 per cent for NSW population
- 2.5 per cent of people within the study area speak a language other than English at home compared to 1.2 per cent for the Singleton LGA
- Two per cent of people in the study area identify as being of Aboriginal or Torres Strait Islander descent
- Two per cent of people in the study area identified a need for assistance with daily living.

3.3 Travel

- Both the New England Highway and the Golden Highway are designated B-Double routes used extensively by freight vehicles travelling through to the Port of Newcastle servicing coal mining, grain production and other industries in the Hunter Valley and Central West. Local residents and other travellers also use these highways to access the local population and employment centres of Maitland and Singleton and beyond
- Of those who travel to work, 48.4 per cent of people from the study area travelled via car as the driver and 4.2 per cent as a passenger in a car at the time of the 2011 Census
- Of those who travel to work, less than one per cent of people from the study area travelled via public transport at the time of the 2011 Census
- Other methods of travel to work included walking (17 per cent), bicycle (1.5 per cent), and truck (1.7 per cent). Note that the higher percentage of people walking to work is attributed to the Singleton Military Base being located within the study area
- There are 2.3 motor vehicles on average per dwelling in the study area
- Between October 2008 and February 2014, 45 crashes were reported within the proposal area. One crash resulted in a fatality, 22 were injury crashes with 36 people injured and the remaining 22 crashes were non-casualty crashes.

3.4 Property and access

The New England Highway (route A43) forms part of the inland road network between Sydney and Brisbane and is the primary route connecting the Upper Hunter with Maitland and Newcastle. The 887 km highway runs from Hexham near Newcastle in NSW, to Yarraman near Toowoomba in QLD. The 314 km Golden Highway (route B84) starts at the intersection with the New England Highway at Whittingham and provides access through to Dubbo. Both highways are designated B-Double routes used extensively by freight vehicles travelling through to the Port of Newcastle servicing coal mining, grain production and other industries in the Hunter Valley and Central West. Local residents and other travellers also use these highways to access the local population and employment centres of Maitland and Singleton and beyond.

Seventeen lots are located adjacent to the proposal area, 13 of these along the New England Highway, the remaining four along the Golden Highway.

On the southern side of the New England Highway, three lots are road reserve owned by Roads and Maritime and seven lots are privately owned. Six of these properties are used for residential and/or grazing purposes, the other lot is used for commercial purposes. One of these properties has an access directly onto the New England Highway, five properties have an access off Bell Road and one has an access off Old North Road. Lots owned by RMS are currently part of the road reserve.

On the northern side of the New England Highway, three large rural lots are adjacent to the proposal area. There are no formal accesses onto the New England Highway from these lots, but it is noted that informal accesses onto the New England Highway (gates with no driveways) exist for these properties. The formal access for these properties is provided via New Freugh Lane off the New England Highway to the north and via Bell Road to the east. These lots are currently used for grazing purposes, with two of these zoned for future industrial development (see Whittingham Urban Release Area in Section 3.6).

On the southern side of the Golden Highway one property is owned by Transport for NSW and one is owned by Roads and Maritime. On the northern side of the Golden Highway two properties are privately owned. These properties currently have access via the Whittingham rest area to the old section of the Golden Highway.

3.5 Economic

- According to the 2011 Census, the median weekly household income for the study area was \$1,383, Singleton was \$1,692 and the NSW State average was \$1,237
- 65 percent of the people within the study area were active in the workforce.
- At the time of the 2011 Census, one percent of people within the study area were unemployed. The unemployment rate in the Singleton LGA was 3.3 per cent. At 30 September 2015 the Singleton LGA's unemployment rate had increased to 7.0 per cent (Department of Employment, 2016)
- Key industries that people from the study area are employed include defence (34 per cent), coal mining (10 per cent) and accommodation (3 per cent).

3.6 Business and industry

There are a number of businesses/industries located in the vicinity of the study area. These include:

- **United 24 Service Station** – United 24 is located within the project area on the New England Highway approximately 300 metres north of the Golden Highway and New England Highway intersection. The service station provides fuel and convenience items. Passing trade is a major aspect of the viability of this local business.
- **EC Throsby Pty Ltd (abattoir)** – Located approximately 700 metres south of the Golden and New England Highway intersection is the EC Throsby abattoir. The abattoir processes 170,000 head of cattle annually and employs 220 staff. Its 60 meat products are sold in Australia and internationally
Approximate 45 livestock trucks (a mix of stock trucks, semitrailers, B-doubles and fixed axle) access the facility each day using Old North Road (off the Golden Highway) between the hours of 8:00am and 6:00pm. Up to 30 other deliveries also take place each day with a range of vehicles

Staff who work at the facility drive private vehicles to work and park onsite at the facility. Peak staff movement times are 4:00am to 6:30am, 2:45pm to 3:45pm and 12:15am to 11:30am during shift start and end times

To provide safe access to the Golden Highway in either direction, the Whittingham light vehicle rest area located north of the Old North Road/Golden Highway intersection provides an informal turning facility used by these trucks.

- **Primary production** – the area located to the south and south-west of the study area is zoned primary production. It supports activities such as extensive agriculture, forestry, home occupations, intensive plant agriculture and other uses with consent (Singleton Council, 2013).
- **Whittingham Urban Release Area** – A number of lots in the vicinity of the Golden Highway and New England Highway intersection are part of an Urban Release Area designated in the Singleton LEP (2013). The site, comprising Lot 1, DP 33992, Lot 4 DP 621020, Lot 1 DP 653039, Lot 23 DP1128978 and Lot 24 DP112897 are zoned as zoned Heavy Industrial (IN3) in the Singleton LEP (2013).

There is an approved Development Application (DA), where development work has commenced, for lots Lot 23 DP1128978 and Lot 24 DP112897 which are located to the west of the New England Highway and north of the Golden Highway. Improved access onto both highways will provide beneficial transport outcomes for businesses that locate within this development.

- **Mobile phone tower** – A mobile phone tower is located approximately 35 m off the New England Highway on Lot 10 DP703050. This tower is used by Telstra, Optus, Vodaphone and the NBN Co Limited (Australian Government, 2016). It provides 4GX, 3G and 2G coverage in the local area depending on the provider (Telstra, 2016) (Optus, 2016)
- **Main Northern Railway Line** – Used for both freight and passenger services, the Main Northern Railway Line is located just outside the proposal area
- **Singleton Army Training Area** - The Single Army Training Area is a 14,375 hectare firing range located just outside the proposal area. It is used for live firing training activities
- **Singleton Airport** – Located approximately 6 km to the north-west of the study area, is used for sky diving and other general aviation activities.

Figure 5 shows associated land use. Figure 6 shows the location of relevant business and industry items.

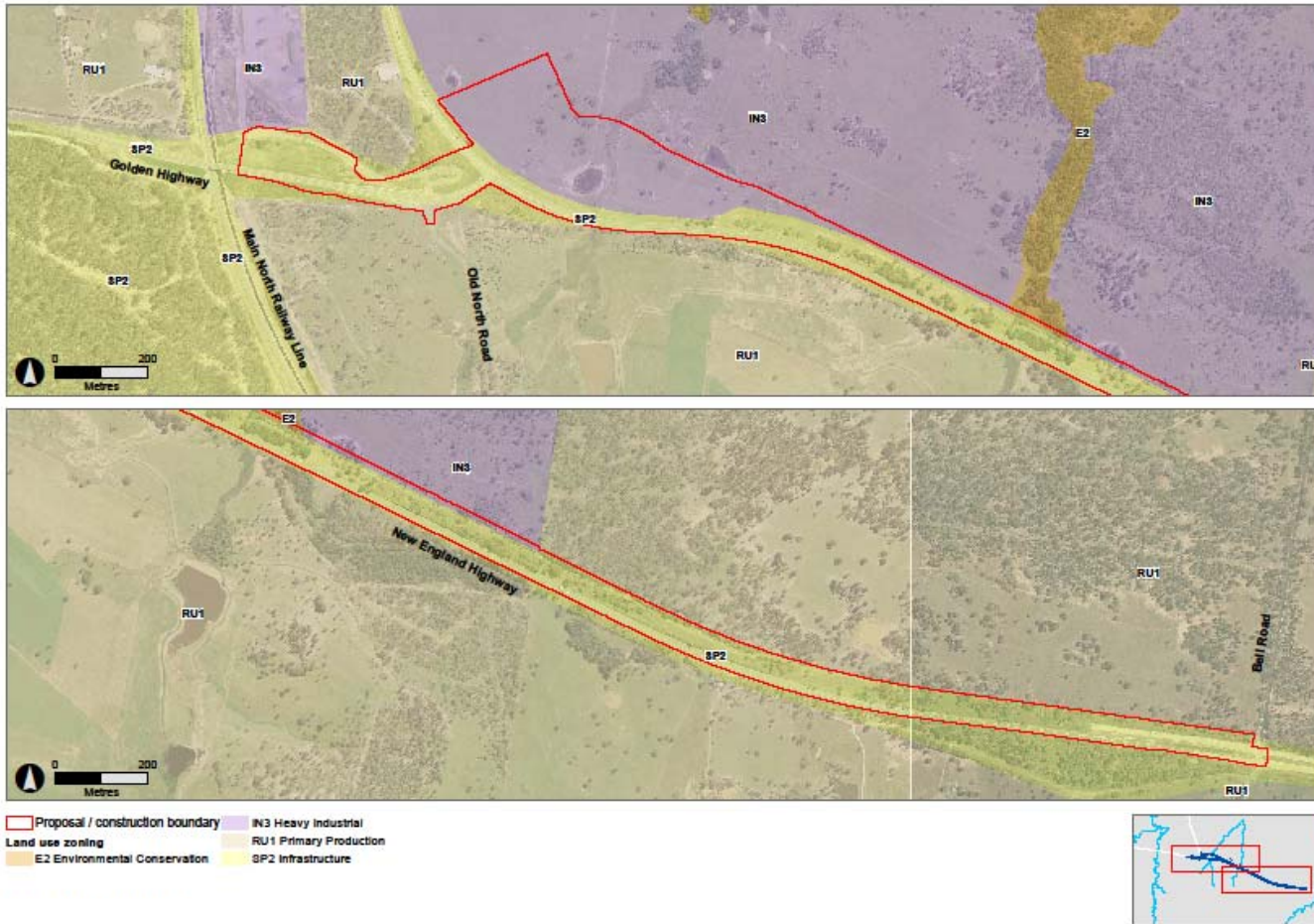


Figure 5 Land zoning

3.7 Social infrastructure

As the proposal is located outside of a major town and in a rural setting, there is limited social infrastructure in the vicinity of the proposal area. Education, health, emergency services, aged care, sport, recreation, cultural and community support services are located in the nearby towns of Singleton and Branxton.

Social infrastructure within, or immediately adjacent to the study area (as shown in Figure 6) includes:

- **New England Highway** - The New England provides access for private and commercial vehicles. The speed limit is posted at 100 km/h from Bell Road to just before the Golden Highway intersection where the speed limit is reduced to 80 km/h. Heading westbound along the highway, gantry and roadside signage is provided prior to the Golden Highway intersection to direct drivers along their journey. In relation to safety features, the New England Highway has a mixture of W-beam safety barrier and Wire Rope Safety Barrier. A cyclist crossing is provided on the northbound side of the New England Highway in advance of the Golden Highway.
- **Golden Highway** - The Golden Highway provides access for private and commercial vehicles. The speed limit is posted at 70km/h from the New England Highway intersection through the proposal area. The Golden Highway has a W-beam safety barrier on both sides within the proposal area.
- **Public transport** – Hunter Valley Buses run a public bus service along this section of the New England Highway. The Singleton Heights to Stockland Green Hills via Maitland (route 180, stop 233554) stops at the corner of New England Highway and Bell Road (eastbound) and adjacent to the mobile phone tower (westbound).

School bus services are also provided by Hunter Valley Buses. School routes 6318 and 6312 operate on the New England Highway and Golden Highway in the vicinity of the proposal area (CDCBus, 2016). School bus stopping warning signage is provided on the New England Highway.

A number of long distance coach services also use this section of the New England Highway including Greyhound Australia, Hunter Valley Coaches, Port Stephens Coaches and Sid Fogg's Coachlines.

Passenger rail services between Branxton and Singleton use the Main Northern Railway Line which is runs just outside the proposal area.

- **Emergency services** – Emergency services, including police, ambulance, fire and rescue and the rural fire brigade, utilise the highways for emergency response and enforcement activities.
- **Whittingham light vehicle rest area** – The Whittingham rest area is currently located on the northern side of the Golden Highway, just before the New England Highway intersection. The rest area provides facilities for

travellers, including an accessible toilet, a picnic table, a sheltered picnic table and litter collection facilities.

The next closest light vehicle rest area is located approximately 10 km to the north on the New England Highway just outside of Singleton. Further north, the Rixs Creek rest area caters for both heavy and light vehicles. A heavy vehicle rest area is also located 15km to the south at Branxton.

This area also provides an informal U-turn facility for livestock trucks that access the local abattoir via Old North Road allowing them to safely turn across the highway.

Figure 6 shows the location of relevant social infrastructure items.

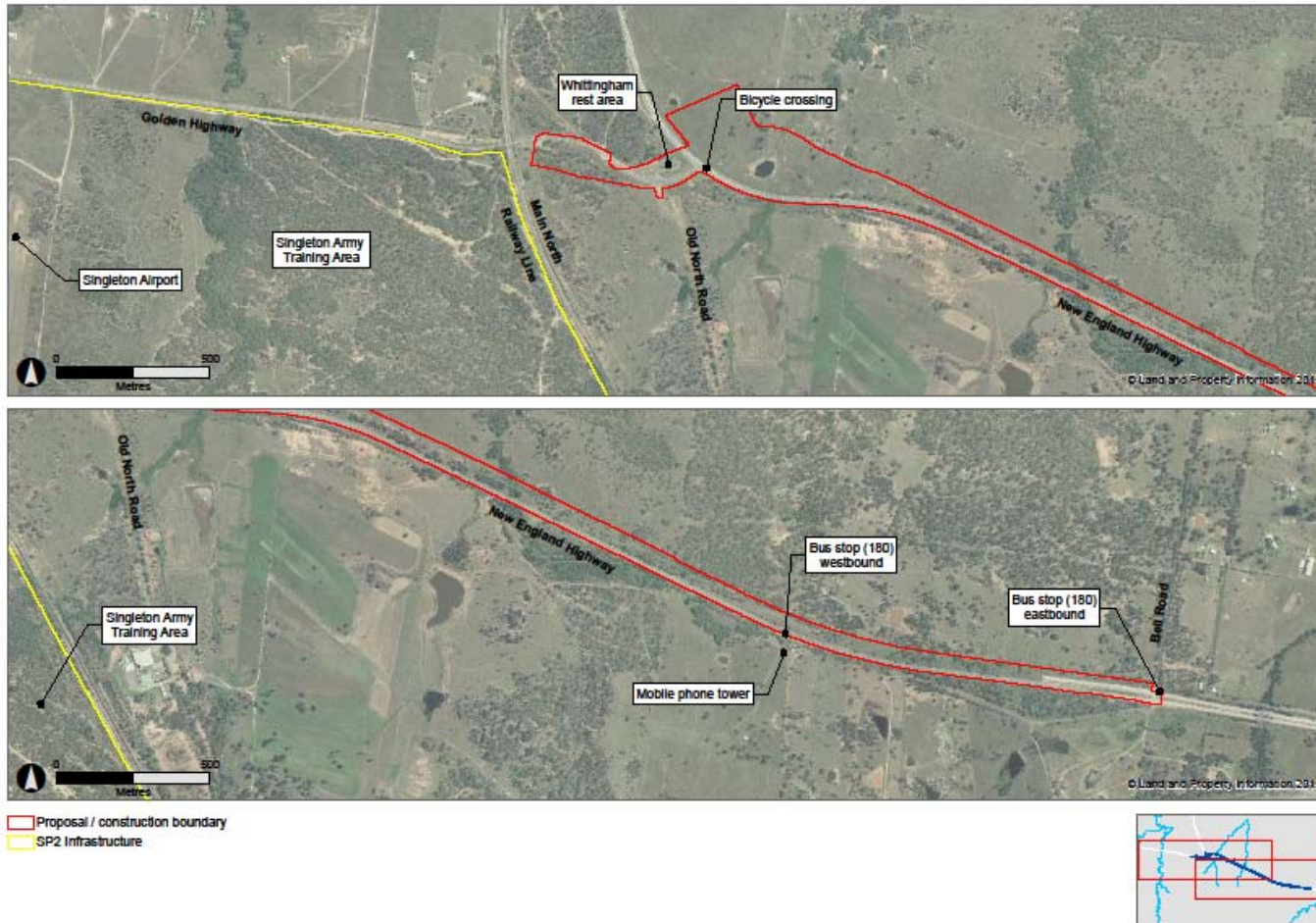


Figure 6 Location of infrastructure (social and other)

4 Assessment of social and economic impacts

The following potential socio-economic impacts have been identified for the proposed upgrade of the New England Highway between Belford and the Golden Highway.

4.1 Construction phase impacts

Construction of the proposal is expected to start in early-2019 (subject to planning approval) and be completed by early-2021, weather permitting.

Work would be limited to the recommended standard hours for construction outlined in the Interim Construction Noise Guideline (DECC, 2009) (ICNG) where possible. These are:

- 7.00am – 6.00pm Monday to Friday
- 8.00am – 1.00 pm Saturdays
- No work on Sundays or public holidays.

However, to minimise disruption to traffic and to reduce the duration of construction, some work would need to be undertaken outside of these hours. This includes the relocation of existing utilities and services under the road, some road surfacing work and construction of the flyover.

4.1.1 Population and demography

The proposal is not expected to have a direct impact on the demographic profile of the study area or its surrounds given the proposal would not impact any existing residential properties or areas.

Any workers not from the Singleton area may temporarily take residence in the area, influencing the local demographics in the short term.

4.1.2 Travel

As outlined in section 3.3, the New England Highway and the Golden Highway are key transport routes for residents, travellers and freight. Construction of the proposal would be staged to minimise disruption to local traffic flows. However it is expected that at times there will need to be changes to local traffic conditions. These include:

- Speed limit reductions in the construction area
- Increased truck movements associated with construction activities
- Partial or complete stoppages of traffic for construction activities
- Changes to access arrangements which will include permanent removal of right hand turn movements (left in, left out will be allowed) along the New England Highway.

Given the already congested nature of the Golden Highway/New England Highway interchange, it is likely that drivers will experience additional delay during construction because of these traffic management actions.

Final construction methods would be refined to minimise traffic and transport impacts, however traffic restrictions would be unavoidable during some construction activities, such as piling work, foundation and road surfacing work and construction of the flyover.

Where possible, the most disruptive work (i.e. work that requires lane closures) would be undertaken as night work. This, combined with temporary effective traffic management, would minimise impacts to traffic and transport using both the New England Highway and Golden Highway.

The normal access arrangements at Old North Road (to the abattoir) may be temporarily disrupted, however access would be maintained at all times to ensure there is no impact to the day-to-day operations of the abattoir. Access to all private property would be maintained at all times.

4.1.3 Property and access

The proposal requires the part acquisition of the lots listed in Table 1 and shown in Figure 7.

Table 1 Property acquisition

Current land use	Lot	DP	Full/ partial acquisition	Area to be acquired	Portion of total lot area
Private property	4	DP 621020	Partial	11.41 ha	9.7 %
Private property	1	DP 653039	Partial	28.50 ha	33.4 %
Private property	11	DP 825903	Partial	0.52 ha	1.3 %

To construct the flyover, part of Lot 1 DP653039 and Lot 4 DP6210020 will be required. This land is currently vacant rural land that is being used for grazing in the interim. These lots are part of the Urban Release Area (zoned IN3 heavy industrial) in the Singleton LEP and it is expected that this will be developed according to this zoning at some point in the future. Impacts associated with the acquisition of this land relate to the future industrial development potential of the land.

A small portion of Lot 11 DP 825903 is also required. This land is currently vacant rural land.

There are six properties adjacent to the proposal area that support residential uses. Residents living in these properties may experience a range of construction related impacts related to access, traffic management (speed reductions, stoppages etc.), noise, vibration and dust. There are also a number of residential properties along the New England Highway south of Bell Road that may also experience indirect construction related impacts. These potential impacts are discussed in the following sections.

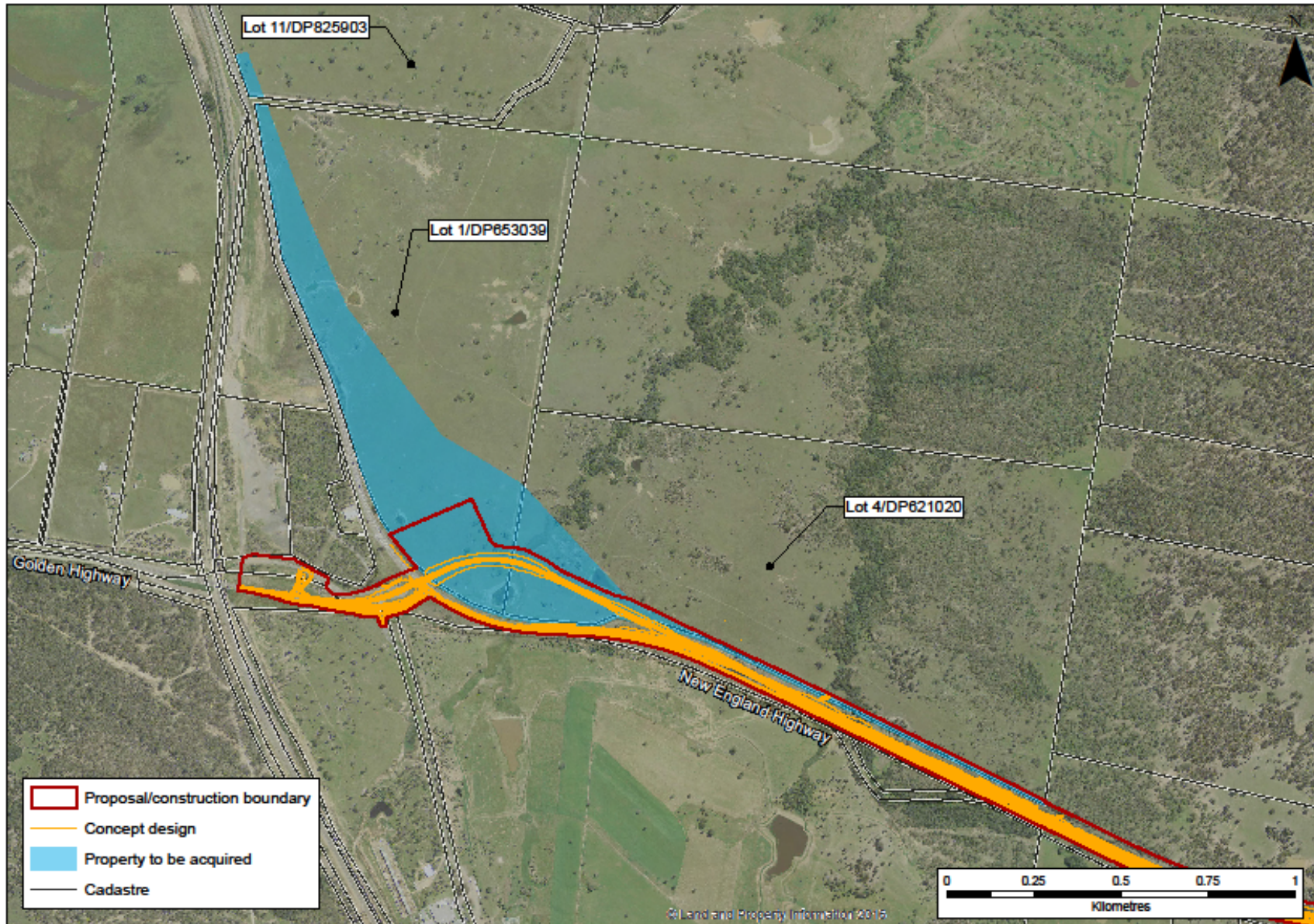


Figure 7 Property acquisition map

4.1.4 Amenity impacts

Construction of the proposal may impact the local amenity of the area temporarily. This would primarily relate to minor increases in noise and air emissions, additional traffic on local roads (see section 5.1.2 above) and visual amenity impacts. Amenity impacts would be few and highly localised.

Impacts to the local air quality are likely to be minor and would be influenced by the extent and nature of the works being undertaken and the weather conditions (dust generation can be exacerbated during dry and windy conditions, particularly on hot days). Impacts to the local air quality would be minimised through implementation of standard management measures for the duration of the construction period.

The proposal would result in a temporarily altered visual environment as a result of construction works and the use of compound sites. Construction of the proposal would be staged and therefore impacts would be progressive along the upgrade route. The few sensitive receivers in the area combined with the passing nature of road users reduces this to a low impact.

A noise and vibration assessment carried out for the proposal found that depending on the proposed hours of construction, some residences along the New England Highway may experience noise impacts during construction works. However mitigation measures applied during the construction period would reduce these temporary and low level impacts.

4.1.5 Economic

The proposal is not anticipated to influence the local economy. There would be no impact to the local industry as all commercial land uses are expected to continue.

4.1.6 Business and industry

There are a number of businesses and industries that operate within the vicinity of the proposal area as outlined in section 3.6. Potential impacts to business and industry include:

- **Restricted access to businesses due to construction activities** – construction activities may require accesses in the vicinity of the work sites to be temporarily altered for a period of time. The abattoir is located on Old North Road off the Golden Highway and trucks accessing the facility use the existing Whittingham rest area to safely turn out of Old North Road and travel towards the New England Highway. The normal access arrangements at Old North Road (to the abattoir) may be temporarily disrupted during works along the Golden Highway, however safe access would be maintained at all times to ensure there is no impact to the day-to-day operations of the abattoir. Access to all other businesses, including the United Service Station and private properties would be maintained at all times.
- **Travel delays** – during construction, there may be times where it takes vehicles longer than usual to transit through the proposal area due to speed

reductions and other traffic management actions. From a business perspective, this is likely to impact freight and other commercial vehicles travelling through this section of the New England Highway and Golden Highway. However impacts would be temporary and minor in nature.

- **Future development potential** – land required to construct the flyover will reduce land available for future development in the designated Urban Release Area located at around the New England Highway/ Golden Highway intersection.

4.1.7 Social infrastructure

Vehicles using the New England Highway and Golden Highway will likely experience some delay to their journey in the vicinity of the proposal area during construction. During construction, speed limits on the New England Highway and Golden Highway in the vicinity of the proposal area will be temporarily reduced. In addition there may be partial and full stoppages of traffic to allow for construction activities.

The bus stop at Bell Road serviced by the route 180 bus will not be directly impacted by construction work, except through altered traffic conditions in the local area.

School buses that operate on roads within the proposal area will likely experience some delay to their journey due to the traffic management actions outlined above. Any student pick up and drop off points would be maintained during the construction phase, or where appropriate temporarily relocated in consultation with the service provider.

Access would be made available at all times during construction for emergency service vehicles, including police, ambulance, fire and rescue and the rural fire brigade.

The current Whittingham light vehicle rest area would be removed by the proposal. The facilities currently provided by this rest area will not be re-provided and instead drivers would be directed to use the Town Head Park light vehicle rest area located approximately 10 km north along the New England Highway. This alternate rest area provides accessible toilets, picnic tables, playground equipment, litter bins, BBQ facilities and shelters. Alternate rest areas are located to the south at Branxton (heavy vehicle rest area) and further north at Rixs Creek (combined heavy and light vehicle rest area).

4.1.8 Summary of construction impacts

The construction related socio-economic impacts have been summarised in Table 2 below.

Table 2 Summary of construction related impacts

Impact	Summary	Stakeholder impacted	Duration and nature of impact
Property alterations	Partial acquisition of three rural lots, including removal of 40 ha of land from an Urban Release Area	Private land owners	Permanent, moderately adverse impact
Increased travel times	At times there would need to be changes to local traffic conditions to accommodate construction works. This would may increase the travel time through the project site	Local and regional users of the New England Highway and Golden Highway	Minor impacts throughout the construction period
Altered access arrangements	Construction activities may require accesses in the vicinity of the work sites to be temporarily altered for a period of time. However access would be maintained at all times for businesses, residences and emergency services.	EC Throsby (abattoir), local residences	Minor impacts throughout the construction period
Changes to local amenity	Construction of the proposal may impact the local amenity in terms of increases in noise and air emissions, additional traffic on local roads, and visual amenity impacts.	Local residences	Minor impacts throughout the construction period
Removal of the Whittingham Light Vehicle Rest Area	The existing Whittingham Light Vehicle Rest Area would be removed to accommodate construction of the flyover	Local and regional users of the New England Highway and Golden Highway	Permanent, moderately adverse impact

4.2 Operation phase impacts

4.2.1 Population and demography

The proposal is not expected to have a direct impact on the demographic profile of the study area or its surrounds given the proposal would not impact any existing residential properties or areas.

The proposal is expected to reduce travel times and improve safety which may influence residential and employment growth in the region through improved access opportunities.

4.2.2 Travel behaviour

Once operational, the proposal would provide improved traffic flows, and therefore travel times, and will be a safer environment for road users. The separated carriageways and improved safety barriers would provide a safe, high speed environment. Removal of at grade right hand turns across the highway also removes the risk of crashes. The construction of the fly over reduces at-grade traffic conflicts, the risk of crashes and the need for queuing. The two lane arrangement of the new section of the New England Highway would provide a safer overtaking environment.

Removal of the Whittingham Light Vehicle Rest Area may change travel behaviours for some travellers. The closure of Whittingham Light Vehicle Rest Area is noted in the New England Highway Draft Corridor Strategy (NSW Government, 2016). Motorists would need to utilise alternate rest areas, the closest being located approximately 10 km to the north on the New England Highway just outside of Singleton. Other rest areas are located approximately 15km north at Rixs Creek rest area (both heavy and light vehicles) and 15km south at Branxton (heavy vehicle rest area). These spacing of these rest areas is considered to be sufficient to service travellers.

4.2.3 Property and access

Separation of the New England Highway eastbound and westbound carriageways between Belford and the Golden Highway would exclude right hand turning movements from properties along the New England Highway.

Properties located on the northern side of the New England Highway between Bell Road and the Golden Highway currently do not have formal access onto the highway. Most of the properties on the southern side of the New England Highway are accessed by a service road from the Bell Road/New England Highway intersection or via Old North Road from the Golden Highway. The exception to this is Lot 40 DP1128981 which currently has a driveway access onto the New England Highway. Following construction of the proposal, access to the eastbound carriageway from this property would be provided by turning left onto the New England highway, exiting left to the Golden Highway, using the u-turn facility to turn around and then accessing the flyover to re-join the New

England Highway travelling eastbound, adding approximately two kilometres to the journey.

The social impact of this change is therefore localised to one property owner.

4.2.4 Amenity impacts

The proposal would result in some improvements to the local amenity through better traffic flow and reduced congestion, as well as some permanent visual changes through construction of the flyover and New England Highway duplication.

The greatest change to the existing environment will be the construction of the flyover. While this visual change is considered a moderate impact, the lack of visual receptors and the passing nature of road users reduces this impact to low-moderate.

From an acoustic perspective, the noise assessment carried out for the proposal found that no noise sensitive receivers within the study area would be adversely impacted by the proposal.

4.2.5 Social infrastructure

As discussed, the proposal would improve safety and travel times through this section of the New England Highway for all road users, including public transport operators. Once operational, a mixture of concrete bridge barrier, type 'F' single sided concrete barrier, W-beam safety barrier and Wire Rope Safety Barrier would be used along the New England Highway to improve safety for motorists.

For cyclists, the existing New England Highway crossing would be maintained and the following new cycle infrastructure included:

- 1.3m high safety barrier on the proposed bridge to cater for cyclists
- Green coloured pavement along the northbound shoulder of the New England Highway in advance of the Golden Highway intersection
- Green coloured pavement extended across the Golden Highway at the intersection with the New England Highway
- Cyclist crossing on the New England Highway eastbound entry ramp.

4.2.6 Business and industry

Improved travel times and safety are expected to deliver positive outcomes for business and industry, especially freight. The service station is not expected to be impacted by operation of the project.

Safe access would be provided for trucks and vehicles leaving the EC Throsby abattoir wanting to turn right onto the New England Highway via the new jug-handle u-turn facility.

4.2.7 Summary of operational impacts

The operational related socio-economic impacts have been summarised in Table 3 below.

Table 3 Summary of operational related impacts

Impact	Summary	Stakeholder impacted	Duration and nature of impact
Improved road safety	The proposal would improve safety at the New England Highway / Golden Highway intersection by reducing the risk of crashes, particularly for motorists turning right from the Golden Highway	Local and regional users of the New England Highway and Golden Highway	Permanent, s positive impact
Reduced congestion and improved travel times	The proposal would improve traffic flow at the New England Highway / Golden Highway intersection through provision of the flyover	Local and regional users of the Golden Highway	Permanent, significantly positive impact
Changes to visual amenity	Construction of the flyover and New England Highway duplication would alter the visual setting	Local residences	Permanent, low-moderate adverse impact
Improved cycling infrastructure	New cycling infrastructure would be provided as part of the proposal	Local and regional cyclists	Permanent, positive impact
Removal of the Whittingham Light Vehicle Rest Area	Motorists would need to use alternate rest areas in the region due to the removal of the Whittingham rest area	Local and regional users of the New England Highway and Golden Highway	Permanent and moderate

5 Mitigation measures and strategies

The mitigation measures and strategies identified to address potential impacts associated with the proposal have been outlined in Table 4.

Table 4 Management and mitigation measures

Impact	Mitigation measure	Timing
Property alterations	All property acquisitions are to be undertaken in accordance with current Roads and Maritime guidelines, including Roads and Maritime Services Land Acquisition Information Guide (Roads and Maritime Services, 2014b) and the <i>Land Acquisition (Just Terms Compensation) Act 1991</i>	Pre-construction
Property impacts	Consultation is to be undertaken with potentially affected residences prior to the commencement of and during works in accordance with the Roads and Maritime Community Involvement and Communications Resource Manual. Consultation should include, but not be limited to, door knocks, newsletters or letter box drops providing information on the proposed works, working hours and a contact name and number for more information or to register complaints.	Pre-construction / construction
Property impacts	Consultation is to be carried out with EC Throsby to identify appropriate management strategies to avoid or minimise impacts on access and operations. These details are to be included in the project traffic management plan (TMP).	Pre-construction / construction
Impacts to bus services	Operation of public and school bus services are to be maintained during construction of the project. Appropriate arrangements are to be made with the local school bus provider to ensure safe pick up and drop off points are maintained/ established throughout the construction period. These details are to be included in the project TMP.	Pre-construction / construction
Emergency services	Access for emergency service vehicles, including police, ambulance, fire and rescue and	Pre-construction / construction

Impact	Mitigation measure	Timing
	the rural fire brigade is to be provided at all times during construction. Any special arrangement for emergency vehicles should be communicated with the relevant agency and detailed in the project TMP.	
Impacts to the community	A complaints handling procedure and register is to be included in the project CEMP.	Pre-construction / construction
Impacts to the community	Road users and local communities are to be provided with timely, accurate, relevant and accessible information about changed traffic arrangements and delays owing to construction activities.	Pre-construction / construction

6 Conclusion

The socio-economic assessment has identified that construction related impacts will be localised to the proposal site and its immediate surrounds and are most likely to occur due to traffic and access disruptions and stakeholder specific issues associated with access and construction activity. These items will need to be carefully managed during construction to reduce the impacts as much as possible.

Key construction related impacts to be managed include:

- Partial acquisition of three vacant rural lots that are currently used for grazing. This includes removal of approximately 40 ha of land from an Urban Release Area
- Temporary noise, visual and dust impact associated with construction activities for local residents
- Traffic and access impacts associated with reduced speed limits, access changes and stoppages.
- Removal of right hand turns due to construction of separated carriageways. Left in and left out access will be provided
- Removal of Whittingham Light Vehicle Rest Area.

Once operational, significant socio-economic impacts are not expected.

Key operational outcomes include:

- Improved safety for users of the Golden Highway / New England Highway intersection due to the
- Improved travel times and safety associated with the upgraded section of the highways and their intersection.
- Improved cycle infrastructure within the proposal area – including crossing points.
- Motorists will need to use alternate rest areas in the region due to the removal of the Whittingham Light Vehicle Rest Area.

7 References

- Australian Government. (2016, February 10). *Register of Radiocommunications licences*. Retrieved from Australian Communications and Media Authority: http://web.acma.gov.au/pls/radcom/site_proximity.main_page
- CDCBus. (2016, February 18). *Hunter Valley School Timetables*. Retrieved from CDCBus: <http://www.cdcbus.com.au/Hunter-Valley-School-Timetables.html>
- Department of Employment. (2016, January). *Small Area Labour Markets publication*. Retrieved from Department of Employment: <https://www.employment.gov.au/small-area-labour-markets-publication>
- Department of Planning and Environment. (2015). *Draft Hunter Regional Plan*. Sydney: NSW Government.
- Department of Planning and Environment. (2016). *Population-Projections*. Retrieved from Department of Planning and Environment: <http://www.planning.nsw.gov.au/Research-and-Demography/Demography/Population-Projections>
- NSW Government . (2012). *Upper Hunter Strategic Regional Land Use Plan* . Sydney: NSW Government.
- NSW Government. (2011). *NSW 2021: A plan to make NSW number one*. Sydney: NSW Government.
- NSW Government. (2016). *New England Highway Draft Corridor Strategy* . Sydney: NSW Government.
- Optus. (2016, February 10). *Coverage map*. Retrieved from Optus: <http://www.optus.com.au/shop/mobile/network/coverage>
- Roads and Maritime Services. (2015). *New England Highway upgrade between Belford and the Golden Highway - Community Consultation Report*. Newcastle: Roads and Maritime Services.
- Singleton Council. (2008). *Singleton Land Use Strategy* . Singleton: Singleton Council.
- Singleton Council. (2013). *Singleton Local Environmental Plan*. Singleton: Singleton Council.
- Singleton Council. (2015). *Development Plans and Strategies* . Retrieved from <http://www.singleton.nsw.gov.au/Index.aspx?NID=973>
- Singleton Shire Council. (2014). *Community Profile*. Retrieved from Singleton Shire Council: <http://www.communityprofile.com.au/singleton/>
- Telstra. (2016, February 10). *Coverage Map*. Retrieved from Telstra: <https://www.telstra.com.au/coverage-networks/our-coverage>
- Transport for NSW. (2012). *NSW Long Term Transport Master Plan*. Sydney: Transport for NSW.
- Vanclay, F. (2003). *International Principles For Social Impact Assessment. Impact Assessment and Project Appraisal, 5-12.*