

UPGRADING THE PACIFIC HIGHWAY

Woolgoolga to Ballina Upgrade

Working paper: Social and economic

November 2012

Final

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Executive summary

Introduction

The overall objective of this report is to identify and assess the potential socio-economic impacts for local and regional communities from the upgrade of the Woolgoolga to Ballina upgrade (“the project”) which forms part of the Roads and Maritime Services (RMS) Pacific Highway upgrade program and where required identify feasible impact mitigation measures.

The study has been carried out to address the Director-General’s environmental assessment requirements including:

- Social and economic impacts on local and regional communities (including towns and villages directly impacted by the project and those bypassed by the project)
- Impact on highway-based businesses and agribusinesses from traffic, access, property, public domain and amenity related changes
- Impact of the project on tourist and recreational access and use of towns and villages, National Parks and nature reserves, State forests and waterways
- Connectivity (including pedestrian and cycleway opportunities) and contiguity of existing and planned settlement and activity clusters.

The study area for this socio-economic study covers the local government areas of Coffs Harbour, Clarence Valley, Richmond Valley, Lismore and Ballina. These local government areas have been selected based on the location of the project and the potential for the project’s construction and/or operation to affect nearby communities and businesses. The broad study area acknowledges the movement patterns for people who live or work in the vicinity of the project.

A number of towns and villages located near the project are also considered in this assessment. These include Corindi Beach, Red Rock, Grafton, South Grafton, Ulmarra, Tyndale, Harwood, Woodburn, Broadwater, and Wardell.

Existing environment

Key characteristics of the existing socio-economic environment of the study area include:

- Higher average rates of population growth compared to regional NSW over the five years to 2009. Future growth is expected to particularly focus on the Coffs Harbour and Ballina local government areas, with these two local government areas accounting for more than three quarters of population growth in the study area to 2036
- A relatively transient population, demonstrated by lower proportions of people living at the same address both 12 months and five years prior to the 2006 Census. However, some rural localities such as Tucabia and Tyndale recorded lower levels of population mobility, which supports feedback received during consultation for the project that a number of families had lived on the same property for a number of generations
- An older population compared to regional NSW, with all local government areas except Lismore recording higher proportions of people aged 65 years or over. The proportion of older people is

expected to remain high in coming years, with older people forecast to comprise about 30 per cent or more of each local government areas population apart from Lismore. The higher proportion of older people is likely to contribute to the higher levels of people within the local government area needing help or assistance in one or more of the core activity areas of self-care, mobility and/or communication

- Levels of advantage/ disadvantage and economic resources vary across the study area, with some rural areas generally displaying levels of relative disadvantage and lower levels of economic resources
- The Clarence Valley, Richmond Valley and Coffs Harbour local government areas have household vacancy rates above the regions average. This suggests these local government areas have a greater capacity to service the demand for housing and accommodation needs of the workforce. In this regard, a likely consequence of increased demand for accommodation would be higher property values and rents, reflecting growth in demand for real property from increased construction activity
- While more than half of the labour market in the study area is in full-time employment, there is considerable scope for those unemployed and in part-time employment to benefit from increased employment opportunities and/or hours resulting from the project. In particular, unemployment in the Clarence Valley and Lismore local government areas was recorded as having unemployment levels above the study area's average, providing opportunities for persons in these local government areas to support the project
- A predominance of agriculture, forestry and fishing industries, specifically in the Clarence Valley and Richmond Valley. Other major industries prevalent in the region include construction and property and business services. This suggests that existing industry in the study area would support the growth and development of the project, with the construction, and property and business services industries likely to benefit from increased demand for goods and services, as the regional workforce and related services provided by these industries are used to cater for the project
- Tourism is an important industry in the study area, with a range of regional level tourist destinations and features, including towns and villages, cultural facilities, touring routes, natural attractions and lookouts. In 2007, approximately 3.8 million people visited the study area, spending a total of approximately \$857 million
- Retail traders (eg petrol stations) dominate the number of businesses surveyed along the existing Pacific Highway, with these accounting for 43 per cent of businesses identified during a survey of local business. This was followed by accommodation, café, and restaurants, which accounted for 33 per cent of businesses along the existing highway
- Communities have access to a wide range of local, district and regional level community services and facilities, although distribution of services and facilities varies across the study area. Smaller towns and villages generally offer a limited range of services and facilities to meet the needs of local residents, while regional or district levels services and facilities are located in major centres such as Coffs Harbour, Grafton, Maclean, Casino, Lismore and Ballina
- Communities that value the quality of the natural environment and landscapes as well as the rural character and built and natural heritage of the study area. These are key contributors to the region's lifestyle and amenity. Access to good quality road connections and road safety are also important issues for communities in the study area, particularly as most residents are required to rely on private vehicles to access regional services and facilities.

Potential impacts

The construction and operation of the project is expected to have a range of impacts, both beneficial and adverse, for local and regional communities. The following provides an overview of the key impacts of the project's construction and operation for the socio-economic environment.

Property acquisition

The project would directly impact, either totally or in part, around 568 land parcels, of which approximately 369 land parcels are privately owned. Potential socio-economic impacts relating to the project include:

- Disruption to social networks and community relationships and increased stress and anxiety associated with property acquisition and potential relocation of households
- Barriers to the movement of cattle and farm machinery within agricultural properties due to severance by the highway
- Changes in property values as a result of changes in rural character and amenity, either beneficial or adverse, associated with the relocation of the highway.

Population and demography

The project is not expected to significantly impact population and demography in the study area. In the short-term, potential impacts may include:

- Minor changes to local populations from some households relocating because their property is to be acquired to make way for the project
- Increase in the number of non-resident workers from a temporary influx of workers to the study area to fill employment opportunities provided by construction.

In the longer term, improvements in travel conditions and travel time savings may make some areas more accessible and attractive for people to relocate to the area. While this change would occur over time, the upgrade of the highway may facilitate population growth in some areas.

Economy

Overall, the development of the project is expected to improve prosperity for the local and regional economies as incomes, employment and demand for goods and services increases during construction and operation. It is expected that:

- Greater industry growth and employment opportunities would arise from the project, especially during construction. In particular, the local and regional construction industry is expected to benefit directly from greater employment and spending in the region. This would be accompanied by indirect and induced economic benefits to other supporting industries
- There would be up to about 4100 direct full-time equivalent workers required to construct the project (at peak times), depending on the project delivery staging
- There would be an improvement in productivity through improvements to mobility and connectivity along the project. Productivity improvements would come about through better matching of people to jobs, improved access to skilled labour, and improved connectivity between suppliers and markets

- There would be a reduction in environmental costs associated with traffic and congestion, such as reduction in costs associated with pollution from noise and air emissions
- There would be savings associated with transport efficiencies and safety improvements, such as reduced travel times, costs associated with road crashes and vehicle operating costs.

Local Businesses

The project is expected to introduce both positive and negative influences for local businesses in the region. Potential impacts on local businesses considered six key drivers, including: accessibility and traffic; visibility; amenity; town size; distance to larger towns; and economic base.

The construction of the project is expected to have a positive impact on the profitability and viability of businesses across the region, driven by the direct and indirect flow-on effects from construction expenditure. This expenditure is expected to increase the demand for local goods and services, and reflect positively on businesses in terms of increased employment, incomes and output.

Key findings for local business due to construction are as follows.

- Business localities that are not bypassed and in close proximity to construction works could be expected to benefit most. These localities may include Wells Crossing, Maclean, Harwood, New Italy and West Ballina
- Although South Grafton and Grafton are located further away from the construction works, the prominence of these locations as a major regional centre suggests that these localities would continue to be a destination of choice for highway and non-highway related needs
- Business sectors benefiting most from construction related activity across all locations include retail, accommodation, cafes and restaurants, as well as property and business services, where expenditure on the day-to-day needs of construction workers is expected to be most prevalent.

Construction related works are also expected to produce negative impacts on businesses in the region. In particular:

- Smaller townships that have businesses 'along the existing highway' and are proposed to be bypassed, such as Ulmarra, Woodburn, Broadwater and Wardell, are expected to be most affected from construction related works owing to potential traffic disruptions, poorer visibility and operating amenity. The businesses in these locations make up about 18 per cent of total businesses surveyed during the visual inspection carried out
- Potential impacts on fisheries in the Richmond and Clarence rivers including the estuary prawn trawl fishery, estuary general fishery, trap and line fishery
- More specifically, it is estimated that at least 16 highway based businesses would be directly affected by project construction, either totally or in part. These businesses include quarrying, service stations (two businesses), caravan parks (three businesses), and the remainder being a haulage depot, a commercial machinery shed, a museum and a sugar mill. The project would also impact on a conveyor associated with the sugar mill at Broadwater, with an overhead protection structure required where the conveyor crosses the proposed upgrade. This is not expected to impact on the long-term operations of the mill, but temporary disruption to the conveyor may occur during construction. It is possible that some directly affected businesses may relocate to new premises and/or establish similar businesses within the region.

The project requires the acquisition of around seven properties used for quarrying or related uses. This would result in the loss of around 26.3 hectares of quarry land and production output. Given the number of operational quarries across the North Coast region, the impact on the industry as a whole from the loss of these quarries is expected to be minor. At the same time, the sensitivity of the extractive industry to transport costs is likely to mean that the wider industry would benefit from the project's development through increased freight capacity and efficiency.

During operation, business located in towns and villages not bypassed by the project could be expected to benefit most from improved journey times of passing travellers as their willingness to stop and purchase goods and services may improve. However, the operation of the upgraded highway is expected to generate negative impacts for some business localities and sectors due to the diversion of traffic volumes away from these businesses. In particular:

- Business localities to be bypassed as a result of the project's operation include South Grafton, Ulmarra, Woodburn, Broadwater and Wardell. The loss in passing trade to businesses may be minimised due to a relatively smaller number of businesses that are traffic dependent (as opposed to traffic related or non-traffic related); there is a strong presence of local clientele; and/or there is a larger population size to support the economic base of the local economy. Bypassed localities that may be regarded as having these attributes include South Grafton and Maclean
- Business sectors focussed on the provision of highway dependent services that would be bypassed are likely to experience a degree of structural change. That is, resources and efforts currently focussed on providing highway related services could be expected to be re-allocated to non-highway related services (e.g. tourist attractions) to maintain sales and commerce (Otto and Anderson 1995 cited in Parolin 2011). The localities that may experience such structural change include the townships of Ulmarra, Woodburn, Broadwater and Wardell.

Overtime, it could be expected that adverse impacts on businesses at these localities would diminish as:

- Business owners realign their operations from catering for passing customers to catering for tourists and local residents
- Improvement in the operating environment occurs due to a reduction in heavy vehicles and through traffic. Bypasses can provide a catalyst for beautifying towns and streetscapes and changes to other uses (eg residential and commercial development, and/or arts and cultural facilities).

Agribusinesses

The development of the project is expected to reduce the amount of agricultural land available to agribusinesses. In particular:

- About 148 individual land owners with agricultural interests would be directly affected by the project. These include 57 land owners undertaking cropping activities (including sugar cane farmers), 88 land owners related to grazing, and 3 land owners related to a mix of horticulture.
- The overall impact of the project on the agri-economy is expected to be minor as it is estimated that about 0.2 per cent of total agricultural land in the study area would be lost, or intersected, by the project boundary.
- Key crop types affected directly by the project are as follows.
 - A loss of 1.8 per cent in the use of irrigated vegetables and herb production. This represents about one hectare of irrigated vegetable and herbs land of about 53 hectares in the study

area. Impacts on this crop are expected to occur within the Clarence Valley local government area

- A loss of 0.7 per cent of in the use of aquaculture, representing about 2 hectares of land area used for this crop in the study area. Impacts on this crop are expected to occur within the Clarence Valley local government area
- A loss of 0.9 per cent in sugarcane use, representing about 319 hectares of sugarcane land of about 35,652 hectares of total agricultural land for this crop in the study area. Impacts on this crop are expected to occur within the Clarence Valley, Richmond Valley and Ballina local government areas
- A loss of 1.9 per cent in vine fruit production. This represents 0.5 hectares of vine fruits land of about 26 hectares of total agricultural land for this crop. Impacts on this crop are expected to occur within the Coffs Harbour local government area.

Community values

During operation, the project would support community values associated with health and safety by improving road safety as well as safety for pedestrians and road users in towns bypassed by the project. Other impacts on community values from the construction and operation of the project include:

- The potential for both beneficial and adverse effects on community values relating to rural character and amenity resulting from the relocation of the highway either closer to or further from communities and individual properties. Where the project is realigned from the existing highway, it may detract from the existing rural character and amenity of the area. However, the project is likely to improve the amenity and character of those towns bypassed by the project
- Potential impacts on community values relating to the natural environment, including the Clarence and Richmond Rivers from the construction of new bridge crossings, loss of vegetation and loss or fragmentation of habitat for fauna species due to widening or realignment of the highway
- Changes in local access and connectivity during construction, resulting in disruptions and delays for motorists and other road users.

Local amenity

During construction, potential impacts on local amenity may occur from:

- Construction noise and dust for communities near construction works
- Changes to local character for those areas near construction
- Noise and dust associated with the haulage of materials and equipment away from construction work sites.

During operation, potential changes to local amenity may result from realigning the highway either further away from or closer to local communities, houses or businesses. Where the project bypasses towns or localities, reductions in future traffic volumes would help to improve local amenity through reduced traffic noise, improved air quality and enhanced pedestrian amenity and safety. Conversely, where the project moves closer to individual properties or communities, potential impacts may result from increased road traffic noise, and changes in visual amenity.

Social infrastructure

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

- Increased demand for services and facilities, such as medical and emergency services, from an influx of workers to the study area for the project's construction
- Increased construction traffic and construction works, resulting in potential impacts on access to some community facilities
- Changes in amenity of community uses closest to the project, from increased noise and dust and changes in access.

During operation, improved access to regional centres provided by the project would improve access to regional and district level community services and facilities for local residents and visitors. The project would also:

- Provide opportunities to improve access and response patterns for emergency services for communities across the region as well as improve response times to incidents on the highway
- Impact a limited number of community services and facilities, either directly through partial property acquisition or indirectly through changes in access and/or amenity. However, these facilities would be able to continue to operate.

There are no known social housing properties directly impacted by the project.

Tourism and recreation uses

During construction, potential impacts would generally occur for tourism and recreation uses closest to the project through changes in local access and traffic conditions and changes in local amenity. Construction of bridges over the Clarence and Richmond rivers may also disrupt river access and increase noise and dust for recreational users such as recreational fishers and boat users.

Increased demand by construction workers for short-term accommodation such as motels, cabins, caravans and other 'guest' accommodation would provide economic benefits for accommodation owners. However, this may also affect the availability of short-term accommodation, particularly during periods of peak tourist demand. Early and ongoing consultation with accommodation providers would help to ensure demands are appropriately managed.

During operation, the project would support regional tourism through improved access to regional tourist attractions and destinations. A reduction in through traffic in towns bypassed by the project would also support enhanced tourism opportunities in these towns by making them more attractive for travellers to stop. This would also allow improved connectivity to the Clarence and Richmond rivers for recreation and enjoyment. This could strengthen the community's environmental and recreational values linked to these features.

A small number of tourism and recreation uses would be affected by partial property acquisition or through changes to local access, although these uses would be able to continue to operate.

Access and connectivity

During construction, potential impacts on local access and connectivity would include:

- Delays and disruptions in the vicinity of construction works
- Potential impacts on road safety from increased construction traffic and increased hazards near construction works
- Potential impacts of increased traffic and construction works on school bus routes, resulting in potential delays to school buses and safety issues for pedestrians at school bus stops.

During operation, the project would improve regional access and connectivity, including to and between destinations within the region and to destinations in surrounding regions such as south-east Queensland and central NSW, including through improved driving conditions, reduced travel times and improved road safety. Locally, the project may change access and connectivity for residents from rural areas to towns and villages, as well as property access for some properties. This may result in changed trip patterns and increased trip lengths for some local residents.

The project would provide opportunities to improve access and connectivity for pedestrians and cyclists in those towns and villages bypassed by the project, including Woolgoolga, Corindi, Ulmarra, Tyndale, Woodburn, Broadwater and Wardell. In particular, separation of through trips from local trips would reduce heavy vehicles and traffic volumes from these towns, improving safety and ease of access for these local communities.

Impacts on local property access from the operation of the project would include:

- Potential restrictions on the movement of farm equipment and livestock between different areas of farming properties
- Safer and easier access to the existing highway for property owners in those areas where the highway is realigned from the existing highway, from a reduction in traffic volumes
- Longer term changes to access to the New Italy Museum under the class M design, removing direct access to the museum from the highway. Access would be provided via the Woodburn or Iluka Road interchanges and local access roads. The need to maintain access was identified in consultation for the project and loss of direct access is likely to be a concern for this community.

Mitigation measures

The implementation of mitigation and management measures would assist in avoiding or mitigating potential impacts on the social and economic environment during construction and operation, whilst maximising or enhancing project benefits.

In particular, early and ongoing consultation with affected property owners, businesses and communities as well as community participation in the ongoing planning, environmental management and monitoring would be important in avoiding and minimising potential socio-economic impacts from the project's construction and operation. Applying environmental management measures and traffic management plans during construction would also be important in mitigating potential impacts near the project.

In the longer term, key strategies to manage potential impacts include implementation of effective signage for bypassed towns.

1. Introduction

1.1. The project

NSW Roads and Maritime Services (RMS) is seeking project approval for the Woolgoolga to Ballina Pacific Highway upgrade project (the project) which is located on the NSW North Coast. The approval is sought under Part 5.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The project would upgrade around 155 kilometres of highway, forming a major part of the overall Pacific Highway Upgrade Program. The project would provide a four-lane divided carriageway from around five kilometres north of Woolgoolga to around six kilometres south of Ballina. Figure 1-1 shows the regional location of the project.

The project has been divided into eleven sections between tie-ins with the existing Pacific Highway to aid description, and the impact assessment for the project is described for each of these sections (refer to Table 1-1).

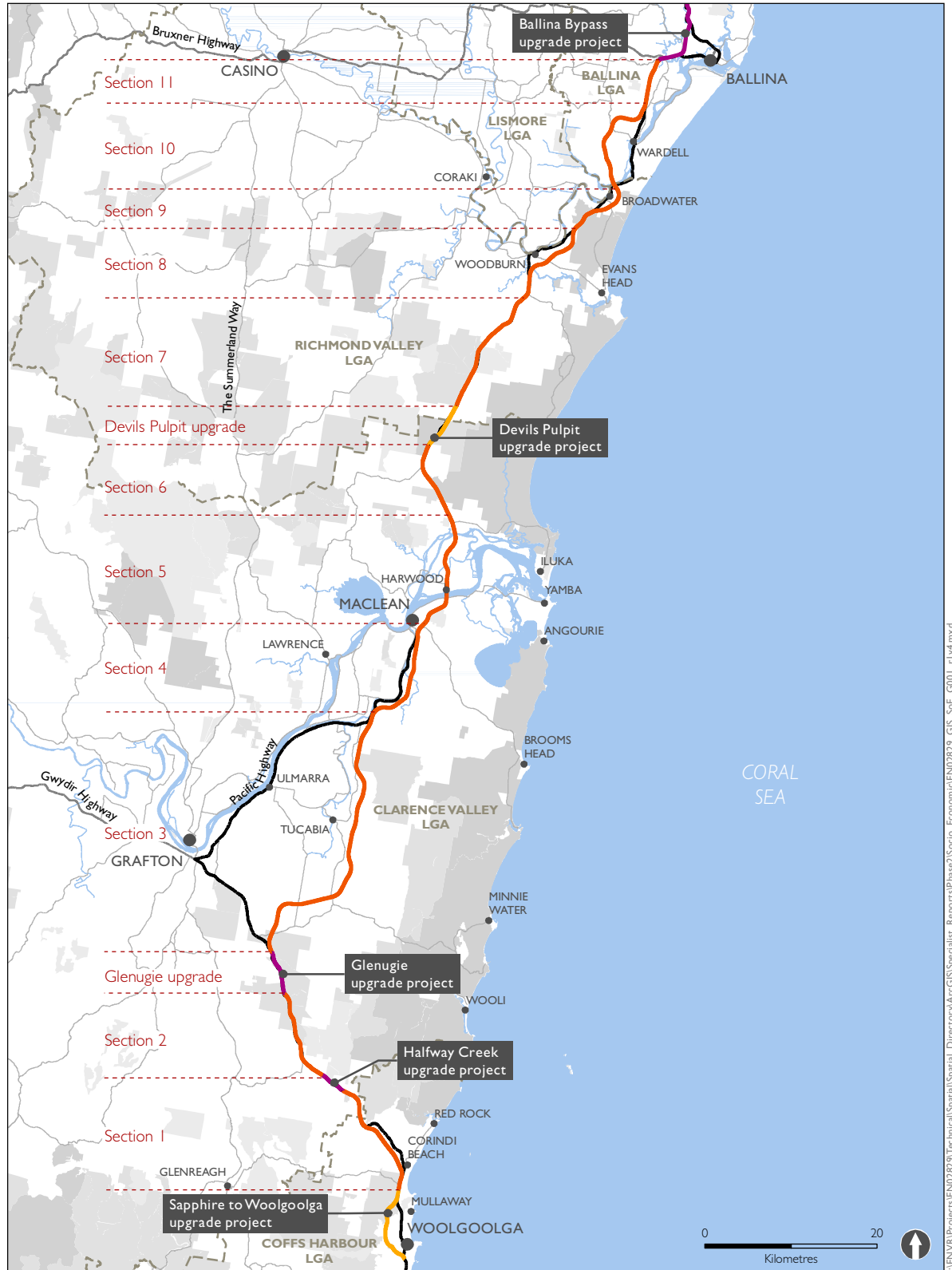
Table 1-1 Project sections and lengths

Project section	Location	Station		Length (kilometres)
		Start	Finish	
1	Woolgoolga to Halfway Creek	0	17.0	17.0
2	Halfway Creek to Glenugie upgrade	17.0	28.7	11.7
3	Glenugie upgrade to Tyndale	33.8	68.8	35.0
4	Tyndale to Maclean	68.8	82.0	13.2
5	Maclean to Iluka Road, Mororo	82.0	96.4	14.4
6	Iluka Road to Devil's Pulpit upgrade	96.4	105.6	9.2
7	Devil's Pulpit upgrade to Trustums Hill	111.1	126.4	15.3
8	Trustums Hill to Broadwater National Park	126.4	137.6	11.2
9	Broadwater National Park to Richmond River	137.6	145.1	7.5
10	Richmond River to Coolgardie Road	145.1	158.6	13.5
11	Coolgardie Road to Ballina bypass	158.6	164.0	5.4

An overview of the project alignment and project sections are shown in Figure 1-2 to Figure 1-6.

Upgrading the Pacific Highway - Woolgoolga to Ballina Upgrade

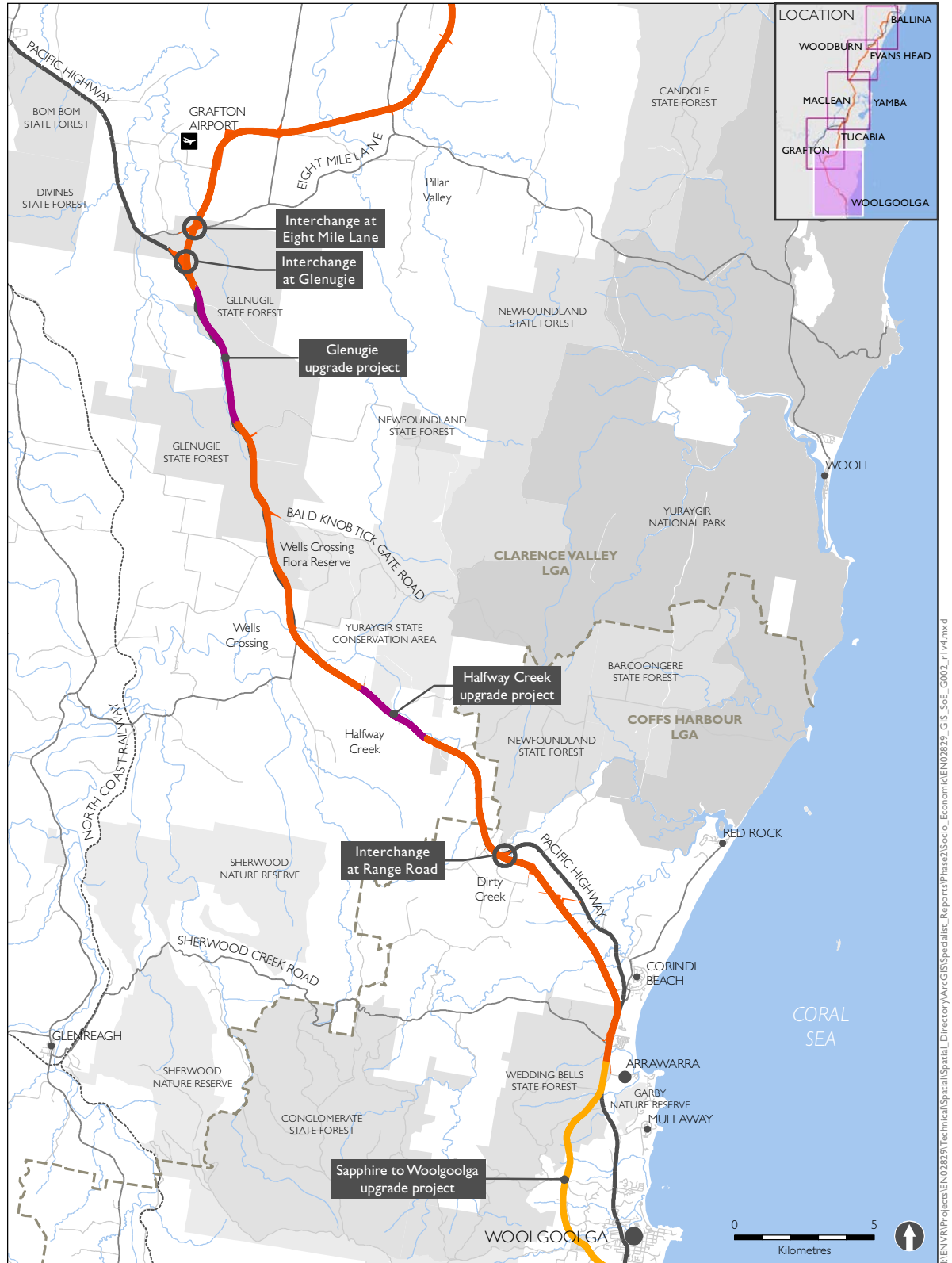
Figure I-1 Project overview



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway

Upgrading the Pacific Highway - Woolgoolga to Ballina Upgrade

Figure 1-2 The project alignment - Arrawarra to Glenugie



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway

Figure I-3 The project alignment - Glenugie to Tyndale

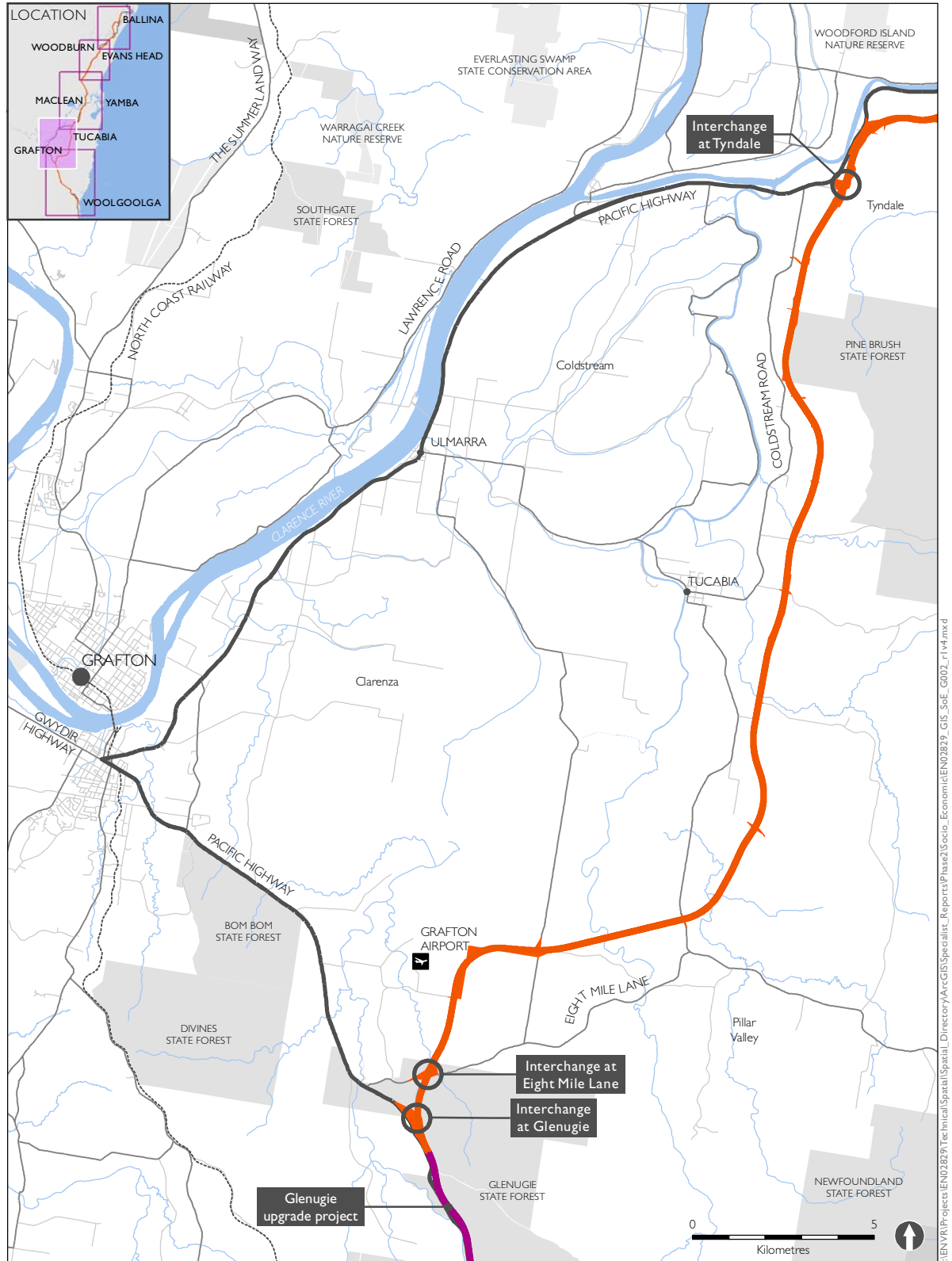
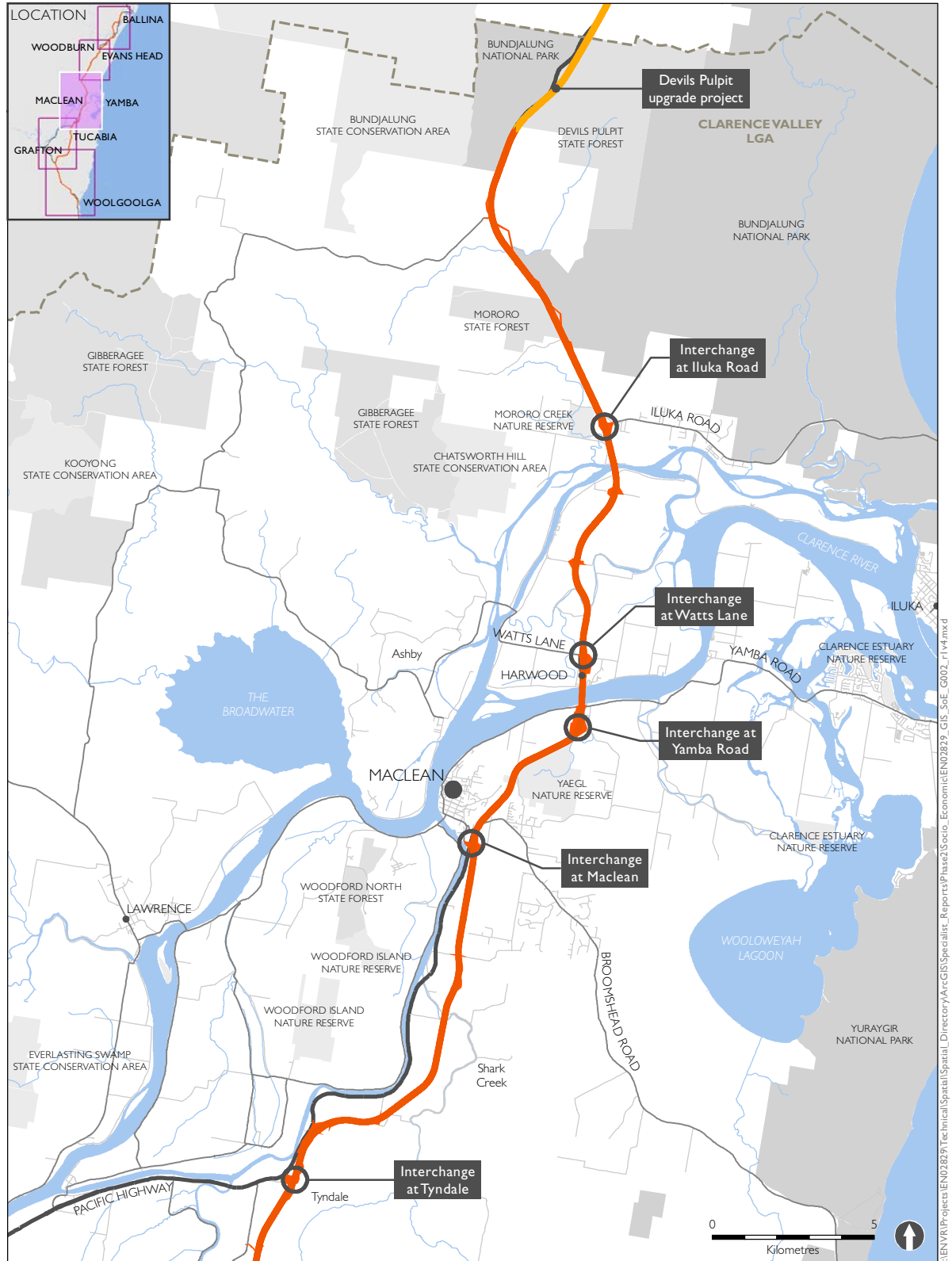
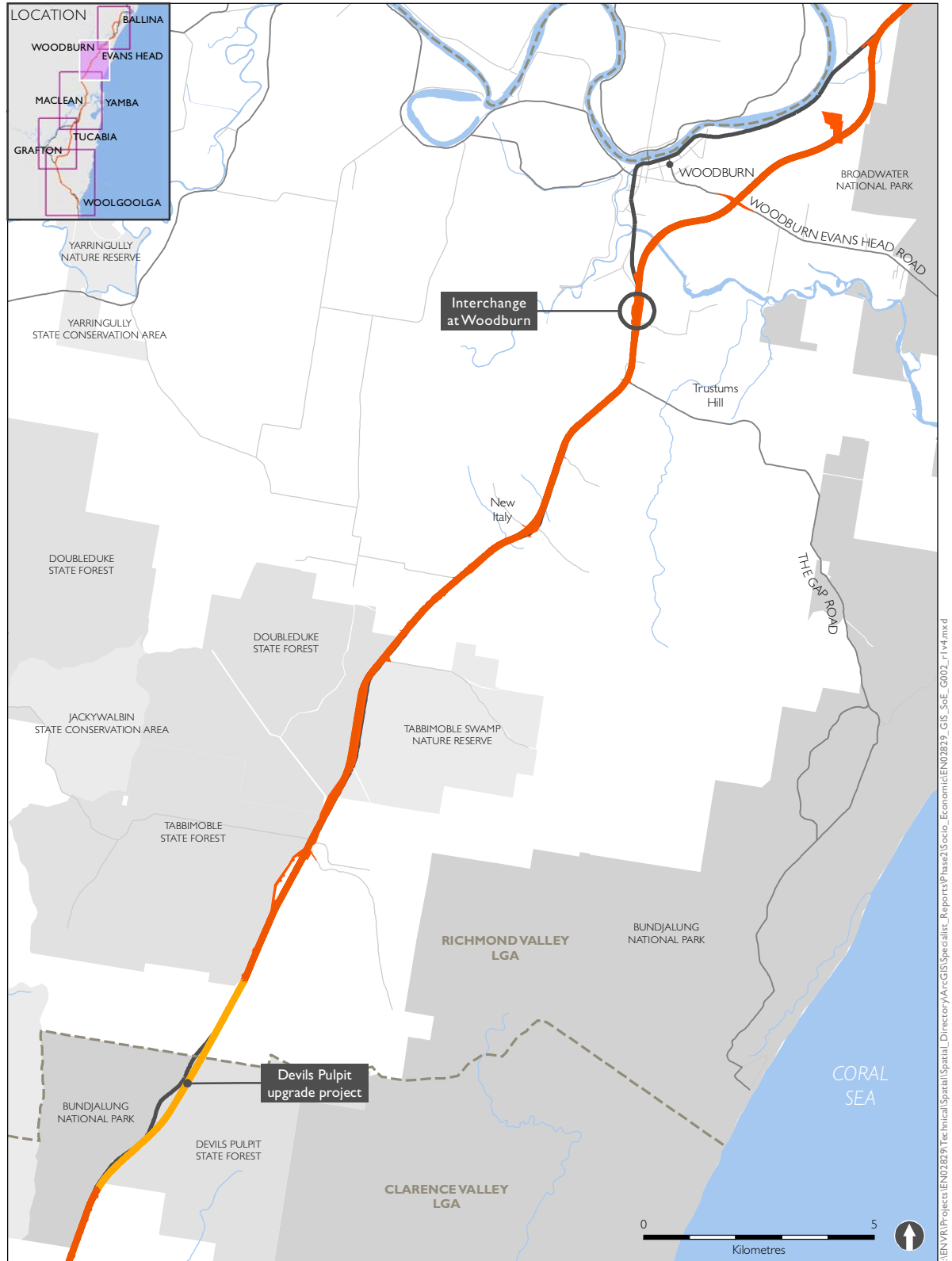


Figure 1-4 The project alignment - Tyndale to Devils Pulpit



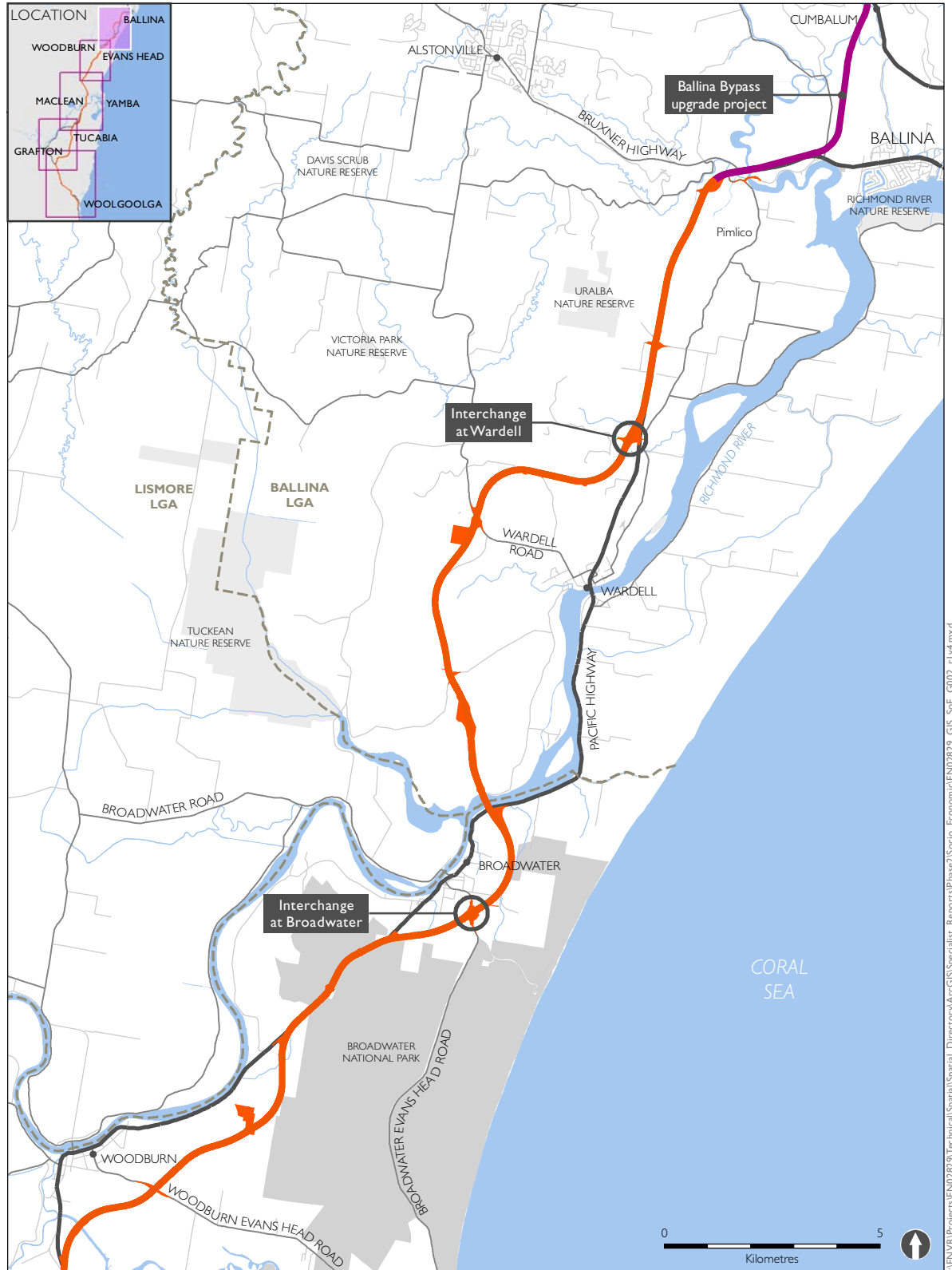
- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway

Figure I-5 The project alignment - Devils Pulpit to Woodburn



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway

Figure I-6 The project alignment - Woodburn to Ballina



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway

While the project is for a four-lane motorway standard upgrade, the construction and opening of the project would be staged. Staging could include some sections being constructed and opened initially as a four-lane arterial standard upgrade.

The project does not include the Pacific Highway upgrades at Glenugie and Devils Pulpit, which are located between Woolgoolga and Ballina, as Glenugie is now complete and Devils Pulpit is under construction. Together with the Glenugie and Devils Pulpit upgrades, the project would complete a total of 164 kilometres of upgraded highway between Woolgoolga and Ballina.

The key features of the project include:

- Around 155 kilometres of motorway standard highway, comprising a four-lane divided carriageway (two lanes in each direction) that can be upgraded to a six-lane divided carriageway in the future, if required
- Bypasses of Grafton, South Grafton, Ulmarra, Woodburn, Broadwater and Wardell.
- Ten interchanges to provide access to and from the upgraded highway at:
 - Range Road (Corindi)
 - Glenugie (Eight Mile Lane)
 - Tyndale (Sheey's Lane)
 - Maclean (Goodwood Street)
 - Yamba Road (Harwood)
 - Watts Lane (Harwood)
 - Iluka Road (Woombah)
 - Woodburn (Trustums Hill Road)
 - Broadwater (Evans Head Road)
 - Wardell (Coolgardie Road)
- About 40 bridge crossings of waterways or floodplains, including bridges over the Clarence and Richmond rivers
- About 55 overbridge and underpasses structures to maintain access along local roads crossed by the project
- Viaducts located where the project would cross low-lying or flood-prone areas
- Service roads and access roads to maintain connections to existing local roads and properties
- Structures to help wildlife cross above or below the project including crossings for tree-dwelling mammals, dedicated culverts under the highway and over-land fauna bridges

- Rest areas located at around 50 kilometre intervals for both northbound and southbound traffic. These are located at:
 - Pine Brush (Tyndale) (north and southbound)
 - Mororo Road (southbound)
 - Richmond River (north and southbound)
 - Heavy vehicle weigh station located near Halfway Creek.

In addition to these key features, the project would include construction sedimentation basins, operational water quality basins and construction facilities such as compounds and batching plants.

Construction would be staged from 2013 onwards following project approval, depending on the availability of funding. Construction of the project would generally comprise the conventional techniques employed on most major highway projects, modified for specific environmental or engineering constraints. RMS seeks approval for construction working hours for all day (8am–5pm) on Saturdays and between 6am and 7pm on weekdays.

An indicative outline of construction activities may include:

- Establishment of the construction site and ancillary facilities
- Enabling works, including adjustments to utilities, property adjustments, works to existing drainage and provision of construction access roads
- Clearing and grubbing of vegetation, stripping of topsoil and stockpiling for re-use
- Construction of road cuttings and embankments
- Treating areas of soft soil to stabilise the underlying soil sub-layers
- Installing drainage and bridging structures
- Laying of pavement materials
- Installing pavement markings, signposting, street lighting and progressive landscaping.

The project would not be built in one phase. The project would be delivered in stages as further funding becomes available and to best manage construction and material resources. Stages would be identified that prioritise and target upgrades and works that would best deliver safety and traffic efficiency improvements, and best deliver value for money outcomes.

This working paper assesses the potential impacts of the full motorway standard upgrade for construction and operation. Where there are relevant differences between the full motorway standard upgrade and the initial upgrade to arterial standard, those impacts are also assessed. Impacts are generally identified through the eleven project sections identified above.

Further information on the description of the project and the assessment of other environmental aspects can be found in the main volume of the environmental impact statement.

1.2. Study area

The study area for this socio-economic study comprises the local government areas of Coffs Harbour, Clarence Valley, Richmond Valley, Lismore and Ballina. These local government areas have been selected based on the location of the project and the potential for the project's construction and/or operation to affect nearby communities and businesses. The study area also acknowledges the movement patterns for people who live or work in the vicinity of the project.

A number of towns and villages that are located near the project have also been considered in this assessment. These include Corindi Beach, Red Rock, Grafton, South Grafton, Ulmarra, Tyndale, Harwood, Woodburn, Broadwater, and Wardell.

1.3. Definitions used in this report

The operational footprint is generally 100 metres wide with interchanges and areas of large cuttings and earth embankments typically being wider. It includes permanent ancillary elements such as local access roads and permanent water quality basins.

The project includes both the construction footprint (including any temporary ancillary elements required for construction) and operational footprint and is the area for which project approval is being sought.

Finally, the study region is discussed in terms of the general landscape in which the project is located, which in the broader context is the NSW North Coast region.

1.4. Study objectives and scope

1.4.1. Director-General requirements

The overall objective of this report is to identify and assess the potential socio-economic impacts for local and regional communities from the upgrade of the project which forms part of the RMS Pacific Highway upgrade program and where required identify feasible impact mitigation measures.

This study addresses the Director-General's environmental assessment requirements for the social and economic environment. These are outlined in Table 1-2 along with where these requirements are addressed in the report.

Table 1-2 Director-General Environmental Assessment Requirements

Requirement	Where addressed in report?
Social and economic impacts on local and regional communities (including towns and villages directly impacted by the project and those bypassed by the project)	Sections 4.1, 4.2, 4.3
Impact on highway-based businesses and agribusinesses from traffic, access, property, public domain and amenity related changes	Sections 4.4, 4.5
Impact of the project on tourist and recreational access and use of towns and villages, National parks and nature reserves, State forests and waterways	Section 4.9

Requirement	Where addressed in report?
Connectivity (including pedestrian and cycleway opportunities) and contiguity of existing and planned settlement and activity clusters	Section 4.10
Supplementary requirements	Where addressed?
A description of long-term and short-term economic and social considerations regarding the project.	Section 4.1 to Section 4.10

1.4.2. Purpose of this report

This socio-economic assessment has been prepared to address the Director-General's environmental assessment requirements for the Pacific Highway Upgrade – Woolgoolga to Ballina (the project) for the purpose of seeking project approval for state significant infrastructure under Part 5.1 of the *Environmental Planning and Assessment Act 1979*.

1.5. Assessment methodology

This section describes the methodology used to assess the social and economic impacts of the project. The key steps in the assessment of socio-economic impacts included:

- Scoping the range of issues relevant to the social and economic environment of the study area and the towns and villages near to the project
- Describing the existing socio-economic environment of the study area to provide a baseline from which impacts of the project can be assessed
- Identifying and assessing the potential socio-economic impacts of the project's construction and operation
- Identifying measures to manage or mitigate potential impacts on the socio-economic environment and maximise potential project benefits.

Further detail on each of these steps is provided in the following sections.

1.5.1. Scoping of issues

This step involved scoping the range of potential social and economic impacts for local and regional communities in the study area, including those communities closest to the project works and towns and villages bypassed by the project. The range of potential impacts considered was informed by:

- The Director-General's environmental assessment requirements
- Social and economic assessments undertaken previously for the development phases of the project
- Socio-economic impact assessments undertaken for road projects elsewhere
- Consultation undertaken for the project, including during the preparation of the environmental impact assessment.

1.5.2. Socio-economic baseline

The description of the existing socio-economic environment provides a baseline of the key social and economic characteristics and conditions of the study area from which potential impacts of the project can be assessed. The description of the existing environment includes both qualitative and quantitative analysis. In particular, it included:

- Review of existing State and local government strategies relevant to the social and economic environment of the study area
- Analysis of key population and demographic indicators, based on the review of data from the Australian Bureau of Statistics (ABS) 2006 Census and other Commonwealth, State and local government agencies, for the study area local government areas and towns and villages near the project
- Analysis of the local and regional economy, including gross regional product, industry, employment and income, housing costs and dwelling characteristics
- Analysis of local and highway based businesses, including a visual survey of businesses adjacent to the existing highway and within towns and villages directly impacted or bypassed by the project. Key drivers that would affect highway based businesses were also identified, considering changes to accessibility and traffic, visibility, operating amenity and public domain
- Analysis of key characteristics relating to the agricultural industry and agribusinesses in the study area
- Review of existing social infrastructure in the study area, including services and facilities that support quality of life and well-being
- Identification of existing community values, relating to factors such as the natural environment, local character and amenity, community health and safety, and local access and connectivity. The identification of community values was informed by existing local and state government social policies, outcomes of community consultation, literature reviews and data analysis and observation of conditions in the study area
- Identification of tourist and recreational uses in the study area, including tourist destinations and facilities, towns and villages, national parks and nature reserves, State forests and waterways
- Analysis of existing transport and access, including the local and regional road network, bus transport, and walking and cycling facilities.

1.5.3. Identification and assessment of socio-economic impacts

Potential benefits for and impacts on the social and economic environment of the study area were identified and evaluated. This included an assessment of direct and indirect impacts associated with the project's design, construction and operation.

The assessment of social and economic impacts on local and regional communities, including towns and villages directly impacted or those bypassed by the project, included consideration of:

- Property impacts, such as the impacts of property acquisition and the impacts on property values.
- Changes to local and regional population and demography

- Impacts on community values, such as those relating to the natural environment, local character and amenity, community health and safety and local access and connectivity
- Impacts on local amenity, including positive impacts for those towns and villages bypassed by the project and adverse impacts for those communities where the road has been realigned closer
- Potential impacts on social infrastructure, including both direct and indirect impacts on local, district and regional level community services and facilities
- Impacts on the local and regional economy, including a qualitative discussion of the economic contribution of the project, economic benefits associated with improved connectivity across the region, and economic benefits associated with reduced congestion
- Impact on highway based businesses, with regard to the key drivers of profitability, viability, productivity and sustainability
- Impact on agribusiness, including the proportion of agricultural land “lost” to the project
- Potential impacts and opportunities for tourist and recreational access and use of towns and villages, national parks and nature reserves, State forests and waterways. This considered both direct impacts from property acquisition and indirect impacts resulting from changes in access, amenity and demand
- Changes to local and regional access and connectivity, including for motorists, pedestrians and cyclists. This included consideration of connectivity and contiguity of existing and planned settlement and activity clusters.

1.5.4. Identification of mitigation measures

Measures were also identified to enhance the project’s benefits and avoid or reduce the impact of the project’s construction on local and regional communities. This considered the predicted impact resulting from the project, measures used in other transport projects and the suitability of these measures for this project.

The identified mitigation and management measures include:

- Strategies to minimise adverse impacts on local business, industry and tourism from the project’s construction and operation, and opportunities to maximise potential beneficial impacts of the project, including for those towns and villages bypassed by the project
- Measures to avoid or minimise impacts on amenity, health and well-being, and access and connectivity for communities and areas closest to the project works
- Measures to avoid or minimise impacts on local and regional infrastructure.

1.6. Community and stakeholder consultation

Community and stakeholder consultation – including with affected property owners, local communities, business and industry organisations, and State and local government agencies – has formed an integral part of the project development, including during the preparation of the environmental impact assessment. The consultation chapter of the EIS provides an overview of community and stakeholder consultation undertaken for the project, along with the key issues raised.

This socio-economic impact assessment has been informed by the outcomes of this consultation process, including the identification of community values and potential benefits and impacts of the project. In addition, consultation with key stakeholders was undertaken to clarify specific issues and identify appropriate strategies for impact mitigation and management. This included consultation with relevant State government agencies, local governments in the study area, and managers of community facilities. Throughout the preparation of the environmental assessment, consultation has also been ongoing with the NSW Department of Planning, NSW Department of Environment, Climate Change and Water, and the NSW Department of Trade and Investment, Regional Infrastructure and Services.

2. Government strategies

Chapter 2 provides an overview of the government strategies relevant to the project, including regional planning and socio-economic policies and strategies.

2.1. Mid North Coast Regional Strategy

The *Mid North Coast Regional Strategy* (NSW Department of Planning, 2009) establishes the guiding principles for planning and managing the future sustainable growth of the NSW Mid North Coast. The strategy recognises the Pacific Highway as the primary north–south corridor for both inter- and intra-regional movements. It identifies the growth pressures that would be faced by the region and the importance of safe and efficient transport connections within and between regions along the Sydney–Brisbane corridor. The project would assist by further improving traffic safety and efficiency for the Mid North Coast region.

The strategy identifies encouraging new export industries to give the regional economy greater diversity and resilience and ensuring that the jobs market offers a broader mix of employment options as a key challenge facing the region. The Pacific Highway provides the critical link between Mid North Coast producers and the major ports along the east coast. The project directly responds to this challenge, by reducing travel costs (of both intermediate goods and end product) and increasing competitiveness. There is also scope for the project to deepen regional labour market through better access to jobs.

The strategy identifies a hierarchy of settlements comprising:

- Major regional centres, which are the focus of settlement, employment and regional services. Major regional centres in the study area include Grafton and Coffs Harbour
- Major towns, which support major regional centres by providing outreaches of regional services. Major towns near the project include Maclean and Woolgoolga
- Towns, which provide services to their local area. Towns near to the project include Yamba
- Inland and coastal villages, which are smaller settlements offering limited local services. A number of villages are located across the study area, including Harwood, Ulmarra and Tucabia.

The strategy also identifies proposed future urban release areas, which are to be developed to function as new communities with service provision to match the future population of the area. Gulmarrad and Townsend near Maclean are identified as future urban release areas. The plan outlines a number of settlement planning principles to guide new growth areas for centres, towns and villages. The location of new settlement areas to enable the integration of transport services with the provision of community services and retail activity is identified as a key principle for settlement planning.

The strategy recognises the need for some commercial opportunities to be provided along the Pacific Highway in accordance with the NSW Government's Highway Service Centres Policy. Highway service centres are to be well located and contain limited defined uses. The strategy identifies locations for possible highway service centres at Maclean and Woolgoolga.

2.2. Far North Coast Regional Strategy

The *Far North Coast Regional Strategy* (Department of Planning, 2006) covers the local government areas of Ballina, Byron, Kyogle, Lismore, Richmond Valley and Tweed. The objective of the strategy is to guide sustainable growth in the region over the next 25 years.

The strategy represents the agreed NSW Government position on the future of the Far North Coast and is the overriding strategic planning document for the region. It aims to ensure that future development caters for the expected growth in population and employment, while protecting the region's highly valuable natural and cultural resources.

The strategy recognises the Pacific Highway as the primary north–south corridor for both inter- and intra-regional movements. It identifies the growth pressures that would be faced by the region and the importance of safe and efficient transport connections within and between regions along the Sydney–Brisbane corridor. Improvements to the Pacific Highway would provide greater transport efficiency and safety for residents and for intra- and inter-state movements.

Aims of the strategy relevant to the project include:

- Identifying and protecting important environmental assets, landscape and cultural values and natural resources
- Limiting development in places constrained by coastal processes, flooding, wetlands, important farmland and landscapes of high scenic, cultural and conservation value
- Ensuring provision of adequate land for new business and industry is well linked to transport and services, considering the advantages from the upgrading of the Pacific Highway which would support the creation of the predicted additional 32,500 jobs needed in the region.

The strategy suggests planning for commercial and industrial land uses should consider their location, particularly in relation to relevant infrastructure, transport and access. The strategy also suggests safe evacuation routes need to be identified to minimise the risk to human health and life from flooding.

The strategy identifies a hierarchy of settlements comprising:

- Major regional centres, which are the focus of settlement, employment and regional services. Ballina is identified as a developing major regional centre
- Major towns, which support major regional centres by providing outreaches of regional services. The nearest major towns near the project include Murwillumbah and Casino
- Towns, which provide services to their local area. The closest town near to the project is Byron Bay
- Inland and coastal villages, which are smaller settlements offering limited local services. A number of villages are located across the study area, including Wardell, Broadwater, Woodburn and Evans Head.

The strategy identifies the need for well located highway service centres, with limited defined uses, to be located beside the Pacific Highway at Chinderah and Ballina.

The project would create opportunities for increased commercial, retail and residential land along the Pacific Highway between Woolgoolga and Ballina. The locations would need to be investigated further to ensure that adequate measures are in place for localised infrastructure to support these new areas.

The economic challenges highlighted in the strategy emphasise the need for diversification in the economy. Upgrading the highway would facilitate diversification by improving accessibility and connectivity within and between regions. In particular, diversification could be encouraged through new and emerging opportunities to take advantage of the North Coast region’s relationship with South East Queensland.

2.3. Local government area strategies

2.3.1. Coffs Harbour City Council

The key local government strategy for the Coffs Harbour City local government area is the *Coffs Harbour 2030 Community Vision* (Community Vision). The Community Vision was developed in 2008 and outlines strategies for delivering a more sustainable Coffs Harbour to the year 2030 and beyond. The vision identifies the desired outcomes of the community based on five themes:

- Learning and prospering – we are a prosperous and learning community
- Places for living – our built environment connects us and supports us in living sustainably
- Moving around – we are moving around easily, safely and sustainably
- Looking after our community – our communities are healthy, informed and engaged
- Looking after our environment – our natural environment is protected and conserved for future generations.

The Community Vision is supported by the Coffs Harbour 2030 Plan – A Strategic Plan for the Coffs Harbour Community. Released in December 2009, the plan outlines the objectives and strategies for achieving the community’s vision and desired outcomes for 2030. Strategies relevant to the project are outlined in Table 2-1.

Table 2-1 Coffs Harbour 2030 – strategies relevant to the project

Outcome	Objective	Strategy
PL2 – We have created through our urban spaces, a strong sense of community, identity and place.	We have beautiful, liveable and accessible spaces for all our people to enjoy.	Ensure urban areas have a focus as gathering places for people rather than cars
PL3 – We have vibrant rural communities.	Our villages are revitalised and maintain their unique identities.	Provide connections for all between communities and other centres
MA3 – We are well connected to each other and services.	We have a system of well maintained and safe roads for all users.	Reduce the impact of the Highway on the community
	We have become an integrated regional transportation hub.	Develop coastal freight transport opportunities
LC1 – We are healthy and strong.	We live in a safe, caring and inclusive community.	Promote a safe community.

Source: Coffs Harbour Council 2009

2.3.2. Clarence Valley Council

Valley Vision 2020

The *Valley Vision 2020* was released by the Clarence Valley Council in July 2008. It is the corporate strategic plan for the Council and articulates the Council and community vision for the future of the Clarence Valley and key strategies to achieve the vision. The vision described in the plan is for “a sustainable Clarence Valley: life in the Clarence Valley, now and in the future, is based on a culture of living sustainably that protects and carefully utilises the natural environment, its beauty and resources, our cultural heritage and unique identity of our valley and its communities”.

The *Valley Vision 2020* provides the blueprint for Council to deliver identified outcomes based on five elements. Those elements of relevant to the project include:

- Ecology
- Economy
- Society and culture
- Human habitat.

Table 2-2 outlines those elements that are relevant to the project, along with aims and goals from the *Valley Vision 2020*.

Table 2-2 Valley Vision 2020 – aims and goals relevant to the project

Element	Aim	Key goals relevant to the project
Ecology	Protect and maintain a robust, healthy natural environment, and visually diverse natural landscape, including the rivers, wetlands, forests, floodplain and coastline, and ecological values in our settlement areas, activity protected and cared for by our whole community, supported by effective resources and environmental education.	<ul style="list-style-type: none"> • Protecting the land • Maintaining healthy waterways • Protecting biodiversity
Economy	Community well-being and prosperity to be supported by economic activity involving meaningful paid and voluntary work, clean green industry and business, and aware consumers that use water, energy and other resources wisely.	<ul style="list-style-type: none"> • Healthy economic activity • Meaningful work and employment
Society and culture	Creative valley cultures, rich in history and diversity, to be supported by good information, education, health, recreation and other services, providing opportunities for quality lifestyles involving a sense of well-being, access and equity in which we value our communities and each other.	<ul style="list-style-type: none"> • Creative culture and recreation • Good community relations

Element	Aim	Key goals relevant to the project
Human habitat	Live in sustainable communities, including a healthy natural environment supported by efficient and effective essential services and transport systems, our homes and streetscapes reflecting local heritages, character and charm.	<ul style="list-style-type: none"> • Quality built environment and places • Efficient transport and access

Source: Clarence Valley Council (2008), Valley Vision 2020

Social Plan 2010-2014

The Clarence Valley Council released the Social Plan 2010-2014 in March 2010. The plan provides the framework for achieving the society and culture element of the Valley Vision 2020, identifying key social needs and developing action plans that respond to these needs.

The plan identifies needs and issues for target groups, including villages and rural communities. Access to services and facilities including health, education and recreation facilities were identified as key issues for residents of these communities. The plan also identifies a number of council wide issues that are relevant to the project, such as:

- Availability and access to employment, education, health and community support services
- Transport and access, particularly public transport availability
- Access to opportunities for people to meet, cultural activities, recreation and leisure.

2.3.3. Richmond Valley Council

The key local government strategy for the Richmond Valley local government area is the *Richmond Valley Council's Community Strategic Plan 2011/2024*, which was adopted by Council in May 2011. The Strategic Plan identifies the community's priorities and aspirations for the future and provides strategies for achieving outcomes related to those priorities and aspirations. The plan focuses on seven areas to achieve Council's vision for the "*development of community and natural attributes of the area to enable a pleasant and sustainable lifestyle*", including:

- Environment
- Local economy
- Community and culture
- Rural and urban development
- Transport and infrastructure.

The long-term goals identified for these focus areas are outlined in Table 2-3. Overall, the project supports the goals of the Community Strategic Plan 2011/2024.

Table 2-3 Community Strategic Plan – goals relevant to the project

Focus area	Long-term goals
Environment	<ul style="list-style-type: none"> • Clean up and preserve the health of our rivers • Protect local wetlands • Reduce local carbon and chemical pollution • Manage local tourism with regard for environmental protection.
Local economy	<ul style="list-style-type: none"> • Increased tourism in Richmond Valley • More vibrant town centres • Diverse rural industries • All local shops occupied and prosperous • Increased availability of industrial land • Council pro-active in local business development.
Community and culture	<ul style="list-style-type: none"> • Increased community safety in local towns • Minimise disruption and damage to properties as a result of flooding • A strong sense of place in local communities based on strong inclusion values.
Rural and urban development	<ul style="list-style-type: none"> • Future urban development is balanced and sustainable • Release and rezone more appropriate land for urban development • Introduce development controls to retain country atmosphere • Ensure that local services and infrastructure are adequate to meet the demands of urban development.
Transport and infrastructure	<ul style="list-style-type: none"> • Local and state roads are well maintained and improved • Ensure better cross-council co-ordination to enable better road access during floods • Better local public transport to enable movement between local and regional centres.

Source: Richmond Valley Council 2011

2.3.4. Lismore City Council

The key local government strategy for the Lismore City LGA is the *Community Strategic Plan 2008-2018*, which outlines Lismore City Council’s vision for the Lismore region.

The plan identifies four guiding principles to achieve the City’s vision as “*a great place to live and work*”. The plan identifies 22 strategic priorities, including guiding principles that guide Council’s decision making, community strategic priorities that outline how Council will meet the needs of the community, and corporate foundations.

The guiding principles relevant to the project are outlined in Table 2-4 along with intended outcomes.

Table 2-4 Community Strategic Plan – strategic priorities relevant to the project

Strategic priority	Outcomes
Social inclusion and participation	<ul style="list-style-type: none"> That all Lismore residents enjoy equal opportunities within a strong, inclusive community
Sustainable economic growth and development	<ul style="list-style-type: none"> That Lismore's economy is vibrant and development is environmentally and socially sustainable
Protect, conserve and enhance the environment and biodiversity	<ul style="list-style-type: none"> That Lismore's natural ecology is protected and maintained in a healthy and robust state for future generations
Provide sustainable land use planning	<ul style="list-style-type: none"> That land use planning is founded on principles of sustainability
Improve catchment management	<ul style="list-style-type: none"> That catchment management is integrated and holistic, in order to achieve a sustainable and balanced use of natural resources
Improved roads, cycleways and footpaths	<ul style="list-style-type: none"> That Lismore has an extensive transport network and is an accessible, safe and efficient city for motorists, cyclists and pedestrians
Mitigate and adapt to climate change at a local level	<ul style="list-style-type: none"> That Lismore is a leader in reducing carbon emissions and minimising the impacts of climate change.

Source: Lismore City Council

The Community Strategic Plan is supported by the Lismore City Council Delivery Plan 2010-2014, which outlines the activity to be completed by Council to implement the strategic plan.

2.3.5. Ballina Shire Council

Community Strategic Plan 2010–2025

The Ballina Shire Council *Community Strategic Plan 2010–2025* provides a framework for the development of a more sustainable shire between now and 2025. The plan defines Council's vision as "a shire that provides a healthy lifestyle, a prosperous natural environment and a community with a strong sense of place". The plan outlines eight objectives to achieve this vision, the following of which are relevant to the project:

- A built environment contributing to health and well-being
- A diverse and prosperous economy
- A natural healthy environment
- A diverse and balanced use of land
- People attaining health and well-being
- Resilient and adaptable communities.

The plan identifies 26 desired outcomes that relate to one or more of these objectives. The outcomes relevant to the project include:

- Efficient and effective integrated transport
- Infrastructure and facilities that meet individual and community needs
- Maintain our diverse and attractive landscapes
- Respect the needs of different land users and land uses
- Maintain and improve our land-based productivity
- Preserve the potential for agricultural land and important extractive resources
- Recognition and valuing of our natural, cultural and built heritage
- Buildings, infrastructure and public spaces that complement our natural environment
- Integrated land use
- Effective engagement with our neighbouring areas and within the region
- Viable local business.

The plan also sets out a number of detailed actions to achieve the desired outcomes and objectives.

Ballina Shire Council Social Plan 2009

The *Ballina Shire Council Social Plan* was released by Council in November 2009. The plan identifies the issues and needs of groups within the shire and sets out the actions that Council undertakes. The plan also identifies actions that Council can take to help address identified needs.

The plan is structured around seven target groups identified by the NSW Department of Local Government, including children, women, young people, elderly, people with disabilities, Aboriginal and Torres Strait Islander people and people with culturally and linguistically diverse backgrounds. Transport was raised as an issue across all target groups, particularly in relation to difficulties faced by those groups without private transport access to medical, financial, commercial and recreational services. The plan does not identify any specific actions relevant to the project.

3. Existing environment

Chapter 3 provides an overview of the existing socio-economic environment of the study area. This provides a baseline against which the project's impacts on the socio-economic environment can be assessed. It provides a description of the regional socio-economic context, key characteristics of the study area's population and economy, local business and industry, social infrastructure and community values.

3.1. Regional context

The project extends from Coffs Harbour local government area in the south to Ballina local government area in the north. Communities within the study area are diverse and generally include:

- Regional urban communities such as Coffs Harbour, Woolgoolga, Grafton, Maclean, Lismore and Ballina
- Small inland rural communities including New Italy, Tucabia, Ulmarra, Harwood, Woodburn, Broadwater and Wardell
- Coastal towns such as Yamba, Iluka and Evans Head
- Coastal tourist communities such as Wooli and Minnie Waters.

The following provides a brief overview of each of the study area local government areas. Detailed information on the socio-economic characteristics of each of the local government areas is provided in Section 3.2.

Coffs Harbour

The Coffs Harbour local government area covers about 1200 square kilometres (km²) and is a predominantly rural area, with expanding residential, rural residential and resort areas, as well as some industrial and commercial land use. Much of the rural area is used for timber production and agriculture, particularly banana growing and blueberry farming between Corindi and Woolgoolga. Tourism is an important industry, particularly focussing on the local government area's coastal areas. The local government area includes substantial areas of national park, State forest, parkland, coastline and beaches.

The town of Coffs Harbour is the primary urban centre for the local government area and wider region. Other towns and villages within the local government area that are potentially affected by the project include Corindi Beach and Red Rock.

Clarence Valley

Clarence Valley local government area is located on the Mid North Coast, about 600 kilometres north of Sydney. The local government area covers about 10,440 km².

The local government area is predominantly rural, with expanding residential areas. Much of the rural area is used for forestry, agriculture and grazing, including beef cattle and sugarcane growing, with fishing an important industry. Tourism has become a major industry in recent years, particularly in coastal

areas but also in inland towns adjacent to the Clarence River, such as Ulmarra and Grafton. Large areas of the local government area comprise national park, State forest and nature reserves including beaches, rainforests, mountains and rivers.

The town of Grafton is the local government area's main urban centre, with other main towns including Maclean, Yamba and Iluka. The local government area includes a number of smaller villages and towns along the coast or inland, particularly adjacent to the Clarence River. Those near the project include Tucabia, Ulmarra, Tyndale, and Harwood (Clarence Valley Council, 2010).

Richmond Valley

Richmond Valley local government area is located in the Northern Rivers region. The local government area covers about 3051 km² and is bounded by Clarence Valley local government area to the south, Kyogle local government area to the north-west and Lismore and Ballina local government areas to the north.

The local government area is predominantly rural with Casino and its immediate surrounds known for beef cattle, timber-cutting and agriculture, with sugarcane growing centred on the lower river areas of Broadwater and Woodburn. Tourism is an important industry, particularly on the coast. The local government area includes extensive areas of national park, nature reserves and conservation areas, particularly nearer to the coast. Casino is the local government area's main urban centre, with other towns and villages including Evans Head, Broadwater, Coraki, Rileys Hill, Woodburn, Whiporie and Rappville.

Lismore

Lismore local government area is located in the Northern Rivers region. The local government area covers about 1267 km². The local government area is predominantly rural, with the rural area comprising about 96 per cent of the local government area.

The urban area of Lismore/Goonellabah is the main centre of the local government area, with a number of smaller towns and rural villages such as Alstonville, scattered throughout the local government area. Lismore is a major regional hub for the Far North Coast region, with people from adjoining local government areas travelling to the town to access services and facilities such as healthcare and education (Lismore City Council, 2004).

Ballina

Ballina local government area covers about 487 km². It is bounded by Tweed and Byron local government areas to the north, Lismore to the west and Richmond Valley to the south.

The local government area is characterised by natural features such as the coast, Richmond River, the escarpment and the plateau. The local government area has a strong tourism and fishing industry, as well as a growing commercial and retail industry. It has a range of agricultural industries producing sugar, macadamia nuts, coffee, dairy, beef, avocado and stone fruit and medicinal plant crops (www.ballina.nsw.gov.au). The town of Ballina is the main urban area and commercial centre for the local government area and wider region. A number of smaller villages and towns are located along the coast and in the hinterland, including Wardell, which is located nearest to the project.

3.2. Socio-economic profile

This section describes the key population, demographic, housing and economic characteristics of the study area.

It provides an overview of those groups within the community that may be vulnerable to changes brought about by the project due to their level of economic resources, age or need for assistance as well as businesses and industry that may change as a result of the project's construction and/or operation.

Data is provided for each of the study area local government areas, with data on regional NSW also provided as a comparison. The information presented is primarily based on data from the 2006 Australian Bureau of Statistics (ABS) Census, supplemented with information from other relevant sources, including the NSW Government, Commonwealth Government and individual councils.

3.2.1. Population size, growth and mobility

In 2006, the study area local government areas had a combined population of about 215,000 people. In June 2009, the combined estimated residential population (ERP) was about 234,700 people. The Coffs Harbour local government area comprised the largest residential population followed by Clarence Valley and Lismore local government areas, as shown in Table 3-1.

Over the five years to 2009, the local government areas generally had relatively high average rates of residential population growth with each of the local government areas experiencing average rates of growth the same or higher than regional NSW. However, between 2008 and 2009, the residential population in the Lismore and Richmond Valley local government areas grew at a lower rate than regional NSW.

Between 2008 and 2009, the Richmond Valley local government area experienced a slowdown in population growth compared to the average growth rate for the five years to 2009, while Clarence Valley experienced an increase in population growth.

Table 3-1 Population data for local government areas in the study area

Local government area	2006 Census	ERP at 30 June			Change		
		2004	2008	2009	2004–09	2008–09	
		No.	No.	No.	%	No.	% per annum
Coffs Harbour	64,912	66,188	70,681	71,677	1.6	996	1.4
Clarence Valley	48,147	49,183	51,231	52,054	1.1	823	1.6
Richmond Valley	21,312	21,382	22,772	22,934	1.4	162	0.7
Lismore	42,210	43,199	45,190	45,645	1.1	455	1.0
Ballina	38,461	39,567	41,860	42,432	1.4	572	1.4
Regional NSW*	2,419,815	2,492,941	2,595,812	2,629,952	1.1	34,140	1.3

* Note: Information for Regional NSW has been calculated using ERP for NSW minus ERP for Sydney Statistical Division

Sources: ABS Census 2006 and 2010, Cat No. 3218.0 Regional Population Growth, Australia, 2008–2009; ABS 2010, Cat No. 3218.0 Regional Population Growth, Australia, 2008–2009

The total population of the study area local government areas is predicted to grow by about 65,000 people by 2036, providing a total population of about 289,700 people (refer Table 3-2). Much of this growth is predicted to occur in the Coffs Harbour local government area, which is expected to have a population of more than 100,000 people, a growth of about 50 per cent from 2006. Ballina is also expected to experience a high rate of population growth, growing by about 40 per cent from 2006 to about 56,200 people by 2036.

Table 3-2 Population projections (2006 to 2036)

Local government area	Year			Change 2006–36		
	2006	2016	2026	2036	No.	% per annum
Coffs Harbour	67,900	79,900	91,600	101,800	33,900	1.7
Clarence Valley	50,100	53,200	55,700	57,300	7200	0.5
Richmond Valley	22,100	23,300	24,400	25,200	3100	0.5
Lismore	44,200	45,900	47,700	49,200	5000	0.4
Ballina	40,300	45,800	51,300	56,200	15,900	1.3
Regional NSW	2,534,100	2,737,600	2,928,300	3,084,000	549,900	0.7

Source: Department of Planning, 2010, New South Wales Statistical Local Area Population projections, 2006–2036

The study area local government areas generally had a more transient population compared to regional NSW as a whole, with most local government areas having higher levels of population mobility over both 12 months and five years prior to the 2006 Census. The exception was the Richmond Valley local government area, which had a lower level of population mobility over the 12 months to 2006 and a similar level of mobility over the five years to 2006, compared to regional NSW as a whole (refer Table 3-3). This relatively high population mobility is likely to reflect the trend over recent years of ‘tree-changers’ and ‘sea-changers’ moving to the area for lifestyle or more affordable retirement options.

Table 3-3 Population mobility, 2006

Local government area	People at same address 12 months previous (%)	People at same address five years previous (%)
Coffs Harbour	78.7	50.2
Clarence Valley	80.7	54.9
Richmond Valley	81.2	55.5
Lismore	78.8	52.8
Ballina	79.6	51.6
Regional NSW	80.4	55.5

Source: ABS Census 2006

3.2.2. Age profile

The study area generally had a higher proportion of older people compared to regional NSW, with all local government areas except Lismore having higher proportions of people aged 65 years or over, as shown in Table 3-4. The lower proportion of older people in the Lismore local government area is likely to reflect the more urban nature of the local government area and the presence of tertiary education facilities such as the Southern Cross University located in Lismore.

The high proportion of older people across the study area generally is likely to reflect the trend over recent years of ‘tree-changers’ and ‘sea-changers’ moving to the area.

Each of the local government areas, with the exception of Richmond Valley, had levels of children aged 14 years or under the same as or slightly less than the level within regional NSW as a whole.

Table 3-4 Age profile, 2006

Local government area	0–14 years (%)		65 years or over (%)	
	No.	%	No.	%
Coffs Harbour	13,152	20.3	10,801	16.6
Clarence Valley	9546	19.8	9306	19.3
Richmond Valley	4609	21.6	3807	17.9
Lismore	8622	20.4	5745	13.6
Ballina	7216	18.8	7526	19.6
Regional NSW	492,932	20.4	398,969	16.5

Source: ABS Census 2006

The proportion of older people within the study area is expected to grow in coming years. In 2036, with the exception of Lismore, older people are forecast to comprise about 30 per cent or more of each local government area’s population. At the same time, the proportion of children is generally expected to decrease. However, the Lismore and Richmond Valley local government areas are expected to continue to have higher proportions of children compared to regional NSW (refer Table 3-5).

This decrease in the proportion of children and increase in the proportion of older residents is consistent with the trend across Australia of an ageing population but is also likely to reflect the attractiveness of the region for older people in search of more affordable retirement options.

Table 3-5 Age profile, 2006–2036

Local government area	0–14 years (%)		65 years or over (%)	
	2006	2036	2006	2036
Coffs Harbour	20.1	16.3	16.2	30.8
Clarence Valley	19.8	14.9	18.9	35.0
Richmond Valley	21.6	17.1	17.5	29.4
Lismore	20.2	17.2	13.3	22.3
Ballina	18.6	15.9	19.1	30.4
Regional NSW	20.2	16.6	16.1	28.2

Source: Department of Planning, 2010, New South Wales Statistical Local Area Population projections, 2006–2036

3.2.3. Household and families

In 2006, there were about 82,000 households in the study area local government areas. The area had a high proportion of lone-person households, with each local government area apart from Coffs Harbour having proportions of this household type above regional NSW. This is consistent with the older populations of the study area local government areas.

The local government areas of Ballina and Clarence Valley had proportions of couple-only families significantly higher than regional NSW at the 2006 Census, which is reflective of the older age profiles of these local government areas and the trend for younger people to move from rural areas for work or education.

All local government areas had proportions of couple families with children below the proportion for regional NSW while proportions of one-parent families were above that for regional NSW (refer Table 3-6).

Table 3-6 Households and families, 2006

Local government area	Average household size	Lone-person households (%)	Couple-only families (%)	Couple families with children (%)	One-parent families (%)
Coffs Harbour	2.5	25.5	41.0	38.3	19.6
Clarence Valley	2.4	26.6	45.7	36.0	17.2
Richmond Valley	2.5	26.5	39.8	39.5	19.1
Lismore	2.5	26.1	37.7	40.8	20.0
Ballina	2.4	27.0	44.0	37.7	17.1
Regional NSW	2.5	25.9	40.7	41.2	16.8

Source: ABS Census 2006

3.2.4. Advantage/Disadvantage

The ABS produces a number of Socio-economic Indices for Areas (SEIFA) that identify areas of relative advantage and disadvantage based on Census data.

The index of relative socio-economic advantage/disadvantage is a continuum of advantage to disadvantage. It considers indicators relating to family income, education, occupation type, wealth and living conditions to determine the relative level of advantage or disadvantage an area may experience relative to all other areas in Australia. While a score in the fifth or sixth decile¹ is average, a higher decile

¹ Deciles divide a distribution into ten equal groups. The lowest scoring 10 per cent of areas are given a decile number of one, the second-lowest 10 per cent of areas are given a decile number of two, up to the highest 10 per cent of areas that are given a decile number of 10 (ABS, 2006a).

score indicates a relative lack of disadvantage and greater advantage in general, reflecting many households with high incomes, or many people in skilled occupations and few households with low incomes or few people in unskilled occupations (ABS, 2006a).

Figure 3-1 indicates the index of relative socio-economic advantage/disadvantage at census collector district level for the study area. This shows that levels of relative advantage/disadvantage vary across the study area. The census collector districts in Woolgoolga and the Ballina hinterland show levels of relative advantage. The towns of Grafton and Maclean included areas that were neither advantaged nor disadvantaged, while the rural areas generally displayed levels of relative disadvantage. Communities that display levels of relative disadvantage may be more vulnerable to the impacts of large infrastructure projects than those that display levels of relative advantage, although improved access to employment opportunities would also provide benefits for those communities that display levels of relative disadvantage.

The index of economic resources reflects the economic resources of households in an area, based on indicators such as income, expenditure and assets including wages and rental costs for families, and variables that reflect wealth (eg dwelling size). Income variables are also specified by family structure, as this affects disposable income. Higher deciles indicate an area generally has a higher proportion of high-income families or owner occupied houses. Lower deciles indicate communities that are considered to have less financial resources, reflecting many households with low incomes or paying low rent, and few households with high income (ABS, 2006a).

Figure 3-2 indicates the level of economic resources for census collector districts across the study area. Overall, communities in the larger towns of Woolgoolga, Grafton, Maclean and Ballina generally had greater economic resources than the rural areas across the study area. Some census collector districts in the Ballina hinterland displayed the highest levels of economic resources.

3.2.5. Need for assistance

As shown in Table 3-7, compared to regional NSW, the study area local government areas generally had higher levels of people needing help or assistance in one or more of the core activity areas of self-care, mobility and communication because of disability, long-term health condition (ie lasting six months or more) or old age. This is likely to reflect the relatively high levels of older people in most of the study area local government areas. Clarence Valley and Richmond Valley local government areas had the highest proportion of people in need of assistance, at 6.5 per cent and 6.3 per cent, respectively.

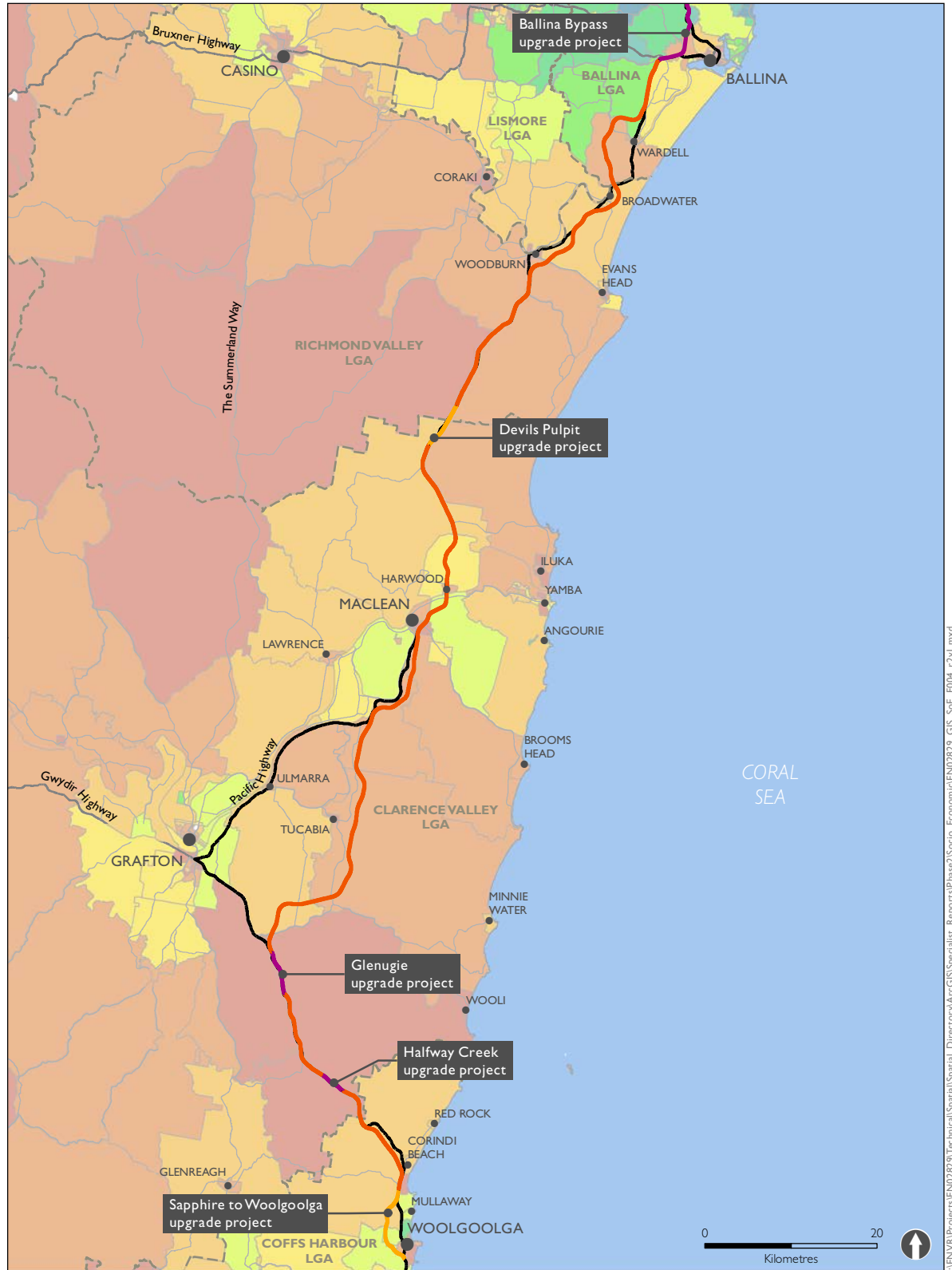
Table 3-7 Need for assistance, 2006

Local government area	Number	Proportion of population
Coffs Harbour	3584	5.5
Clarence Valley	3113	6.5
Richmond Valley	1348	6.3
Lismore	2146	5.1
Ballina	2036	5.3
Regional NSW	122,785	5.1

Source: ABS Census 2006

Upgrading the Pacific Highway - Woolgoolga to Ballina Upgrade

Figure 3-1 Index of relative socio-economic advantage / disadvantage



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway

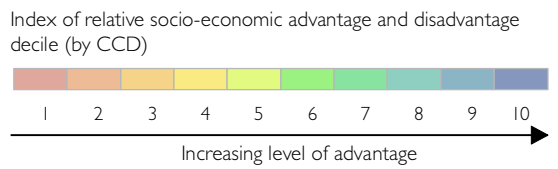
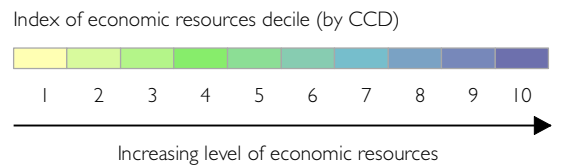


Figure 3-2 Index of economic resources



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway



3.2.6. Income, earnings and cost of housing

The incomes of individuals, households and families across the study area were generally below regional NSW. In particular, the Clarence Valley local government area recorded the lowest income levels across the study area local government areas, while the Ballina local government area recorded the highest income levels (refer Table 3-8).

The lower incomes in the Clarence Valley local government area were partially offset by the lower median housing loan repayment recorded for the local government area. In this regard, there appears to be a correlation between incomes earned and housing repayments to be made by local residents. For example, Ballina had both the highest median household income (\$1017 per week) and loan repayment (\$1290) of the study area local government areas.

Table 3-8 Income and housing characteristics

Local government area	Median income (\$ per week)			Median housing loan repayment	Average household size (persons)
	Individual	Household	Family		
Coffs Harbour	364	706	910	1170	2.5
Clarence Valley	333	631	781	953	2.4
Richmond Valley	342	651	826	910	2.5
Lismore	378	760	993	1083	2.5
Ballina	397	779	1017	1290	2.4
Regional NSW	386	795	1032	1200	2.5

Source: ABS 2006 Census

3.2.7. Dwelling characteristics

Dwelling characteristics, including vacancy and tenure type are shown in Table 3-9. In 2006, each of the study area local government areas, apart from the Clarence Valley, had dwelling vacancy rates below regional NSW. The Clarence Valley local government area had the highest vacancy rate, at 12.6 per cent, followed by the Coffs Harbour and Richmond Valley local government areas, at 9.3 per cent. These vacancy rates suggest that the Clarence Valley local government area would have the greatest capacity to cater at least initially, for any increase in housing demand during the project's construction.

In 2006, houses that were fully owned were the dominant tenure type within the study area local government areas. In particular, the Clarence Valley, Ballina and Richmond Valley local government areas had levels of home ownership about regional NSW. This is consistent with the rural nature and older age profiles of these local government areas.

Conversely, each local government area apart from the Clarence Valley, had levels of households renting above regional NSW. Coffs Harbour had the highest proportion of rental accommodation, followed by Ballina and Lismore.

Table 3-9 Dwelling characteristics, vacancy rate and tenure type

Local government area	Total dwellings	Occupied private dwellings	Vacancy rate (%)	Fully owned (%)	Being purchased (%)	Rented (%)
Coffs Harbour	28,702	26,029	9.3	36.7	27.1	29.9
Clarence Valley	22,209	19,411	12.6	44.6	25.9	23.8
Richmond Valley	9472	8591	9.3	40.0	27.2	26.4
Lismore	17,690	16,470	6.9	35.2	30.2	28.5
Ballina	17,086	15,837	7.3	40.1	24.8	28.7
Regional NSW	1,085,044	948,984	12.5	38.3	28.7	26.2

Source: ABS Census 2006.

3.3. Economic base and activity

3.3.1. Gross regional product

The gross regional product of the study area comprises approximately 2.2 per cent of the State's gross product.

As shown in Table 3-10, Coffs Harbour produced the greatest gross regional product contribution (\$2659 million), followed by Lismore (\$2206 million) and Clarence Valley (\$1769 million). However, when gross regional product is apportioned on an employee basis, Lismore had a notably higher gross regional product per employee (\$123,670) compared to the other study area local government areas. On average, the gross regional product per employee for the study area was \$103,671.

Table 3-10 Gross regional product of the study area local government areas

Local government area	Gross regional product (\$M)*	Gross regional product per employee*	Gross regional product contribution to NSW
Coffs Harbour	2659	103,588	0.7
Clarence Valley	1769	104,538	0.4
Richmond Valley	747	95,865	0.2
Lismore	2206	123,670	0.5
Ballina	1471	90,694	0.4
Average	1770	103,671	

* Note: in 2008/2009 dollars

Source: ABS Census, 2006

3.3.2. Industry and employment structure

Table 3-11 provides a summary of the number of businesses by industry in the study area local government areas. While the greatest number of businesses by industry differed across the local government areas, the four industries that consistently registered the highest proportion of businesses included:

- Property and business service
- Agriculture, forestry and fishing
- Construction
- Retail trade

In 2007, the Richmond Valley and Clarence Valley local government areas recorded the highest proportion of businesses in the category of agriculture, forestry and fishing (37.1 per cent and 29.2 per cent of businesses in each local government area respectively). At the same time, the local government areas of Coffs Harbour, Lismore and Ballina had the greatest number of businesses in the property and business service industry category.

Table 3-11 Businesses by industry (2007)

Industry	Coffs Harbour		Clarence Valley		Richmond Valley		Lismore		Ballina	
	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture, forestry and fishing	690	18.3	1155	29.2	663	37.1	306	7.2	309	11.1
Mining	3	0.1	9	0.2	3	0.2	6	0.1	6	0.2
Manufacturing	219	5.8	186	4.7	84	4.7	210	4.9	126	4.5
Electricity, gas and water supply	9	0.2	3	0.1	3	0.2	6	0.1	0	0.0
Construction	654	17.3	597	15.1	219	12.3	762	17.9	357	12.8
Wholesale trade	135	3.6	114	2.9	48	2.7	150	3.5	126	4.5
Retail trade	417	11.0	483	12.2	207	11.6	540	12.7	474	17.0
Accommodation, cafe and restaurant	129	3.4	198	5.0	69	3.9	240	5.6	87	3.1
Transport and storage	144	3.8	186	4.7	78	4.4	195	4.6	114	4.1
Communication services	15	0.4	36	0.9	24	1.3	48	1.1	30	1.1
Finance and insurance	144	3.8	111	2.8	30	1.7	264	6.2	144	5.2
Property and business services	825	21.8	525	13.3	219	12.3	1002	23.5	615	22.0
Education	15	0.4	12	0.3	9	0.5	24	0.6	15	0.5
Health and community services	192	5.1	195	4.9	66	3.7	237	5.6	258	9.2

Industry	Coffs Harbour		Clarence Valley		Richmond Valley		Lismore		Ballina	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cultural and recreational services	93	2.5	48	1.2	21	1.2	117	2.7	60	2.1
Personal and other services	96	2.5	102	2.6	42	2.4	150	3.5	75	2.7
Total businesses	3780	100.0	3960	100.0	1785	100.0	4257	100.0	2796	100.0

Source: ABS National Regional Profiles (2011)

In 2006, school education was the largest employer in the Coffs Harbour, Clarence Valley and Ballina local government areas. In contrast, the largest industry of employment in the Richmond Valley local government area was meat and meat product manufacturing, while the Lismore local government area had the greatest number of people employed in hospitals (refer Table 3-12).

It should be noted, that the major industries of employment do not necessarily correspond to the composition of businesses in the study area. For example, while agriculture, forestry and fishing businesses comprised a large proportion of businesses in the study area, they accounted for a small proportion of the region's total employment.

Table 3-12 Top five industries of employment in study area

Industry	Number of people employed	Percentage of total employment (%)
Coffs Harbour		
School education	1456	5.7
Cafes, restaurants and takeaway food services	1165	4.5
Hospitals	983	3.8
Accommodation	923	3.6
Supermarket and grocery stores	867	3.4
Clarence Valley		
School education	905	5.3
Cafes, restaurants and takeaway food services	559	3.3
Hospitals	546	3.2
Sheep, beef cattle and grain farming	538	3.2
Local government administration	513	3.0
Richmond Valley		
Meat and meat product manufacturing	544	7.0
School education	390	5.0
Sheep, beef cattle and grain farming	298	3.8
Hospitals	275	3.5
Cafes, restaurants and takeaway food services	273	3.5

Industry	Number of people employed	Percentage of total employment (%)
Lismore		
Hospitals	1104	6.2
School education	1033	5.8
Cafes, restaurants and takeaway food services	756	4.2
Tertiary education	597	3.3
Supermarket and grocery stores	541	3.0
Ballina		
School education	1074	6.6
Cafes, restaurants and takeaway food services	698	4.3
Hospitals	558	3.4
Supermarket and grocery stores	510	3.1
Residential care services	433	2.7

Source: ABS 2006 Census

3.3.3. Labour force and unemployment

Compared to regional NSW, the Clarence Valley and Richmond Valley local government areas had low levels of labour force participation, which is likely to reflect the older populations in these two local government areas. Table 3-13 summarises the labour force characteristics of the study area local government areas.

Overall, the study area generally had lower proportions of full-time workers and higher proportions of part-time workers compared to regional NSW. In particular, the Coffs Harbour and Clarence Valley local government areas recorded low proportions of full-time workers, suggesting that commerce and industry activity in these localities is below the regional average. The Coffs Harbour and Ballina local government areas had relatively high levels of part-time workers compared to regional NSW.

The study area had relatively high levels of unemployment, with each local government area recording levels of unemployment above regional NSW as a whole. While Ballina had a relatively low proportion of full-time workers, unemployment in this locality was notably below the levels of unemployment across the study area local government areas. The Clarence Valley local government area recorded the highest level of unemployment, at 9.9 per cent, followed by Lismore at 9.2 per cent.

Table 3-13 Labour force characteristics in the study area, 2006

Local government area	Labour force		Employed		Unemployed (%)
	Total	Participation (%)	Full-time (%)	Part-time (%)	
Coffs Harbour	28,164	54.4	49.6	35.4	8.9
Clarence Valley	18,797	48.7	50.8	32.8	9.9
Richmond Valley	8538	51.1	54.8	29.9	8.8
Lismore	19,646	58.5	52.9	32.5	9.2
Ballina	17,485	56.0	51.9	35.0	7.3
Regional NSW	1,078,175	56.0	56.6	30.1	7.0

Source: ABS 2006 Census

3.3.4. Agriculture

In 2006, the study area local government areas had a total of 589,953 hectares of agricultural land. The Clarence Valley local government area comprised the largest proportion of agricultural land in the region (67.9 per cent), followed by Richmond Valley (23.8 per cent), and Ballina (5.3 per cent).

Meat cattle enterprises comprised the bulk of producers, representing approximately 90.3 per cent of all agricultural enterprises in the study area. This was generally driven by very high proportions of meat cattle enterprises in the Clarence Valley and Ballina local government areas, at 97.7 per cent and 94.1 per cent respectively.

Milk cattle (4.6 per cent) and pigs (4.1 per cent) comprised the next largest groups of agricultural enterprises in the study area. Compared to the study area as a whole, the Coffs Harbour local government area had a very high proportion of milk cattle enterprises (at 28.6 per cent) while the Lismore local government area had high proportions of pig enterprises (at 20 per cent).

Table 3-14 provides an overview of key characteristics of the agricultural industry in the study area.

Table 3-14 Agricultural industry in the study area

Agricultural commodities	Coffs Harbour	Clarence Valley	Richmond Valley	Lismore	Ballina	Study area total
Area of agricultural land (hectares)	3465	400,704	140,442	13,940	31,402	589,953
% of study area	0.6	67.9	23.8	2.4	5.3	100.0
Number of agricultural enterprises						
Sheep and lambs (No.)	47	970	1099	43	147	2306
% of agricultural enterprises	1.8	0.7	1.4	0.4	1.3	0.9
Milk cattle (excluding house cows) (No.)	745	2351	7180	615	497	11,388

Agricultural commodities	Coffs Harbour	Clarence Valley	Richmond Valley	Lismore	Ballina	Study area total
% of agricultural enterprises	28.6	1.6	9.4	6.3	4.5	4.6
Meat cattle (No.)	1814	141,832	60,458	7109	10,428	221,641
% of agricultural enterprises	69.6	97.7	78.7	73.2	94.1	90.3
Pigs (No.)	0	26	8041	1939	10	10,016
% of agricultural enterprises	0.0	0.0	10.5	20.0	0.1	4.1
Total farming enterprises (No.)	2606	145,179	76,778	9706	11,082	245,351
% of study area	1.1	59.2	31.3	4.0	4.5	100.0

Source: ABS 2006 Census

3.3.5. Tourism

Tourism is an important industry within the study area. The study area comprises a range of regional level tourist destinations and features, including towns and villages, cultural facilities, touring routes, natural attractions and lookouts.

Table 3-15 provides an overview of key tourist statistics. In 2007, approximately 3.8 million people visited the study area, spending a total of approximately \$857 million. The Coffs Harbour local government area had the largest number of visitors, with visitors to the local government area accounting for nearly 40.8 per cent of total visitors to the study area.

The average stay for visitors varied across the study area, ranging from 3.7 nights in the Clarence Valley local government area to 6.3 nights in Lismore. Visitors spent between \$187 per stay in the Richmond Valley local government area to \$354 per stay in Lismore.

Table 3-15 Tourism industry

Local government area	Visitors ('000)	Spend (\$ million)	Average length of stay (nights)	Average spend per trip (\$)
Coffs Harbour	1540	451	3.95	268
Clarence Valley	812	173	3.7	218
Richmond Valley	242	41	3.8	187
Lismore	578	88	6.3	354
Ballina	601	104	4.95	229

Notes: Spend data are in June 2007 real dollars

Source: Tourism NSW

The Pacific Highway – together with the region's airports at Ballina, Coffs Harbour, Lismore and Grafton – plays an important role in providing access to and from these tourist regions. Connectivity to Brisbane and Sydney is also important.

Regional cultural attractions are generally focussed on Coffs Harbour and Grafton and include the North Coast Regional Botanic Garden (at Coffs Harbour), Coffs Harbour Regional Museum, Coffs Harbour Regional Gallery, and the Grafton Regional Gallery. The New Italy Museum is also an important cultural tourist destination. The museum is located adjacent to the Pacific Highway about 13 kilometres south of Woodburn. The museum is an important link to the Italian heritage of the Northern Rivers region and is also of significance to the Italian community across Australia (New Italy Museum, 2009).

The study area also boasts various regional level natural attractions such as the Clarence River, Richmond River, Solitary Island Marine Reserve, and various national parks and state forests, including Glenugie State Forest, Bom Bom State Forest, Yuraygir National Park, Bundjalung National Park and Broadwater National Park. Other important tourist destinations are Broadwater Lookout in Broadwater National Park, and Goanna Headland in Bundjalung National Park.

The area is popular for touring motorists and includes a number of important tourist drives. The existing section of the Pacific Highway between Woolgoolga and Ballina forms part of the Pacific Coast Touring Route that connects Sydney and Brisbane. The route is a popular tourist drive. It generally follows the Pacific Highway with deviations at some coastal and inland locations and provides access to a wide range of activities and natural attractions (Pacific Coast Tourism, 2010). Local tourist drives include The Rainforest Way and Summerland Way. The Rainforest Way tourist drive commences at Woodburn and traverses numerous national and state parks. Summerland Way connects Coffs Harbour and Brisbane, via Grafton, Casino, Kyogle, Rathdowney and Beaudesert.

The area also includes a number of towns and villages that are important tourist destinations. Those located near the existing Pacific Highway include Coffs Harbour, Grafton, Maclean and Ulmarra. Local tourist destinations and features near the project include holiday parks and resorts, art galleries and museums, fishing areas, and beaches such as Corindi Beach and Chinamans Beach. Some key tourist attractions and facilities located near the project include:

- National parks and conservation areas, including Yuraygir National Park and State Conservation Area, Yaegl Nature Reserve, Bundjalung National Park and Broadwater National Park
- The Clarence River, extending to the coast at Yamba/ Iluka and passing through the towns of Grafton, Ulmarra, Maclean and Harwood
- The Richmond River, extending to the coast at Ballina, passing through the towns of Woodburn, Broadwater and Wardell
- Coastal communities such as Arrawarra, Minnie Waters, Yamba, Iluka and Evans Head
- Visitor information centres, including at Coffs Harbour, South Grafton, Maclean, Evans Head, and Ballina
- Museums and galleries, including the New Italy Museum south of Woodburn and the Squatters Rest Private Museum at Tucabia.

A number of other tourist attractions and facilities (ie galleries, museums, lookouts) are located within towns and villages, including Grafton, Ulmarra and Maclean. The study area also includes a wide range of tourist accommodation uses, including caravan parks, hotels and motels, farm stays, bed and breakfasts and holiday houses.

3.3.6. Fisheries

Prawn trawling is permitted in four estuaries in NSW, the Clarence River, Hunter River, Hawkesbury River and Port Jackson. The Clarence River is the only one of these estuaries located in the northern part of the state. The Clarence River is the most productive of the four estuaries, producing around 300 tonnes of product annually valued at around \$2 million. Seafood harvested in the Clarence River prawn trawl fishery is predominately school prawns, with small catches of king prawns and finfish (those species not subject to size limits). School prawns make up around 95% of the total catch. The bulk of the school prawns harvested from the Clarence River is packaged for bait, and the remainder sold for human consumption through regional Sydney markets. The fishery is currently experiencing difficult times due to a combination of factors including rising costs and low returns as a result of competition with cheaper imported product.

3.3.7. Extractive industries (quarries)

Construction material quarries and resources are an important part of the socio-economic environment of the NSW North Coast region.

In 2002-2003, annual recorded production of construction resource products in the North Coast region totalled around 2.7 million tonnes, with major resources including crushed and broken stone, construction sand, river gravel and other materials. At the same time, production of industrial minerals (mainly clay and limestone) was about 100,000 tonnes. Metallic minerals production (including gold, antimony, tin, copper, molybdenum, silver and tungsten) was limited (NSW DPI 2006).

Key characteristics of the construction mineral resources industry in the North Coast region are as follows:

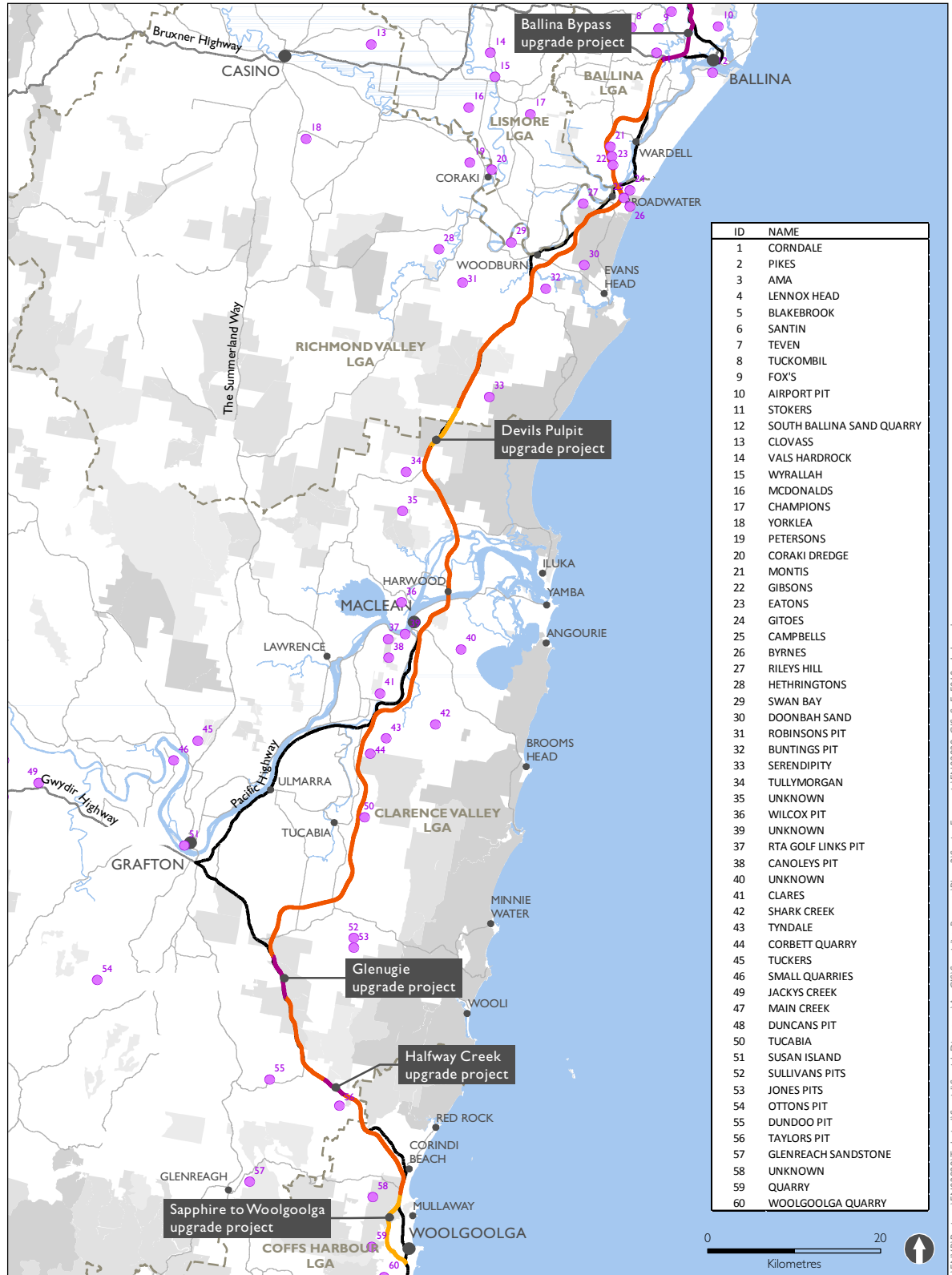
- There are about 176 significant sources and potential sources, including 119 operating sites
- Several individual quarry sites produce greater than 100,000 tonnes per annum
- The industry provides direct employment for over 300 people plus contractors
- Provides an essential supply of materials for maintenance and development of infrastructure including the Pacific Highway upgrade (NSW DPI 2006).

The underlying sustainability of construction material supply in the North Coast region is problematic as sources of supply are not naturally replenished, and therefore eventually depleted. Sensitivity to transport costs plus access constraints also limits the sustainability of supply (NSW DPI 2006).

The locations of existing quarries near the project are shown in Figure 3-3.

Information on estimated material quantities required for the project and potential material sources is provided in Chapter 6 (Description of the project - construction). Further information on extractive industries across the wider North Coast region, including the range of materials, is also provided in Chapter 16 (Land use and property).

Figure 3-3 Regional quarry locations



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway
- Quarry locations

3.4. Towns and villages

This section provides an overview of towns and villages near the project that may be affected, either directly or indirectly, by the project's construction and/or operation. Key demographic characteristics of each town and predominant industries of employment are also provided in Appendix A.

Corindi Beach

Corindi Beach is a small coastal village located about 18 kilometres south-east of Halfway Creek and 35 kilometres north of Coffs Harbour, within the Coffs Harbour local government area. In 2006, Corindi Beach had a population of about 834 people. Key socio-economic characteristics of the village in 2006 were:

- A relatively diverse population, with a high proportion of the population speaking a language other than English at home (about 2.2 per cent)
- A higher proportion of households with children compared with regional NSW, reflecting the younger age profile of the village
- A relatively high rate of unemployment, being around 9.5 per cent. The highest proportion of workers were employed in school education, followed by residential building construction; pubs, taverns and bars; fruit and tree nut growing; and selling grocery, liquor and tobacco
- A relatively low level of people needing assistance, compared to other towns within or near to the study area and regional NSW as a whole.

Red Rock

Red Rock is a small coastal village located about six kilometres north-east of Corindi Beach and about 40 kilometres north-east of Coffs Harbour, within the Coffs Harbour local government area. Red Rock is located about five kilometres north-east of the existing Pacific Highway.

In 2006, the population of Red Rock was 274 people. Key socio-economic characteristics of the village were:

- A relatively older population, with people aged 65 years or over comprising about 25.9 per cent of the population, considerably higher than the proportion of this age group in regional NSW (about 16.5 per cent)
- Higher proportions of couple-only families (at 50.7 per cent) compared to regional NSW (about 40.7 per cent), reflecting the older age profile of the village
- An unemployment rate of 13.4 per cent, which was higher than regional NSW
- Low median incomes compared to other localities near the project, and high proportions of households on low incomes
- A high rate of home ownership, with 52.9 per cent of households owning their own homes, compared to 39.4 per cent in regional NSW. Again this reflects the village's older population.

Grafton

Grafton² is located within the Clarence Valley local government area and is the major urban settlement and regional centre for the Clarence Valley region. The town is situated on the Clarence River and comprises the main town of Grafton north of the river and the urban area of South Grafton south of the river. The Pacific Highway currently passes to the eastern edge of South Grafton.

In 2006, Grafton had a total population of 17,501 people, including about 5932 people in South Grafton³. Key socio-economic characteristics of the town in 2006 were:

- People aged 65 years or over comprised about 19.7 per cent of the population, which was slightly higher than the proportion of this age group in regional NSW
- Relatively high levels of population mobility, with lower proportions of people who had lived at the same address both 12 months and five years previous to 2006, compared to regional NSW
- Lone-person households comprised about 30 per cent of households in Grafton, slightly more than regional NSW. The family profile was similar to regional NSW
- Relatively high levels of people needing help or assistance compared to regional NSW, with this group comprising seven per cent of the town's population. This is likely to reflect the town's higher proportion of older people
- Households had a median income of \$641 per week, which was one of the lowest of towns near the project. About 31 per cent of households had an income of less than \$500 per week
- An unemployment rate of 9.3 per cent, which was higher than regional NSW. The highest proportion of workers was employed in the retail industry followed by healthcare and social assistance; education and training; and manufacturing
- Predominant industries were school education, State government administration, hospitals, supermarket and grocery stores and cafes, restaurants and takeaway food services, reflecting Grafton's role as the region's major urban centre.

Tucabia

Tucabia is located about 10 kilometres east of Ulmarra and 25 kilometres north-east of Grafton within the Clarence Valley local government area. The village had a population of about 258 people in 2006. Key socio-economic characteristics of the village in 2006 were:

- A younger population, with high proportions of children and low proportions of older people compared to other towns in the study area and regional NSW as a whole. Approximately 8.5 per cent of the population was aged 65 years or over, compared to 16.5 per cent in regional NSW
- A very stable population, reflected by the low levels of population mobility over both 12 months and five years to 2006, and the high proportion of dwellings that are fully owned

² Comprising the area covered by the ABS defined Grafton urban centre

³ Based on the ABS defined South Grafton state suburb

- A high proportion of young families and a low proportion of lone-person households and couple-only families. This reflects the younger age profile of the village
- A median household income of \$632 per week, which is lower than regional NSW but higher than other towns within the study area. The village had proportions of low-income households marginally higher than regional NSW
- A very high rate of unemployment, with 17.3 per cent of the village's workforce looking for work. Retail trade is an important industry, employing about 18.2 per cent of the village's workforce. This is followed by manufacturing (15.2 per cent), construction, and healthcare and social assistance (both at 9.1 per cent)
- Timber processing and manufacturing is an important industry in Tucabia, with about 5.6 per cent of the village's workforce employed in log sawmilling and timber-dressing and a further 4.4 per cent employed in 'other wood product manufacturing'.

Ulmarra

Ulmarra is located within the Clarence Valley local government area, about 15 kilometres north of Grafton, adjacent to the Clarence River. The town is located either side of the Pacific Highway, with the town centre focused on Coldstream Street, running from the highway west towards the Clarence River. The town is considered one of Australia's finest examples of a 19th century river port and is classified by the National Trust (www.clarencetourism.com).

Ulmarra had a population of about 446 people in 2006, of which about 25.1 per cent were aged 65 years or over. Key socio-economic characteristics of the town in 2006 were:

- A relatively low proportion of children, with people aged 14 years or under comprising 17 per cent of the population
- Compared to other towns near the project and regional NSW as a whole, Ulmarra had a more mobile population with lower proportions of people that lived at the same address both 12 months and five years prior to the 2006 Census
- Proportions of couple-only families considerably higher than regional NSW and lower proportions of families with children, which reflects the town's older age profile
- A high level of people needing help or assistance, with this group comprising 11 per cent of the town's population. This was the highest in the study area towns and again reflects the town's higher proportion of older people
- A relatively low level of unemployment, with less than four per cent of the population looking for work
- Retail was an important industry, employing about 20.8 per cent of the town's workforce. The main retail activity was pharmaceutical and other store-based retailing and specialised food retailing. This was followed by transport, postal and warehousing; and healthcare and social assistance, which each employed 12.5 per cent of the town's workforce. Log sawmilling and timber-dressing was also an important industry, employing about 4.2 per cent of the town's workforce.

Tyndale

The village of Tyndale is located south-east of the Pacific Highway, about nine kilometres south of Maclean and 31 kilometres north of Grafton. In 2006, the village had a population of about 213 people. Key socio-economic characteristics of the village in 2006 were:

- Comparable proportions of children and older people to regional NSW.
- A high proportion of couple-only families, with this group comprising 56.1 per cent of the town's families, compared to 40.7 per cent in regional NSW
- A relatively stable population, with high proportions of people having lived at the same address for both the 12 months and five years to 2006. This is also reflected by the high proportion of dwellings that were fully owned (47.6 per cent) compared to regional NSW (39.4 per cent)
- A low level of unemployment, with 3.4 per cent of the workforce looking for work. This was the lowest level for each of the study area towns and villages. Agriculture and tourism are important industries, with 19.5 per cent of workers employed in primary industries (agriculture, forestry and fishing) and 14.6 per cent in accommodation and food services. More specifically, 12.7 per cent of the village's workforce was employed in 'other crop growing', and 10.1 per cent in both supermarket and grocery stores and fuel retailing.

Maclean

Maclean is located within the Clarence Valley local government area, about 46 kilometres north of Grafton and adjacent to the Clarence River. The Pacific Highway is located east of the main population and commercial centre of Maclean. However, the residential areas of Gulmarrad and Townsend are located east of the highway with access to Maclean via an underpass of the Pacific Highway at Jubilee Street.

In 2006, Maclean had a population of about 3246 people. Key socio-economic characteristics of the town in 2006 were:

- An older population, with 25.9 per cent of the town's population aged 65 years or over. This older age profile is consistent with the town's high proportion of lone-person households and couple-only families, the high level of people needing help or assistance and high proportion of low-income households
- A relatively stable population, reflected by lower levels of population mobility and relatively high proportion of dwellings that are fully owned
- The retail industry was the largest industry, employing about 16.5 per cent of Maclean's workforce. Healthcare and social assistance was also an important industry, employing about 15 per cent of the workforce. Other predominant industries of employment in the town included school education; local government administration; supermarket and grocery stores; residential care services; and cafes, restaurants and takeaway food services.

Harwood

The village of Harwood is located within the Clarence Valley local government area, about 50 kilometres north of Grafton. The town is located on the northern side of the Clarence River with the Pacific Highway bisecting the village in a north–south direction.

In 2006, Harwood had a population of about 193 people. Key socio-economic characteristics of the village in 2006 were:

- An older population, with about 20.2 per cent of people aged 65 years or older. This was considerably higher than regional NSW
- Compared to regional NSW, Harwood had a relatively mobile population over the 12 months to the 2006 Census. However, the village had relatively high levels of longer-term residents, with about 59.1 per cent of people living at the same address five years previous to the 2006 Census
- A high proportion of lone-person households, which reflects the village's older age profile
- A high proportion of people who spoke a language other than English at home, compared to other towns and villages near the project. However, the actual number of people who spoke a language other than English was relatively low given the relatively small population
- Households had the highest median income of the towns and villages near the project, at \$812 per week. This was also higher than regional NSW as a whole. The village also had a relatively low proportion of low-income households
- A high level of unemployment, with 15.2 per cent of the village's labour force looking for work
- The sugar mill at Harwood is an important source of local employment. In 2006, about 37 per cent of the village's workforce was employed in the manufacturing industry, with a further 16.4 per cent employed in primary industries (agriculture, forestry and fishing). More specifically, about 28.9 per cent of the village's workforce was employed in sugar and confectionary manufacturing, while 'other crop growing' or agriculture and fishing support services each comprised 5.3 per cent of workers.

Woodburn

Woodburn is located about 36 kilometres south of Ballina. The town is divided by the Richmond River, with the majority of commercial and residential development located adjacent to the Pacific Highway, south of the river within the Richmond Valley local government area. The residential area of North Woodburn is located within the Lismore local government area. The town provides an important access from the highway to Evans Head, which is located on the coast about 10 kilometres east of Woodburn.

In 2006, Woodburn had a population of about 618 people. Key socio-economic characteristics of the town in 2006 were:

- A slightly higher proportion of children and similar levels of older people, compared to regional NSW
- A relatively mobile population compared to regional NSW, with lower proportions of people who had lived at the same address 12 months previous to the 2006 Census. However, the town had higher proportions of people who had lived at the same address five years previous to the 2006 Census

- Relatively low levels of lone-person households and couple-only families. Conversely, compared to regional NSW and other towns near the project, Woodburn had a high proportion of families with children
- Households had a median weekly income of about \$736 per week, which was lower than regional NSW, but higher than many of the other towns and villages near the project. The town also had relatively low levels of low-income households
- A relatively high level of unemployment compared to regional NSW, although this was comparable or lower than many of the other towns and villages near the project. Manufacturing; construction; retail and healthcare; and social assistance were important industries for the town. About 5.7 per cent of the town's workforce was employed in primary industries (agriculture, forestry and fishing). Local government administration employed about 4.8 per cent of the town's workforce.

Broadwater

Broadwater is situated on the Richmond River within the Richmond Valley local government area, about 25 kilometres south of Ballina. The town extends for a distance of about 2.5 kilometres along both sides of the Pacific Highway. The town supports the nearby rural village of Rileys Hill, located about three kilometres west of Broadwater.

The town had a population of about 465 people in 2006. Key socio-economic characteristics of the town in 2006 were:

- Relatively low levels of children and older people, with the town having one of the lowest levels of both children and older people among towns and villages near the project
- A high proportion of working aged people, with people aged 15–64 years comprising 67.5 per cent of the population. This was the highest of the study area towns and higher than regional NSW as a whole. This is likely to reflect the industry in the town and the corresponding employment opportunities
- A relatively mobile population compared to regional NSW and some other towns in the study area, with lower proportions of people who had lived at the same address both 12 months and five years prior to 2006
- A higher proportion of families with children compared to regional NSW, reflecting the town's younger age profile
- Households had a median weekly income of about \$735 per week, which was lower than regional NSW, but above many of the other towns and villages near the project. This reflects the lower proportion of low-income households and relatively high proportion of households earning more than \$1400 per week
- A relatively high level of unemployment compared to regional NSW, at nearly 10 per cent. However, this was comparable to many of the towns and villages near the project
- A high proportion of workers employed in the sugar industry. The town originally developed around the sugar industry, with the New South Wales Sugar Milling Cooperative continuing to be an important employer for workers in Broadwater. In 2006, 13.2 per cent of the town's workforce was employed in the manufacturing industry, with 7.1 per cent of workers employed in 'sugar and confectionary manufacturing'. School education; residential care services; cafes, restaurants and takeaway food services; and 'other social assistance services' were also predominant employers in the town.

Wardell

Wardell is located within the Ballina local government area, about 18 kilometres south of Ballina on the Richmond River. The Pacific Highway divides the town on the northern side of the river, while East Wardell is separated from the town centre by the Richmond River.

In 2006, the town had a population of 622 people. Key socio-economic characteristics of the town were:

- A higher proportion of children and lower proportion of older people compared to other towns and villages near the project and regional NSW as a whole. The younger age profile is reflected in the relatively high proportion of families with children and lower proportions of couple-only families and lone-person households
- A low level of mobility over the short-term compared to regional NSW and other towns in the study area, with a high proportion of people who lived at the same address as 12 months prior to the 2006 Census. However, the population demonstrated a higher level of mobility over the five years prior to the 2006 Census
- Households in the town had a lower median household income compared to regional NSW. However, the proportion of low-income households earning less than \$500 per week was similar to regional NSW
- A relatively high level of unemployment compared to regional NSW, although this was comparable or lower than many of the other towns and villages near the project. Predominant industries of employment for the town's workers included residential construction; residential care services; cafes, restaurants and takeaway food services; supermarket and grocery stores; and other crop growing.

3.5. Local business

This section provides an overview of local businesses in the study area. This is based on a sample count of local businesses along the existing Pacific Highway and within key towns and villages near the project.

3.5.1. Business count

The business count was compiled through a visual survey of local businesses, aimed at identifying businesses that may be affected by the project. Localities surveyed are listed in Table 3-16 and include both smaller and major towns along the existing Pacific Highway and near the project.

Table 3-16 Localities surveyed

Towns and villages	Localities verified
Villages and towns	Corindi Beach, Dirty Creek, Wells Crossing, Ulmarra, Tucabia, Tyndale, Maclean, Harwood, New Italy, Woodburn, Broadwater, Wardell
Major towns	Grafton, South Grafton, Ballina

Businesses along the proposed alignment and within key townships that would be bypassed and/or affected by the project were identified and mapped. A full list of the businesses identified during the site visit by towns and villages is in Appendix B.

The identification of businesses was limited to those businesses that were able to be seen from public roads. As such, the business count represents a sample of businesses at a specific location. In particular, the identification of businesses in major towns was limited to main streets or areas where passing trade would most likely occur from traffic activity to/from or along the existing Pacific Highway.

Consequently, Grafton, South Grafton and Ballina have been given summary coverage only. This is due to the high number of businesses located there and the likelihood for these towns to have sufficiently robust economies that would lessen any change induced by the project. The survey was supported by a desktop review of publicly available information such as maps and surveys from local councils, chambers of commerce, and visitor information centres.

By contrast, in locations with smaller numbers of businesses (namely villages) the survey provided a more accurate representation of the business activity in that locality, due to the relatively small number of businesses.

Each identified business was classified based on the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006. The industry classification defines individual business sectors and provides a basis for grouping those businesses identified during the survey. The definitions used to categorise each of the identified businesses are provided in Appendix B.

3.5.2. Outcomes of business count

About 440 local businesses were identified along the existing Pacific Highway and within the key towns and villages. Based on this information, a list of businesses was developed based on their classification type and position. This provided the basis for the assessment of local business impacts presented in Section 4.5.

Businesses surveyed by classification type

The degree and direction (positive or negative) of potential impacts on businesses as a result of the project would vary depending on the type or business and the industry in which it operates.

For example, businesses operating in industries that are heavily reliant on transportation may benefit from improved connectivity and travel times afforded by the upgrade of the highway. Examples of these industries include agriculture, fisheries and forestry; and transport and storage, which are heavily reliant on haulage efficiency. Conversely, businesses dependent on passing and/or visitor trade may be adversely impacted due to changes in accessibility. Examples of industries that may be affected in this manner include retail trade (eg petrol stations) and accommodation, cafes and restaurants. Table 3-17 summarises the number of businesses identified in the business count by classification type and location.

Table 3-17 Business Count by locality and ANZSIC classification

Classification	Corindi Beach	Dirty Creek	Wells Crossing	South Grafton*	Grafton*	Ulmarra	Tucabia	Tyndale	Maclean	Harwood	New Italy	Woodburn	Broadwater	Wardell	West Ballina*	Total businesses	Classification (%)
Agriculture, forestry and fishing	3	1	0	0	0	2	1	0	1	1	0	0	0	0	0	9	2.0
Mining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Manufacturing	0	0	1	1	0	0	0	0	0	1	0	0	2	0	0	5	1.1
Electricity, gas and water supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Construction	0	0	2	0	0	0	0	0	0	0	0	1	0	0	2	5	1.1
Wholesale trade	0	0	2	0	0	0	0	0	1	1	0	0	1	1	0	6	1.4
Retail trade	1	0	8	32	30	13	0	1	40	3	3	9	4	1	32	177	40.0
Accommodation, cafe and restaurant	3	0	7	13	22	10	0	1	21	3	2	6	6	5	21	120	27.1
Transport and storage	0	0	0	1	0	0	0	0	1	1	0	1	1	1	2	8	1.8
Communication services	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	4	0.9
Finance and insurance	0	0	0	3	10	0	0	0	5	0	0	1	0	0	1	20	4.5
Property and business services	0	0	0	0	7	0	0	0	11	0	0	0	0	0	1	19	4.3
Education	0	0	0	0	0	1	1	0	0	1	0	0	0	2	0	5	1.1
Health and community services	0	0	0	4	6	1	0	0	7	0	1	1	0	1	1	22	5.0
Cultural and recreation services	0	0	0	0	2	0	0	0	1	0	0	1	1	0	0	5	1.1
Personal and other services	0	0	4	10	7	0	0	0	7	0	0	5	1	0	3	37	8.4
Total by locality	7	1	24	64	84	27	2	2	97	11	6	26	16	11	64	442	100

Note: *Towns with sample counts only and reflecting businesses visually identifiably only

Based on the business count, the top five industries identified with the greatest number of local businesses were:

- Retail trade (accounting for 40 per cent of businesses surveyed)
- Accommodation, cafes and restaurants (accounting for 27 per cent of businesses surveyed)
- Personal and other services (accounting for 8.4 per cent of businesses surveyed)
- Finance and insurance (accounting for 4.5 per cent of businesses surveyed)
- Health and community services (accounting for 5 per cent of businesses surveyed).

Figure 3-4 provides an overview of businesses by industry classification.

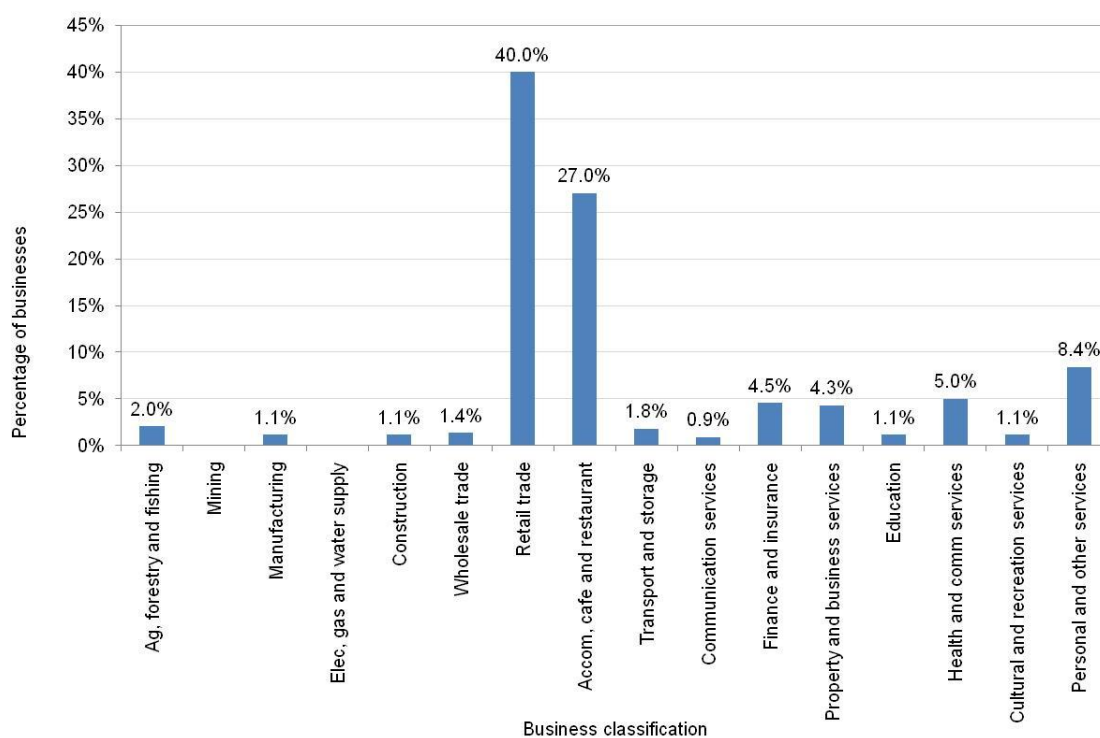


Figure 3-4 Businesses surveyed by industry

Business position

The position of a business determines the connectivity, accessibility and amenity of the business in relation to suppliers, customers and other areas. The underlying position of a business also determines the degree of convenience to and from that business and the overall degree of commerce that may be generated by that business.

The visibility of a business to customers is also a major driver in facilitating business success. For example, a petrol station that is currently located on a highway and that becomes bypassed by a project may experience a significant drop in patronage as it becomes less visible to passing traffic.

The 440 businesses surveyed for this assessment were grouped in terms of two key locations:

- Businesses located along the existing Pacific Highway
- Businesses located in town or village centres further away from the existing Pacific Highway.

A total of 156 businesses surveyed were located along the existing highway, while 284 businesses were located in towns or villages away from the Pacific Highway. Figure 3-5 shows businesses surveyed by location and classification.

Retail trade was the predominant business type identified in towns and villages as well as along the existing Pacific Highway, with these accounting for 38.4 per cent and 42.9 per cent of businesses in these locations respectively. This was followed by accommodation, café and restaurants, which accounted for 23.6 per cent of businesses surveyed in towns and villages and 33.3 per cent of businesses surveyed along the existing highway.

In total, businesses classified in these two industries comprised the bulk of businesses surveyed. Combined, these businesses accounted for 62 per cent of businesses surveyed in towns and villages and 76.3 per cent of businesses surveyed along the existing highway.

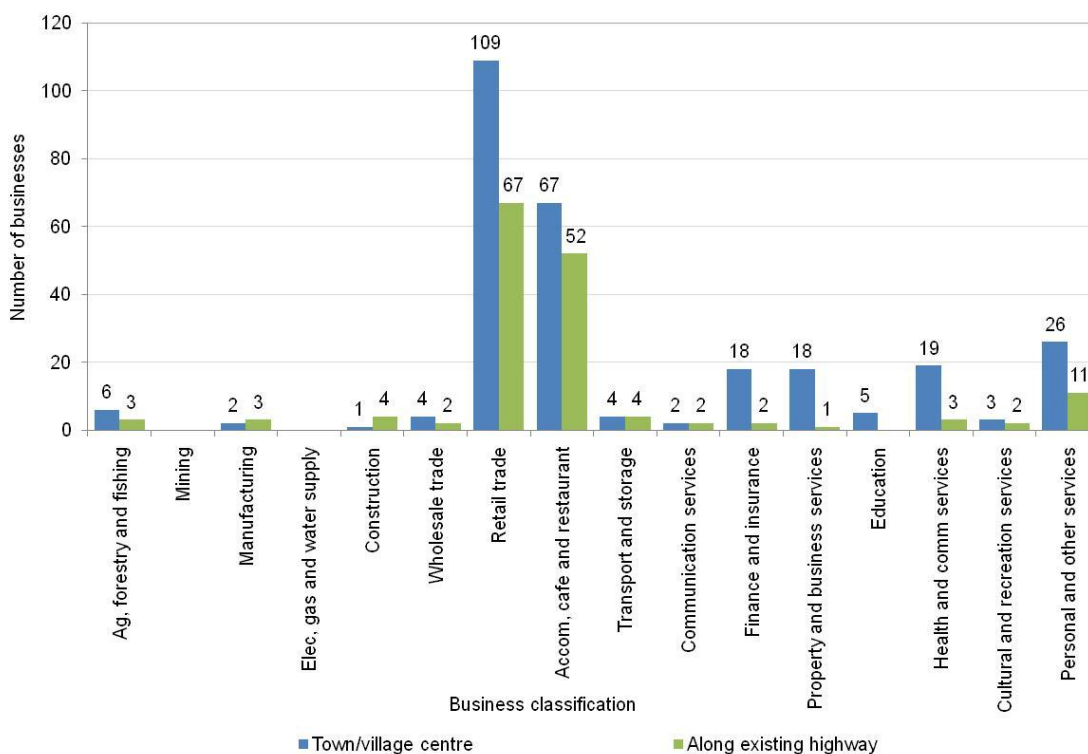


Figure 3-5 Businesses surveyed by location

3.6. Social infrastructure

Social infrastructure refers to community facilities, services and networks which help individuals, families, groups and communities meet their social needs, maximise their potential for development and enhance community well-being. The study area includes a wide range of local, district and regional level community services and facilities to service the needs of residents and visitors. The following provides an overview of key social infrastructure in the study area, including community services and facilities, and sport and recreation facilities.

3.6.1. Community services and facilities

The distribution of community services and facilities varies across the study area. Smaller towns and villages generally offer a limited range of services and facilities to meet the needs of local residents, while regional or district level services and facilities are located in major centres such as Coffs Harbour, Grafton, Maclean, Casino, Lismore and Ballina. The following provides an overview of key regional community services and facilities in the study area. These are also shown in Figure 3-6 to Figure 3-10.

Community facilities located near the project are described in Section 3.6.3.

Figure 3-6 Social infrastructure and facilities within the study area

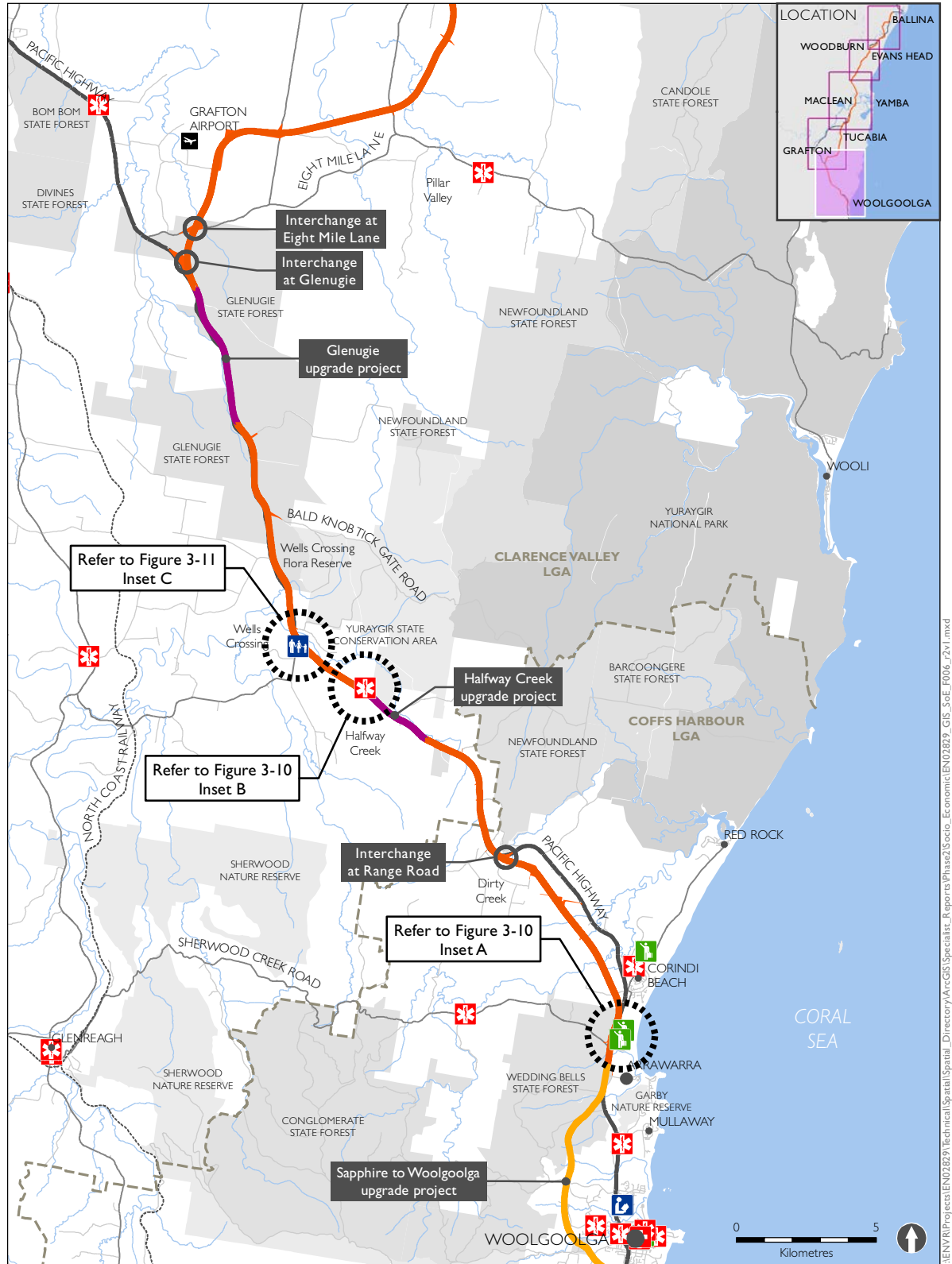
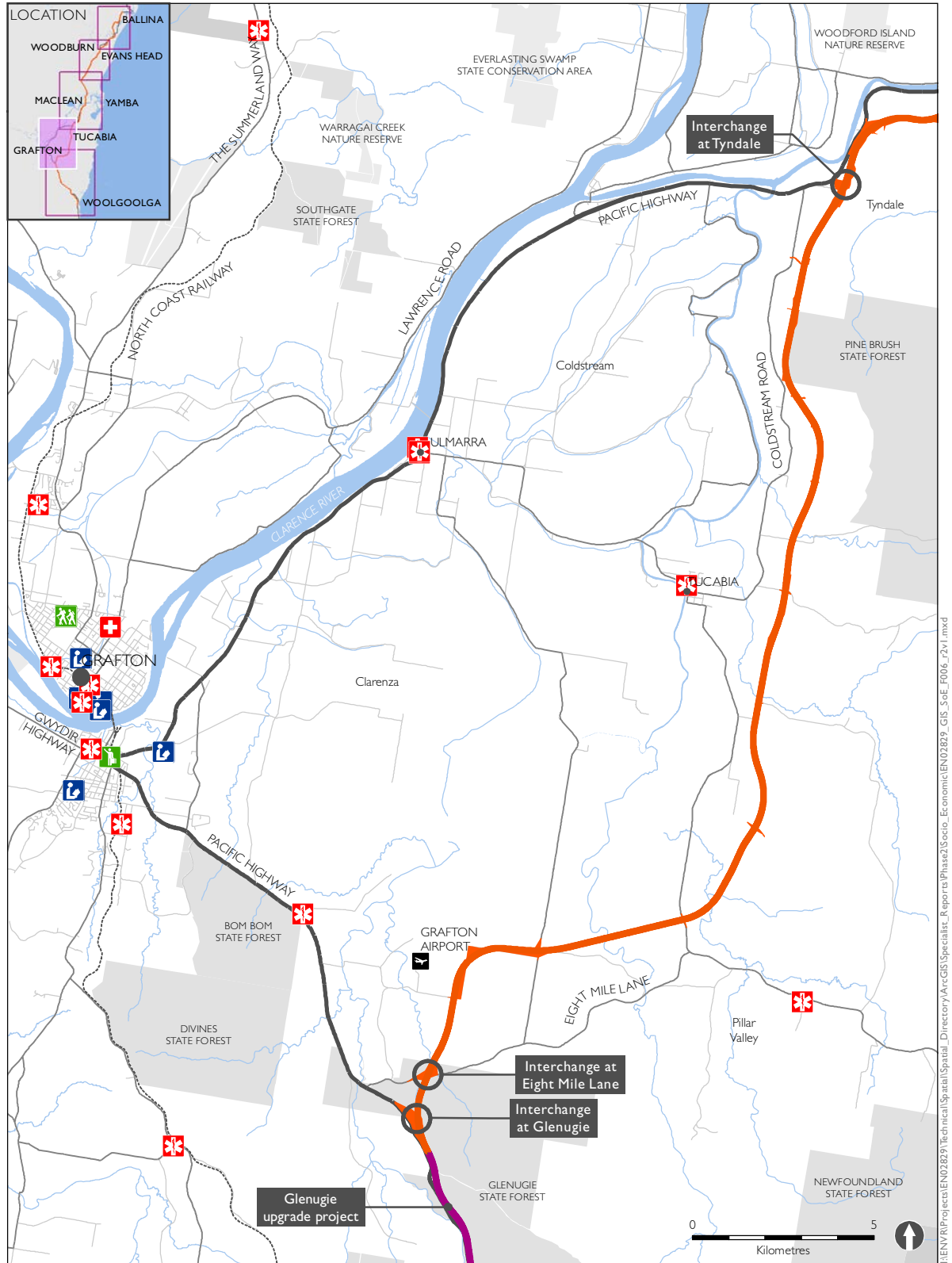


Figure 3-7 Social infrastructure and facilities within the study area



- | | | | | | |
|---|---------------------------------------|---|--------------------|---|---------------------|
|  | The project |  | Community facility |  | Health facility |
|  | Upgrade completed to dual carriageway |  | Education facility |  | Recreation facility |
|  | Upgrade under construction |  | Emergency service |  | Tourist attraction |
|  | Existing Pacific Highway | | | | |

Figure 3-8 Social infrastructure and facilities within the study area

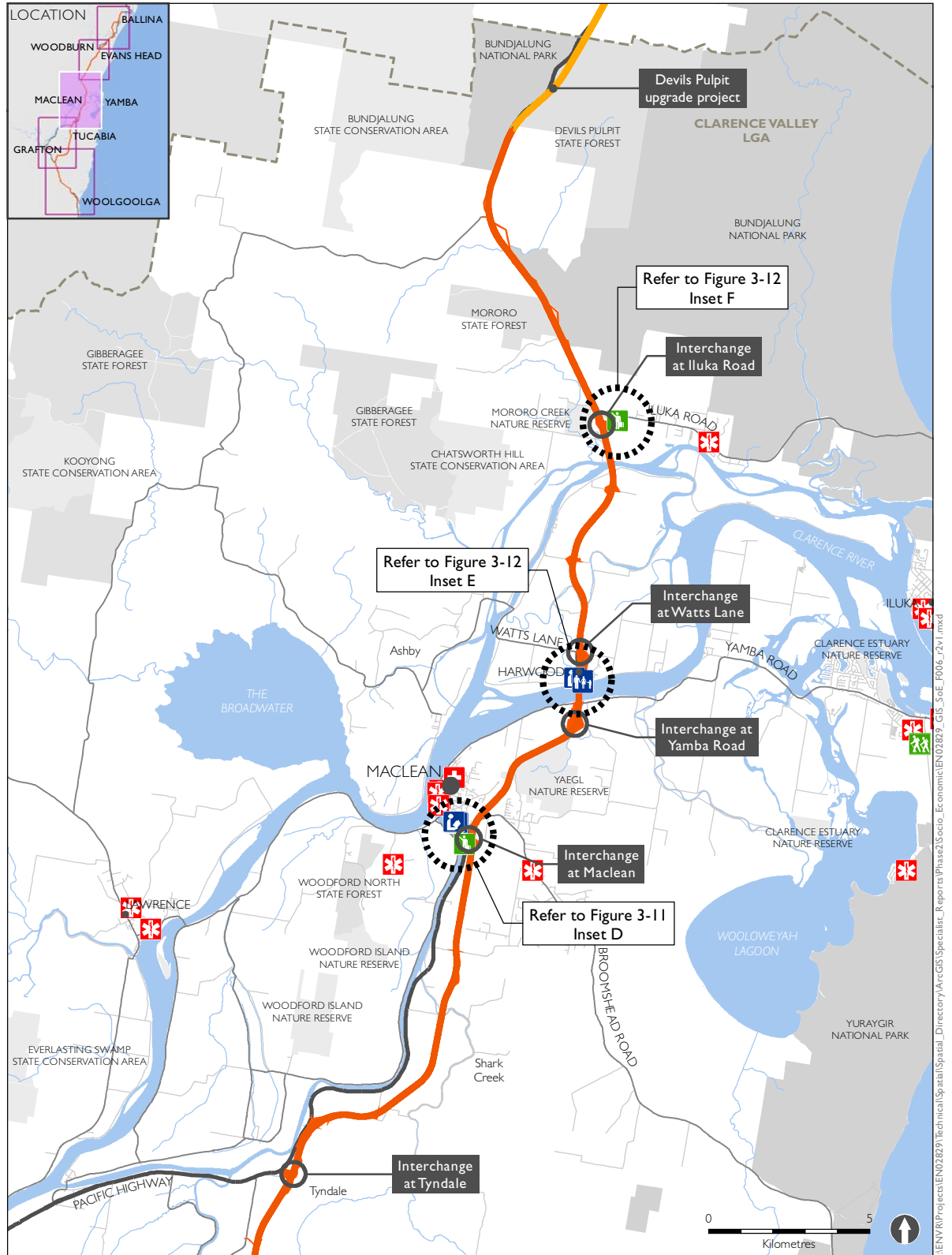
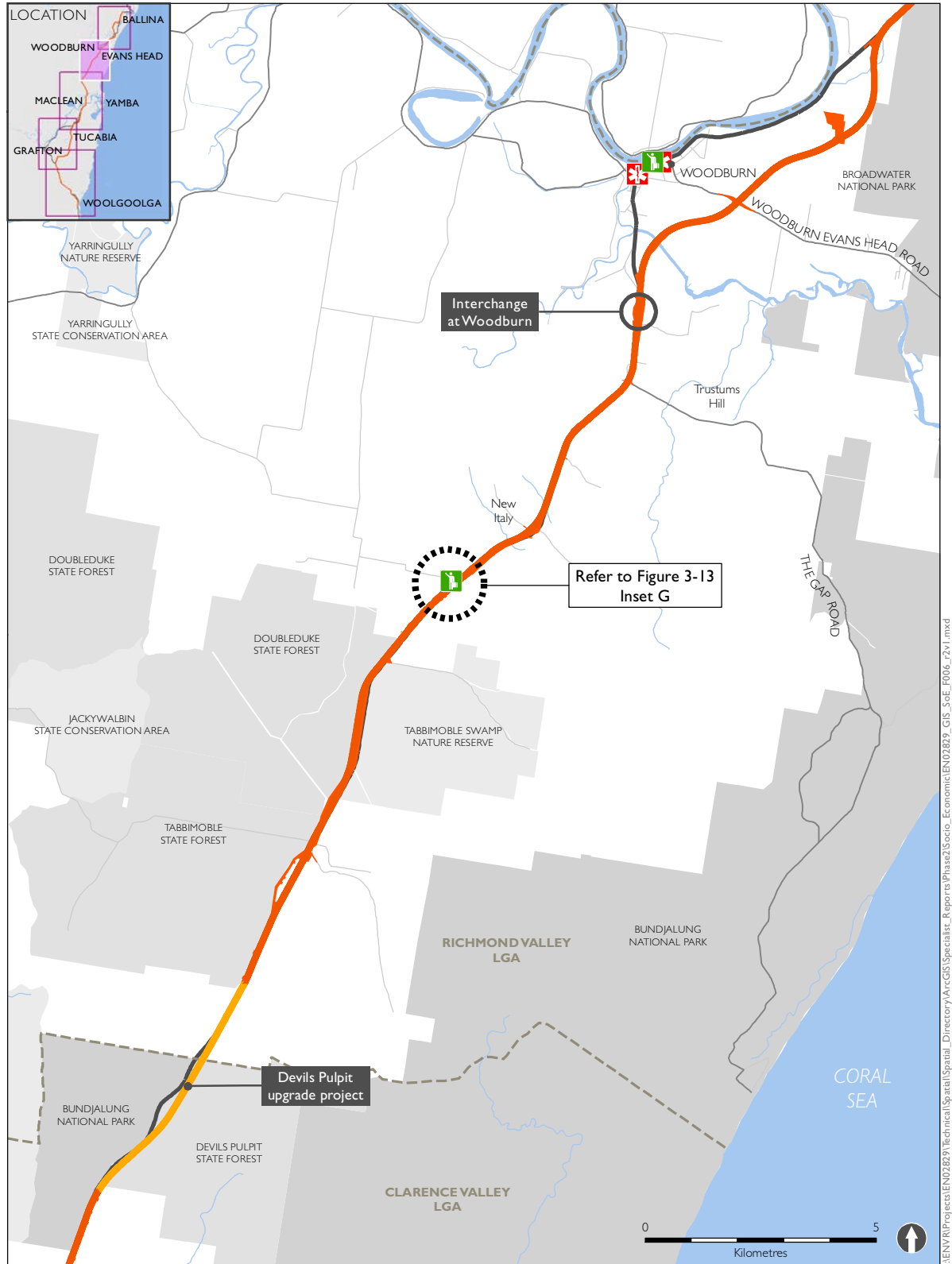
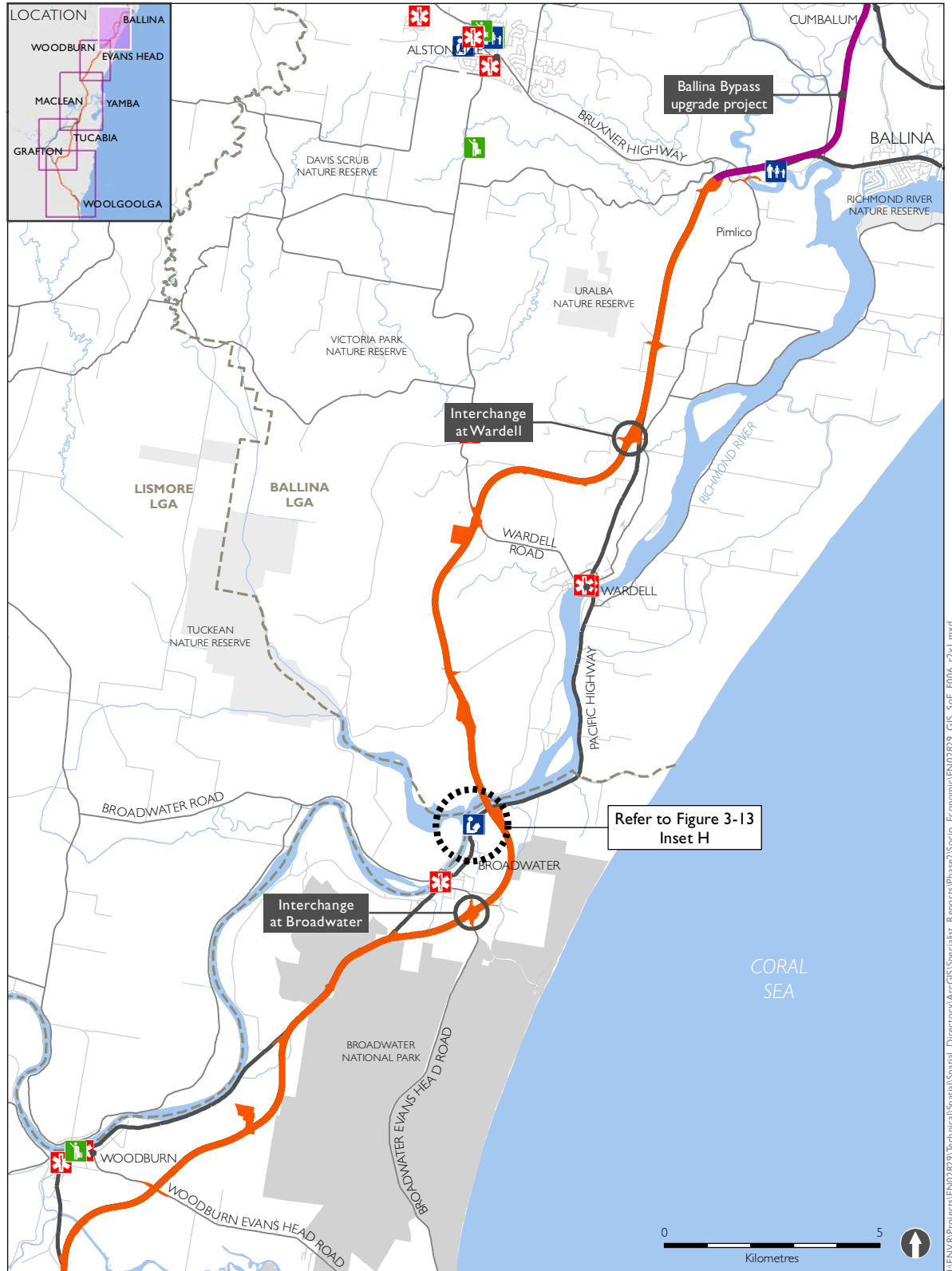


Figure 3-9 Social infrastructure and facilities within the study area



Upgrading the Pacific Highway - Woolgoolga to Ballina Upgrade

Figure 3-10 Social infrastructure and facilities within the study area



- | | | |
|---------------------------------------|--------------------|---------------------|
| The project | Community facility | Health facility |
| Upgrade completed to dual carriageway | Education facility | Recreation facility |
| Upgrade under construction | Emergency service | Tourist attraction |
| Existing Pacific Highway | | |

Education and training facilities

The study area offers a range of government and non-government educational and training facilities early childhood, primary, secondary, college and tertiary level facilities. Secondary schools are located in Coffs Harbour, Woolgoolga, Grafton, Maclean, Casino, Lismore and Ballina. The North Coast TAFE has campuses at Coffs Harbour, Grafton, Maclean, Casino, and Ballina, while the Southern Cross University has campuses at Coffs Harbour and Lismore.

Health and emergency services

The study area is located within the North Coast Regional Health Service catchment, which extends from Hastings Shire in the south to the Queensland border in the north. The North Coast Regional Health Service provides a full range of health services to residents in the area.

The main centres for health services are the larger centres of Coffs Harbour, Grafton, Maclean, Ballina, Lismore and Casino. Public hospitals in the study area include:

- Major rural referral hospitals at Coffs Harbour and Lismore
- Major district level hospital at Grafton
- District level hospitals at Maclean, Casino and Ballina
- Non-surgical hospital at Coraki.

Private hospitals are also located at Coffs Harbour and Lismore, and private day surgeries at Ballina and Lismore (NCAHS, 2007).

A range of community health centres are located across the study area, with these generally providing general community health, mental health, child and family, drug and alcohol, and oral health programs. These centres also provide outreach programs to many other localities across the study area. Locations of community health centres include:

- Coffs Harbour and Woolgoolga in the Coffs Harbour local government area
- Grafton, Maclean and Iluka in the Clarence Valley local government area
- Coraki, Casino and Evans Head in the Richmond Valley local government area
- Lismore and Nimbin, in the Lismore local government area
- Ballina and Alstonville in the Ballina local government area (NCAHS, 2007).

Health services and facilities are generally limited in smaller towns and villages with residents required to travel to Coffs Harbour, Grafton, Maclean, Lismore or Ballina.

Regional cultural facilities

Regional cultural facilities within the study area include Coffs Harbour Regional Gallery, Jetty Memorial Theatre and Coffs Harbour Regional Museum in Coffs Harbour, and Grafton Regional Gallery in Grafton. Other cultural facilities in the study area include public libraries at Grafton, Woolgoolga, Maclean and Iluka. Regional cultural facilities attract visitors from across NSW and interstate.

Community support services

The study area provides community support services such as community centres, disability support services, churches, and child, family and youth support services. Most community support services are located in regional centres such as Coffs Harbour, Grafton, and Ballina, as well as in larger towns such as Maclean. Community centres are also located in some smaller towns and villages as a response from councils to address community need, particularly in Wardell and Yamba. The majority of towns within the study area contain a community hall.

Social housing

Housing NSW is responsible for social housing in NSW, by providing:

- Public housing
- Community housing, through community housing providers
- Aboriginal housing, on behalf of the Aboriginal Housing Office.

There are no known social housing properties directly impacted by the project. A number of aboriginal communities are located near the project, including:

- At Hillcrest Reserve, near Maclean
- Near Yamba, between Tabbimoble Swamp and Eight Mile Lane
- Yaegl
- Near Iluka Road/ Mororo.

3.6.2. Sport and recreation facilities

The study area includes a number of regional level sport and recreation facilities. These are located in major regional centres, including:

- Coffs Harbour – the Toormina Velodrome, BCU International Stadium, and the Coffs Harbour Showgrounds
- Grafton – Grafton Sports Centre, Hawthorne Rodeo Park and the Grafton Indoor Cricket Centre
- Yamba – Raymond Laurie Sports Centre and the Ngaundi Yamba Regional Sports Centre.

National parks and state forests are also an important recreational resource for both residents and visitors and provide nature based recreational opportunities such as walking, camping and picnicking. Overall, the study area has a good level of access to national parks and state forests.

Sea and river fishing are also important recreational activities for residents and a number of boat ramps are located within the study area, which provide access to the Clarence and Richmond rivers. The Clarence and Richmond rivers are also popular for recreational boating. The Big River Sailing Club is located on the Clarence River at Harwood. The club holds races

every Saturday afternoon between mid-August and late April, as well as three major regattas (late October – early November), the Bridge to Breakers in mid-November and the annual regatta in February/ March. The club also conducts ‘learn to sail’ classes on Saturday afternoons. Other boating clubs are also located at Grafton and Maclean on the Clarence River and Ballina on the Richmond River.

Sport and recreation facilities are generally limited in smaller towns and villages within the study area, although many towns and villages include sports fields and/or playgrounds and parks. Pedestrian and cycle facilities across the study area are described in Section 3.8.

3.6.3. Social infrastructure near the project

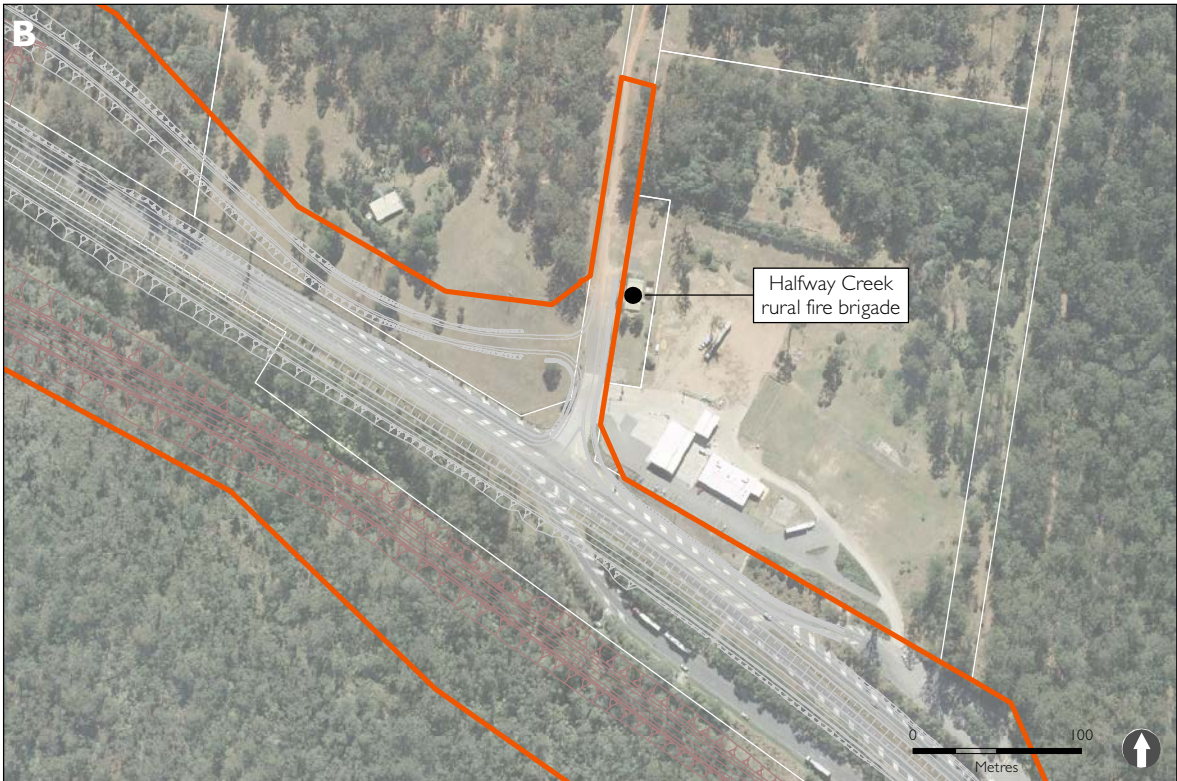
Social infrastructure in the study area that may be impacted by the design, construction and/or operation of the project are listed in Table 3-18 and shown in Figure 3-11 to Figure 3-14.

Table 3-18 Community services and facilities near the project

Section	Location	Social infrastructure near the project
1	Woolgoolga to Halfway Creek	<ul style="list-style-type: none"> • Yuraygir State Conservation Area • Coastline Cycleway (along Pacific Highway)
2	Halfway Creek to Glenugie upgrade	<ul style="list-style-type: none"> • Halfway Creek rural fire brigade • Halfway Creek hall • Yuraygir State Conservation Area • Coastline Cycleway (along Pacific Highway)
3	Glenugie upgrade to Tyndale	<ul style="list-style-type: none"> • Coastline Cycleway (along Pacific Highway)
4	Tyndale to Maclean	<ul style="list-style-type: none"> • Coastline Cycleway (along Pacific Highway) • Clarence Coast visitor information centre (Maclean) • Maclean High School • TAFE North Coast Institute Maclean Campus • Maclean Old Cemetery • Jubilee Street Cycleway • Lower Clarence rowing club
5	Maclean to Iluka Road, Mororo	<ul style="list-style-type: none"> • Coastline Cycleway (along Pacific Highway) • Maclean Lookout • Yamba Road Boatramp (Harwood Bridge) • Martins Point Road Boatramp (Harwood) • Harwood Island Public School • Harwood Oval • Harwood Island Post Office • Harwood Island community hall
6	Iluka Road to Devils Pulpit upgrade	<ul style="list-style-type: none"> • Coastline Cycleway (along Pacific Highway) • Bundjalung National Park
7	Devils Pulpit upgrade to Trustums Hill	<ul style="list-style-type: none"> • Coastline Cycleway (along Pacific Highway) • New Italy Museum
8	Trustums Hill to Broadwater	<ul style="list-style-type: none"> • Coastline Cycleway (along Pacific Highway)

Section	Location	Social infrastructure near the project
	National Park	<ul style="list-style-type: none"> • Woodburn Evans Head Cycleway • Broadwater National Park
9	Broadwater National Park to Richmond River	<ul style="list-style-type: none"> • Coastline Cycleway (along Pacific Highway) • Broadwater National Park • Broadwater Evans Head Cycleway
10	Richmond River to Coolgardie Road	<ul style="list-style-type: none"> • Broadwater Public School
11	Coolgardie Road to Ballina Bypass	<ul style="list-style-type: none"> • No social infrastructure near the project

Figure 3-1 I Social infrastructure and facilities near the project corridor






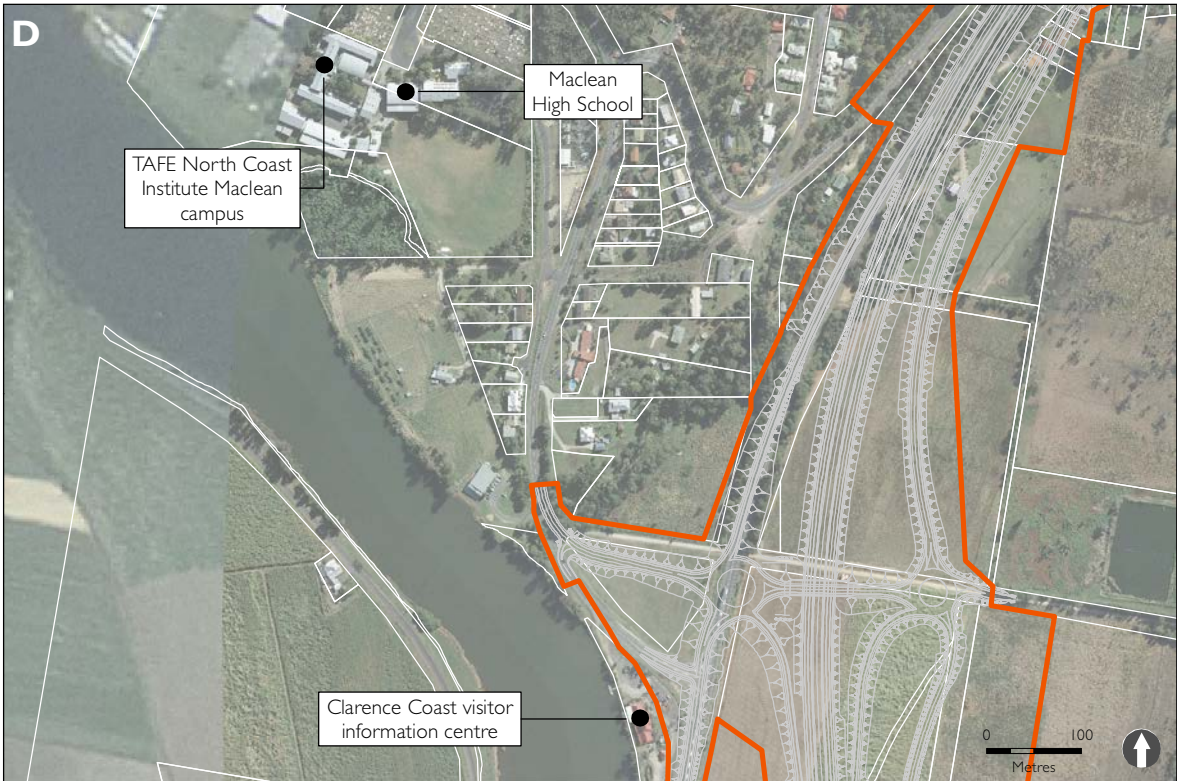
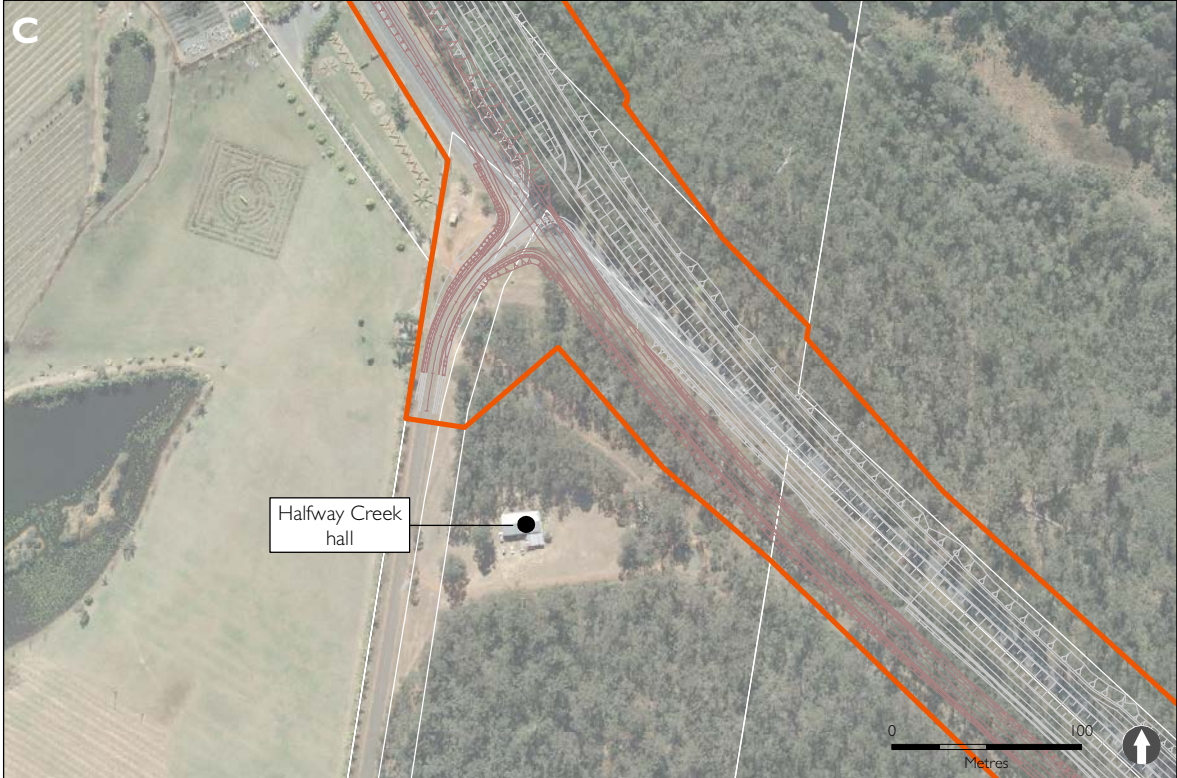
-  The project
-  Class M design detail
-  Class A design detail

Figure 3-12 Social infrastructure and facilities near the project corridor






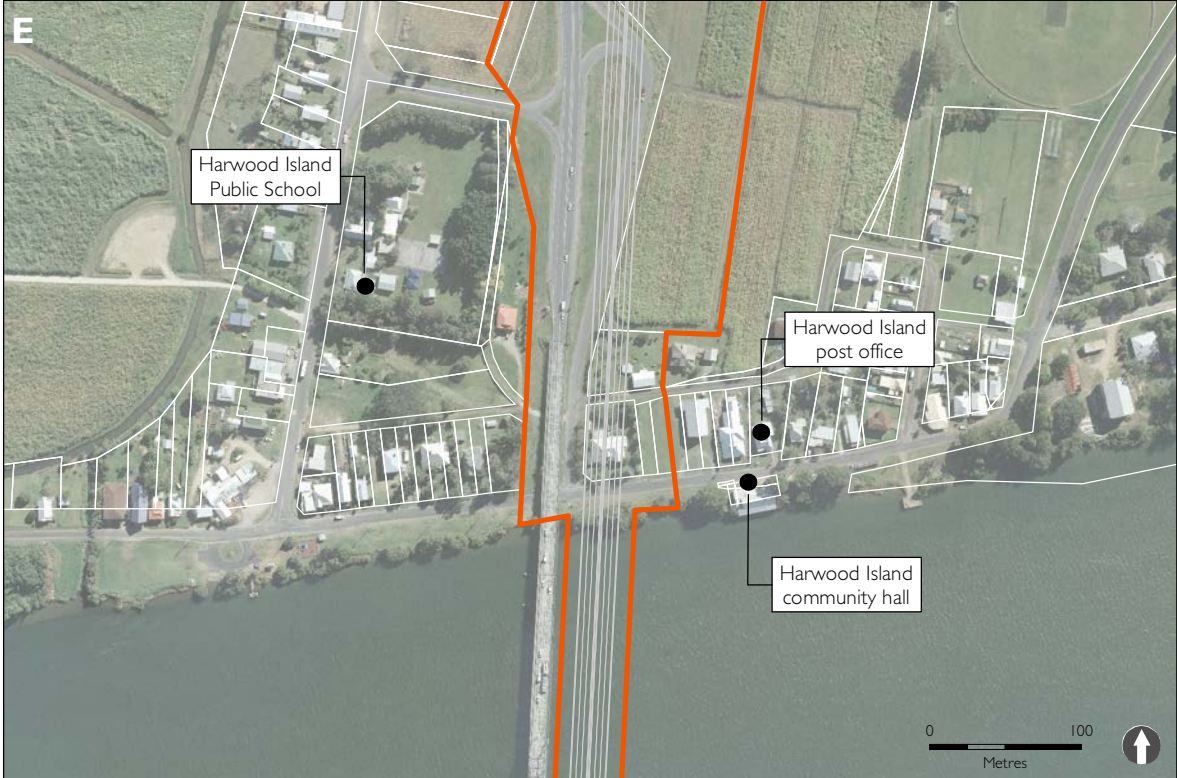
-  The project
-  Class M design detail
-  Class A design detail

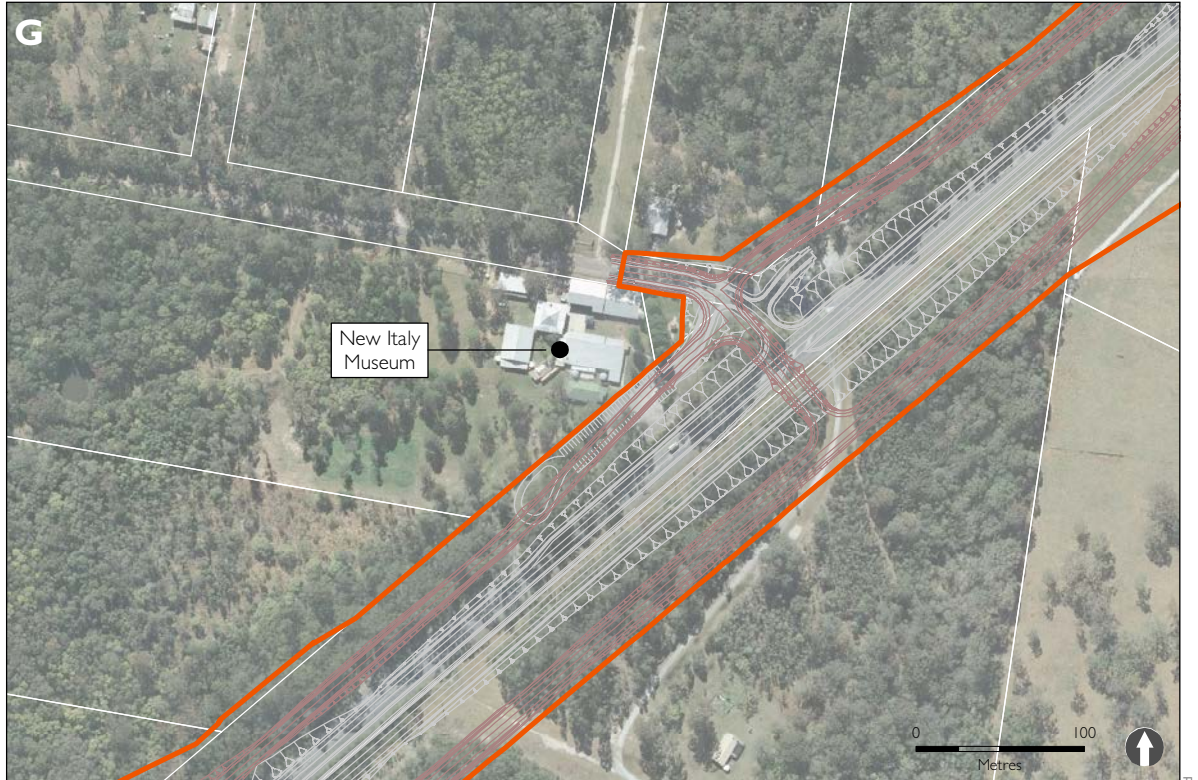
Figure 3-13 Social infrastructure and facilities near the project corridor






- The project
- Class M design detail
- Class A design detail

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Figure 3-14 Social infrastructure and facilities near the project corridor



-  The project
-  Class M design detail
-  Class A design detail

3.7. Community values

Community values are those elements considered to be important to quality of life and well-being. They include tangible (physical) elements such as parks, buildings, and landscape, and intangible (social) elements such as sense of belonging and community diversity.

This section describes the community values important to residents in the study area. Community values for the study area have been informed by consultation with local residents undertaken for the project, either previously for the route selection and concept design phases or more recently as part of this assessment or the wider environmental assessment. Community values have also been informed by the review of social policies and strategies relevant to the study area. Many of the values identified through consultation were common throughout the study area, and related to the natural environment; local amenity and character; access and connectivity; health and safety; and local economy.

3.7.1. Natural environment

Communities in the study area value the quality of the natural environment and landscapes. Key contributors to the region's amenity and lifestyle are the region's natural attributes, such as rivers and creeks; coastal areas; state forests and national parks; and natural bushland. In particular, consultation for the project identified that local communities value the diversity of natural habitats, such as Solitary Island Marine Reserve, flora and fauna, proximity to national parks and natural areas for recreation, and diverse landscapes (ie beaches to rainforests). The region's natural environment is also important to the regional economy, with many local, domestic and international visitors attracted by the region's coastal areas, rivers and national parks.

Protection of the environment is important to local residents, and there are community concerns about potential impacts from environmental degradation, global warming, natural disasters such as flooding and bush fires, and impacts on the health of rivers and threatened and vulnerable flora and fauna species (this includes movement of fauna, such as coastal emus, across the Pacific Highway). During previous consultation undertaken for the Pacific Highway upgrade, the fauna corridor between Wardell Heath and the Blackwall Range (which links to the Uralba Nature Reserve) was identified by residents as important, with potential impacts on this corridor a concern for some community members. The movement of fauna from one side of the project to the other and impacts on existing roadside koala habitat were also identified as concerns for local residents.

3.7.2. Local amenity and character

The study area's rural character and built and natural heritage were identified during consultation for the project as key contributors to the region's lifestyle and amenity. Protection of these characteristics is important to local communities.

Family heritage and connections to the study area were also identified as important, particularly to local farming communities, with many families having resided in the area for many generations. Farming families, such as sugarcane farmers, who have farmed the area over many generations, feel a particularly strong connection to the area.

The region's historic buildings are important to the amenity and character of the study area, and provide an ongoing connection to the region's early lifestyles. The town of Ulmarra, located on the Pacific Highway, is of particular note as one of Australia's 'finest examples of a 19th century river port' (www.clarencevalley.com). The town is an important tourist destination, with the community keen to further develop tourism based around the town's heritage.

New Italy is identified as an important historical settlement, with links back to the arrival of Australia's first refugees in 1881. Today the settlement largely comprises the New Italy Museum located adjacent to the Pacific Highway, which was developed as a 'tribute to the courage and strength of those pioneering families with the purpose to pass onto future generations their spiritual legacy'. The Museum is an 'important link to the rich Italian heritage that has left such strong imprints upon the Northern Rivers region' (New Italy Museum, 2009).

The area contains various artefacts and areas of Aboriginal significance, with previous consultation suggesting that local residents consider themselves as custodians of the values that are integral to these artefacts and areas.

In recent years, the region has experienced an influx of 'tree-changers' and 'sea-changers', with many retirees and families attracted to the region's rural amenity, coastal areas, and quiet, friendly and relaxed lifestyle. This has seen the growth in urban and rural residential development across the study area, which has changed the character of some towns and coastal areas. Some of this development has also been at the expense of agricultural land.

The character and amenity of those towns and villages currently traversed by the Pacific Highway is becoming increasingly compromised due to high traffic volumes, traffic noise and an increase in freight movements. This was identified as a key concern for residents who live on or near to the existing Pacific Highway at Corindi, Grafton, Ulmarra, Harwood, Woodburn, Wardell and Broadwater. In particular, residents feel that the increase in through-traffic and associated traffic noise, is impacting local amenity within these towns and villages.

3.7.3. Access and connectivity

Communities and industry in the study area generally have good access to a range of transport options, including major roads, rail, intra- and inter-state bus services, and air transport. However, the majority of residents are required to rely on private vehicles to access services and facilities across the study area due to limited public transport options. Some residents are also required to travel long distances to access employment and some services and facilities such as health and education. As such, good quality road connections are considered important.

Key values relating to access and connectivity relate to:

- Road safety – the Pacific Highway provides good access to regional centres within and adjoining the study area for local communities and visitors. However, road safety was identified during consultation for the project as a key issue for local communities. A number of accidents occur along the existing Pacific Highway that involve both local residents and visitors, with this identified as having a strong emotional effect on local communities. The expected decrease in the number of accidents due to the upgrade of the highway to an M class standard is seen by many community members as a benefit of the project

- **Flooding** – flooding has shaped the nature and structure of local communities across the study area. The local economy and environment are dependent on the continuation of adequate floodplain management and the local community correctly places a high emphasis on the role that flooding plays in their lives. However, during consultation for this assessment, flooding was also identified as an issue for local access and connectivity across the study area, with many roads, including the Pacific Highway, occasionally cut by floodwaters, restricting access to regional centres, towns and villages
- **Access** – access is restricted within some towns and villages traversed by the Pacific Highway, with the highway providing a barrier to or detracting from pedestrian, cycle and vehicle movements between each side of the existing highway. This occurs at Woolgoolga, Ulmarra, Harwood, Woodburn, Broadwater and Wardell
- The importance of access to regional processing facilities for sugarcane farmers was identified particularly in the localities of Mororo and Tabbimoble
- **Connectivity** – good connectivity between properties adjacent to the Pacific Highway was identified during consultation as being important, particularly for farming communities such as sugarcane growers in and around Section 3 (Glenugie upgrade to Tyndale) and Section 4 (Tyndale to Maclean). The majority of cane-growing properties comprise a collection of smaller allotments with growers moving machinery and equipment between properties or to the sugar mills at Harwood or Broadwater. Some farmers need to move cattle or other livestock between properties. Preserving local property access for residents and preventing severance or division of properties was identified as a major issue during consultation for the project
- **Access to local attractions** – access to state forests and national parks, particularly Bundjalung National Park, and destinations such as the New Italy Museum, was identified as important to the community. The community identify strongly with the heritage buildings and features of the New Italy township and value the close proximity to the existing Pacific Highway for ease of access for passing tourists. Access to the New Italy Museum and New Italy ‘driver reviver’ area, was identified during consultation as important to the New Italy community and for motorists using the highway. Changes to this access that reduces the ability of through traffic to directly access the ‘driver reviver’ area and adjacent New Italy museum is a concern for the New Italy community.

3.7.4. Health and safety

Local residents in the study area value a safe, healthy and vibrant community. Some communities identified concerns that the existing Pacific Highway compromised safety in some communities due to the volumes of traffic passing through towns and villages. Maintaining or improving road safety conditions were identified during consultation as important in protecting local community values. Residents of smaller communities such as Woodburn, Broadwater, and Wardell, indicated that they would feel safer with the removal of a major road through their community.

The good air quality in the study area was identified as important to local communities during consultation for the project. As such, any changes to air quality either during construction or operation would be a concern, particularly for residents with health problems, such as chronic chest and asthmatic conditions.

3.7.5. Local economy

Many people across the study area are employed in rural industries such as agriculture, forestry, fishing and sugar mills. Changing land use from agriculture to urban development and rural residential, and changing farm practices to larger landholdings, has had an effect on rural industries over recent years.

Protection of property values and productive agricultural land are important values to local residents. In particular, highly productive cane-growing and cattle-grazing lands are valued for their economic output which in turn sustains the economic well-being and income of local communities. Communities in the study area also value diverse local businesses, natural assets and major employers, such as the Harwood Mill.

The protection of highly productive cane-growing land around Clarence River and Shark Creek was identified during consultation for the project as important to sugarcane farmers. Minimising impacts to property and associated structures, such as houses and farm sheds; as well as potential impacts of the project on the overall sustainability of the cane-growing industry were also identified as being important. Sugarcane farmers also identified the need to minimise the loss of residual land; the loss of farming efficiencies due to reduced farm sizes; impacts on profitability through the potential loss of cane production and land holdings; and impacts on existing flooding and drainage patterns and infrastructure of the cane growing area as key issues for consideration. Some cane-growers identify the project as an opportunity to enhance efficiencies of the cane-growing operations, particularly in relation to improved access and connectivity between farms and to the Harwood Mill.

Tourism is an important industry and economic contributor for the study area, with many tourists attracted to the region for its natural environment and features, lifestyle and heritage. Therefore, protecting these natural, lifestyle and heritage values is important for many communities.

3.8. Access and connectivity

The study area is well served by a range of transport services including road, rail and air. However, public transport facilities are limited, with residents relying heavily on private vehicles to access employment, services and facilities in regional centres, towns and villages.

Roads

The Pacific Highway is the primary north–south road connection between Sydney and Brisbane for freight and travellers. The highway also forms part of the Pacific Coast Touring Route, connecting tourist attractions and destinations between Sydney and Brisbane. Within the study area, the Pacific Highway is the main intra- and inter-regional road connection used by residents, industry and tourists to access regional centres and towns and villages within the Mid North Coast and Far North Coast and adjoining regions.

The Summerland Way, located west of the Pacific Highway, is also an important north–south route connecting Coffs Harbour to Brisbane via Grafton, Casino, Kyogle, Rathdowney and Beaudesert. The road is also frequently used by communities in the study area as an alternative to the Pacific Highway, particularly for those travelling between Grafton and Casino.

Other roads important for connecting motorists throughout the study area include:

- Gwydir Highway, which connects Grafton to the western inland region
- Armidale Road, which connects Grafton to Armidale
- Bruxner Highway, which connects Ballina to north-western NSW
- Coraki Woodburn Road and Casino Coraki Road, which connect Woodburn to Casino
- Wyrallah Road, which connects Lismore to Woodburn
- Woodburn–Evans Head Road, which connects Woodburn to Evans Head.

Bus services

Many regional, local and school bus services currently use the Pacific Highway and other roads across the study area.

Regional bus services between Sydney and Brisbane currently use the Pacific Highway. These include services operated by Greyhound Coaches, McCafferty's and Premier Motor Services. Four bus services travel between Brisbane and Sydney daily, while five bus services travel between Sydney and Brisbane. All services stop at Grafton, while some services also stop at Maclean.

Local bus routes generally operate within and between towns and villages across the study area and are currently operated by Ryan's Bus Services, Busways, Lawrence Bus Service, Kirklands Buslines, and Ballina Buslines.

Dedicated school bus services currently operate in Coffs Harbour, Woolgoolga, Grafton, Maclean, and Ballina and are provided by various bus operators. One school bus route operated by Ballina Buslines currently uses the Pacific Highway.

Further information on regional, local and school bus services is provided in the traffic and transport working paper.

Cycling and walking

Pedestrian and cycle access in the study area is generally limited to within towns and villages. Pedestrian and cycle connectivity and amenity in towns and villages traversed by the Pacific Highway is limited, particularly at Woolgoolga, Ulmarra, Tyndale, Harwood, Woodburn, Broadwater and Wardell. Vehicle movement through these towns restricts and impedes pedestrian connectivity between each side of the Pacific Highway and is likely to deter many residents in these towns from walking and cycling.

A cycleway connecting Arrawarra and Red Rock is proposed as part of the NSW Coastline Cycleway, which aims to extend along the entire NSW coastline from the Queensland border at Tweed Heads to the Victorian border south of Eden. The timing of construction for this section of the cycleway was not known at the time of writing this report.

Airports

The study area is served by major airports at Coffs Harbour and Ballina/Byron Bay, which cater for both intra- and inter-state flights. Coffs Harbour Airport caters for domestic flights. It is serviced by Qantas, Virgin Blue and Brindabella Airlines (www.coffsharbour.nsw.gov.au). Ballina/Byron Bay airport is serviced by Jetstar, Virgin Blue and Regional Express and provides regular services between Ballina and Sydney. There are also small airports at Grafton (Clarence Valley Airport) and Lismore, which are serviced by Regional Express.

3.9. Summary of existing environment

A review of the existing socio-economic environment indicates that key characteristics of the study area include:

- Higher average rates of population growth compared to regional NSW over the five years to 2009. Future growth is expected to particularly focus on the Coffs Harbour and Ballina local government areas, with these two local government areas accounting for more than three quarters of population growth in the study area to 2036
- A relatively transient population, demonstrated by lower proportions of people living at the same address both 12 months and five years prior to the 2006 Census. However, some rural localities such as Tucabia and Tyndale recorded lower levels of population mobility, which supports feedback received during consultation for the project that a number of families had lived on the same property for a number of generations
- An older population compared to regional NSW, with all local government areas except Lismore recording higher proportions of people aged 65 years or over. The proportion of older people is expected to remain high in coming years, with older people forecast to comprise about 30 per cent or more of each local government areas population apart from Lismore. The higher proportion of older people is likely to contribute to the higher levels of people within the local government area needing help or assistance in one or more of the core activity areas of self-care, mobility and/or communication
- Levels of advantage/ disadvantage and economic resources vary across the study area, with some rural areas generally displaying levels of relative disadvantage and lower levels of economic resources
- The Clarence Valley, Richmond Valley and Coffs Harbour local government areas have household vacancy rates above the regions average. This suggests these local government areas have a greater capacity to service the demand for housing and accommodation needs of the workforce. In this regard, a likely consequence of increased demand for accommodation would be higher property values and rents, reflecting growth in demand for real property from increased construction activity
- While more than half of the labour market in the study area is in full-time employment, there is considerable scope for those unemployed and in part-time employment to benefit from increased employment opportunities and/or hours resulting from the project. In particular, unemployment in the Clarence Valley and Lismore local government areas was recorded as having unemployment levels above the study area's average, providing opportunities for persons in these local government areas to support the project

- A predominance of agriculture, forestry and fishing industries, specifically in the Clarence Valley and Richmond Valley. Other major industries prevalent in the region include construction and property and business services. This suggests that existing industry in the study area would support the growth and development of the project, with the construction, and property and business services industries likely to benefit from increased demand for goods and services, as the regional workforce and related services provided by these industries are used to cater for the project
- Tourism is an important industry in the study area, with a range of regional level tourist destinations and features, including towns and villages, cultural facilities, touring routes, natural attractions and lookouts. In 2007, approximately 3.8 million people visited the study area, spending a total of approximately \$857 million
- Retail traders (eg petrol stations) dominate the number of businesses surveyed along the existing Pacific Highway, with these accounting for 43 per cent of businesses identified during a survey of local business. This was followed by accommodation, café, and restaurants, which accounted for 33 per cent of businesses along the existing highway
- Communities have access to a wide range of local, district and regional level community services and facilities, although distribution of services and facilities varies across the study area. Smaller towns and villages generally offer a limited range of services and facilities to meet the needs of local residents, while regional or district levels services and facilities are located in major centres such as Coffs Harbour, Grafton, Maclean, Casino, Lismore and Ballina
- Communities that value the quality of the natural environment and landscapes as well as the rural character and built and natural heritage of the study area. These are key contributors to the region's lifestyle and amenity. Access to good quality road connections and road safety are also important issues for communities in the study area, particularly as most residents are required to rely on private vehicles to access regional services and facilities.

4. Impact assessment

4.1. Property impacts

4.1.1. Directly affected properties

The upgrade of the Pacific Highway would require the whole or partial acquisition of properties for:

- Road widening
- Construction of interchanges and related infrastructure
- Construction of a number of major bridge crossings
- Construction of other bridges and structures, including drainage, fauna crossings and related infrastructure
- Construction of service roads.

In addition, there would be temporary leases of land to provide for ancillary construction facilities, including stockpile, batching plants and compound sites.

About 564 land parcels (allotments) would be directly impacted by the project, either wholly or in part. In many cases, a number of land parcels are owned by the one property owner. Of these land parcels approximately:

- 369 land parcels are privately owned
- 142 land parcels are owned by the RMS, with these including some land parcels that have previously been purchased for the project
- 42 land parcels are owned by other NSW government agencies, including land associated with state forests and national parks
- About 11 land parcels are owned by local councils.

The majority of properties directly affected through property acquisition comprise rural land uses, including cane farms, cropping, grazing and horticulture. Other properties directly affected by property acquisition, either wholly or in part, comprise:

- Residential uses, including urban residential and rural residential uses
- Community uses, including land accommodating the New Italy Museum and community hall at Halfway Creek
- Local businesses, including caravan parks, service stations, quarries and transport depots.

Land parcels directly impacted by the project would be acquired by the RMS. Property acquisition would be undertaken in accordance with the provisions of the *Property Acquisition (Just Terms Compensation) Act 1991*.

RMS has commenced consultation with directly affected property owners about the acquisition process and properties affected by the project are currently being purchased under voluntary agreements between RMS and property owners. This has helped to provide affected property owners with certainty about future decisions and financial security. The number of land parcels owned by RMS will increase as agreements with property owners are finalised.

4.1.2. Impact of property acquisition

Approximately 85 residential properties would be directly impacted by the project, either wholly or in part. Many of these residential properties have previously been purchased by RMS. About 15 residential properties that are currently privately owned are considered to be “totally” or “highly” affected by the project. A number of dwellings are also located on rural properties that are “totally” or “highly” affected. Residents of residential properties would be required to relocate prior to construction, with some residents of residential properties previously purchased by RMS already having relocated.

The relocation of households due to property acquisition may impact on community cohesion through the disruption of social networks and community relationships. Stress and anxiety about property acquisition and relocation may also impact on the health and well-being of some residents.

While data from the ABS Census suggests that residents in the study area are relatively mobile (refer Section 3.2.1), consultation for the project indicates that many families have lived on the same rural properties and in the region for a number of generations and have strong connections and family history in the area. Concerns were raised in consultation for the project about the loss of family history and heritage due to property acquisition and the need for families to relocate. Concerns were also raised during consultation about the difficulty for property owners affected by acquisition to find suitable alternate properties locally, potentially requiring these property owners to relocate away from the region or away from farming.

The study area has a high proportion of elderly people and people with need for assistance, particularly in the more rural local government areas of Clarence Valley and Richmond Valley (refer Section 3.2.2). In addition, as discussed in Section 3.2.4, some locations in the study area demonstrate higher levels of disadvantage and lower levels of economic resources, indicating that residents in these areas have lower incomes and possibly fewer resources to cope with change. As people in these groups are more likely to depend heavily on personal and community networks, special care would be required to ease the relocation process for these residents.

Partial acquisition of properties would also require consideration of impact on amenity, accessibility, economic viability and productivity and changes to property values. The fragmentation of properties as a result of severance could also reduce amenity and aesthetics of the study area.

During consultation for the project, concerns were raised by some owners of farming properties about potential impacts on the movement of cattle and farm machinery between paddocks due to the location of the highway. In particular, issues were raised about restrictions on the movement of cattle during flood events and general connectivity between agricultural land parcels. Issues were raised during consultation for the project about potential impacts on future

land development, including the ability to construct dwellings on land remaining following property acquisition. RMS is continuing to consult with property owners directly impacted by the project about potential property impacts and opportunities to minimise impacts on future development and the use and functioning of rural properties. A remnant land use strategy has also been developed to manage impacts of property acquisition. This would apply to parcels of surplus land following construction. Further information on the remnant land use strategy is in the land use and property working paper.

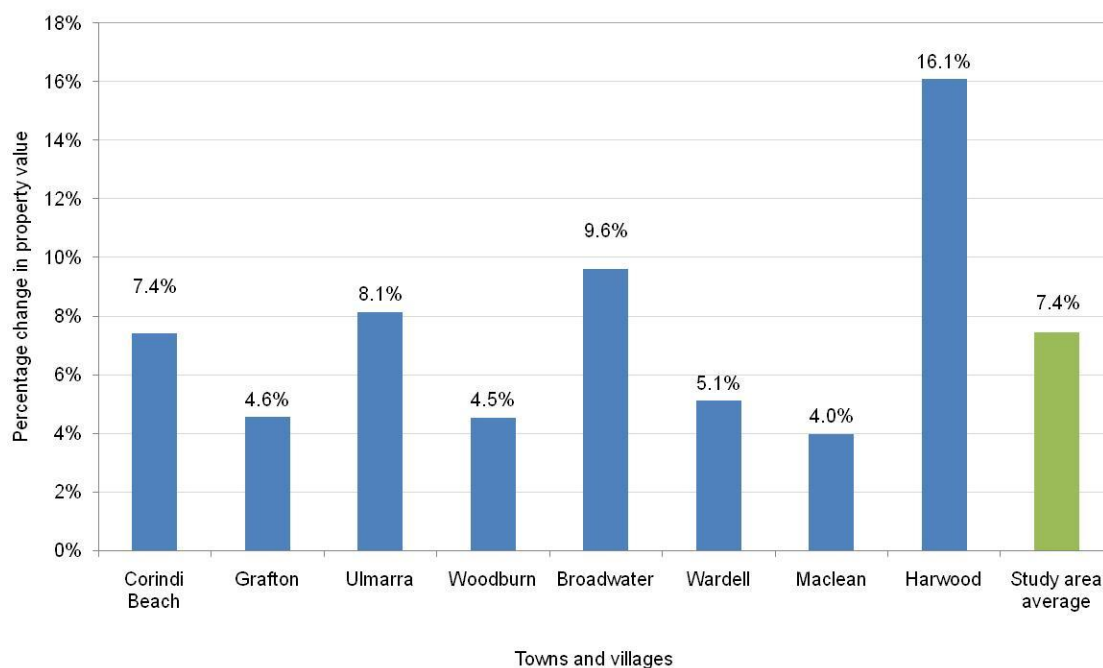
Uncertainty about potential property acquisitions and proposed changes and effects may impact on the health and well-being and quality of life for some residents near the project. Potential issues raised during consultation for the project related to the timing of property acquisition and level of compensation for directly affected property owners. Ongoing consultation being undertaken by RMS with directly affected property owners about property acquisition and the continued purchase of properties under agreement with property owners would help to reduce uncertainty for these residents.

4.1.3. Impact on property values

Property values are driven by a range of factors. For example, agricultural land values are generally driven by their productive value, while residential properties are more heavily influenced by liveability as reflected by local amenity and accessibility to employment, transport and social infrastructure.

Uncertainty about the property acquisition process and timing of the proposed works may impact property values in areas closest to the project. Changes to local amenity as a result of the highway moving closer, may also impact property values in some locations. This was raised by some community members as an issue during consultation for the project. Where the project is realigned from the existing highway, there is potential for the project to have a positive impact on property values through improvements in local amenity in areas located near to the existing highway.

Between 2007 and 2011, towns and villages bypassed by the project experienced a steady growth in property values, with property values increasing by an average of 7.4 per cent over this period (refer Figure 4-1). Specifically, Harwood (16.1 per cent), Broadwater (9.6 per cent), Ulmarra (8.1 per cent) and Corindi Beach (7.4 per cent) experienced the greatest growth.



Notes: Red Rock, Tucabia and Tyndale localities have been excluded due to the unavailability of data from the source reference.
Source: Realestate.com.au (<http://www.rs.realestate.com.au>)

Figure 4-1 Change in property values of towns and villages, 2007-2011

Given the positive growth in property values for towns and villages in the study area, the trends suggest property values may continually grow with buyers and sellers taking into account the assumed development of the project. Whilst some properties may experience a reduction in values due to a change in access, particularly in areas affected by a new alignment of the highway, other properties may experience an increase in value due to greater demand for commercial and industrial use near the project.

A literature review of bypass studies undertaken for the RMS by Parolin (2011), reported a positive effect on land and property values over the medium to long term following a highway bypass on the small towns of Berrima and Mittagong in NSW (BTCE cited in Parolin 2011).

A review of bypass studies by Handy et al (cited in Parolin 2011) also indicates that the overall impact of a bypass on land values appears to be positive. On the whole, Parolin (2011) found that “while those residential properties not adjacent to the bypass have been found to increase more than those which are adjacent, accessibility benefits for those adjacent generally outweigh negative impacts such as noise and air pollution and hence a general upward trend in land value is experienced”.

4.2. Population and demography

Project related factors affecting population and demography generally relate to the acquisition of residential properties and influx of construction workers. Changes in population and demography in the region are also affected by external factors such as changes to land uses (ie from agricultural to residential use), trends in primary industry, and population trends such as 'tree changers' and 'sea changers', the movement of rural young people to the city and coastal areas, and population ageing. This is reflected in the demographic trends of the study area, which demonstrate a relatively mobile population (refer Section 3.2.1).

4.2.1. Construction

Construction of the project from Woolgoolga to Ballina is estimated to take about three to five years to build the initial upgrade. Future upgrades would require more build time. During construction, the project is expected to directly generate between 3300 jobs and 4300 jobs. In addition, the project is likely to generate a number of indirect jobs, through increased demand for goods and services from local retailers and industries supplying the construction industry.

The level of unemployment and industry breakdown suggests the study area's labour force would have some existing capacity and skills to respond to employment opportunities provided by the project. However, it is likely a number of workers would also need to be sourced from outside the study area, particularly a core workforce of professional staff, supervisors, tradesmen and plant operators. Some of these workers would relocate to the study area for the duration of construction, while others are likely to commute on a weekly basis from larger centres elsewhere. These workers would require short-term accommodation during the week.

It is expected much of the workforce would be sourced from the study area, given the size of the labour force and relatively high levels of unemployment levels in the study area local government areas compared to regional NSW. If it is assumed for the purposes of this assessment that about 60 per cent of workers would include existing residents living in the study area, between about 1320 workers and 1720 workers would need to be sourced from outside of the study area. However, if existing residents comprised a smaller proportion of workers (ie 30 per cent), this would require between 2310 workers and 3010 workers to be sourced from outside of the study area.

The temporary influx of new residents and non-resident workers for construction is likely to have only a small effect on population and demography at a regional or local government level (ie about one per cent or less of the residential population of the study area local government areas as a whole). However, the level of impact would depend on where these workers choose to live. For example, an influx of workers living in smaller towns (ie Harwood, Woodburn, and Broadwater), may have a greater impact on population and demography than an influx of workers to larger towns (ie Grafton, Ballina, Maclean or Coffs Harbour).

Employment opportunities provided during construction may provide opportunities for young people who would otherwise move away from the area in search of employment. These opportunities would be temporary however the skills would be transferable. Employment opportunities would assist in the learning and development of those workers looking to establish a foothold in the road building sector.

4.2.2. Operation

The acquisition of properties with dwellings may result in minor changes to local populations from families potentially relocating.

RMS has acquired residential properties for the project (around 30 with further properties subject to negotiation). About 15 residential properties that are currently privately owned are considered to be “totally” or “highly” affected by the project. Based on the average household size for the study area as a whole (ie 2.5 people per household), this would result in a decrease in population of approximately 115 people by the time property purchases have been completed. In addition, residents of some residential properties would also need to relocate prior to construction. This represents a very small proportion of the regional population and is not likely to impact on the population and demography of the study area as a whole. However, this may impact on population and demography at a local community level.

The level of this potential impact locally would also depend on whether these families choose to relocate locally, or to leave the area. However, the ability for affected households to relocate locally was raised as a concern during previous consultation for the project. The availability and affordability of a similar house or properties were identified as potential issues.

Indirectly, improvements in travel conditions such as travel-time savings and improved road safety may make some areas in the study area more accessible and attractive for people looking to relocate to the area. While this change has been occurring and is likely to continue over the long-term, upgrading the highway may bring forward opportunities to redevelop some areas identified by the regional strategies for future urban use.

4.3. Economy

This assessment provides a qualitative evaluation of potential economic impacts of the project at a macro-economic level. A more detailed micro-economic review of the project's economic impacts on agribusiness and local business is provided in Section 4.4 and Section 4.5 respectively.

4.3.1. Construction

Construction of the project involves a large investment by the Commonwealth and NSW Governments (estimated to be approximately \$4.4 billion in 2010 dollars) (NSW 2011a). This expenditure is expected to generate considerable economic benefit to industries in the study area particularly for construction businesses in terms of job creation.

The construction workforce would comprise a combination of professional staff, administration staff, supervisors, tradesmen, plant operators, truck drivers, unskilled labour and subcontractors. The size and composition of the workforce at any given time would depend on the size of the section under construction and the activities underway.

A core workforce comprising a range professional staff, supervisors, tradesmen and plant operators would typically be sourced from within the contractor's organisation. However, much of the construction workforce is expected to be sourced from the study area, including a wide range of sub-contractors and suppliers. Specialist sub-contractors and materials suppliers would also be sourced from outside the study area.

Table 4-1 shows the estimated full-time construction workforce for the eleven project sections, based on comparable major highway upgrade projects recently undertaken by RMS. These numbers exclude part-time, off-site workers and delivery truck drivers.

Table 4-1 Estimated full-time construction workforce

Section	Location	Estimated peak construction workforce	
		Minimum	Maximum
1	Woolgoolga to Halfway Creek	250	350
2	Halfway Creek to Glenugie upgrade	150	200
3	Glenugie upgrade to Tyndale	800	1000
4	Tyndale to Maclean	400	500
5	Maclean to Iluka Road, Mororo	550	650
6	Iluka Road to Devils Pulpit upgrade	150	200
7	Devils Pulpit upgrade to Trustums Hill	200	300
8	Trustums Hill to Broadwater National Park	200	300
9	Broadwater National Park to Richmond River	150	200
10	Richmond River to Coolgardie Road	350	450
11	Coolgardie Road to Ballina Bypass	100	150
	Total	3300	4300

Figure 4-2 shows the estimated total construction workforce required for the project for each quarter, based on the workforce numbers outlined in Table 4-1 and the project delivery staging identified to allow completion of the initial class A and class M dual carriageway upgrade by the end of 2016.

The actual size of the construction workforce would vary over time and be influenced by the nature and combination of construction activities underway and the construction staging strategy adopted for the project. However, based on the proposed project delivery staging, it is expected that the project would require a total peak workforce of between 3,100 workers and 4100 workers, during the third and fourth quarters of 2015.

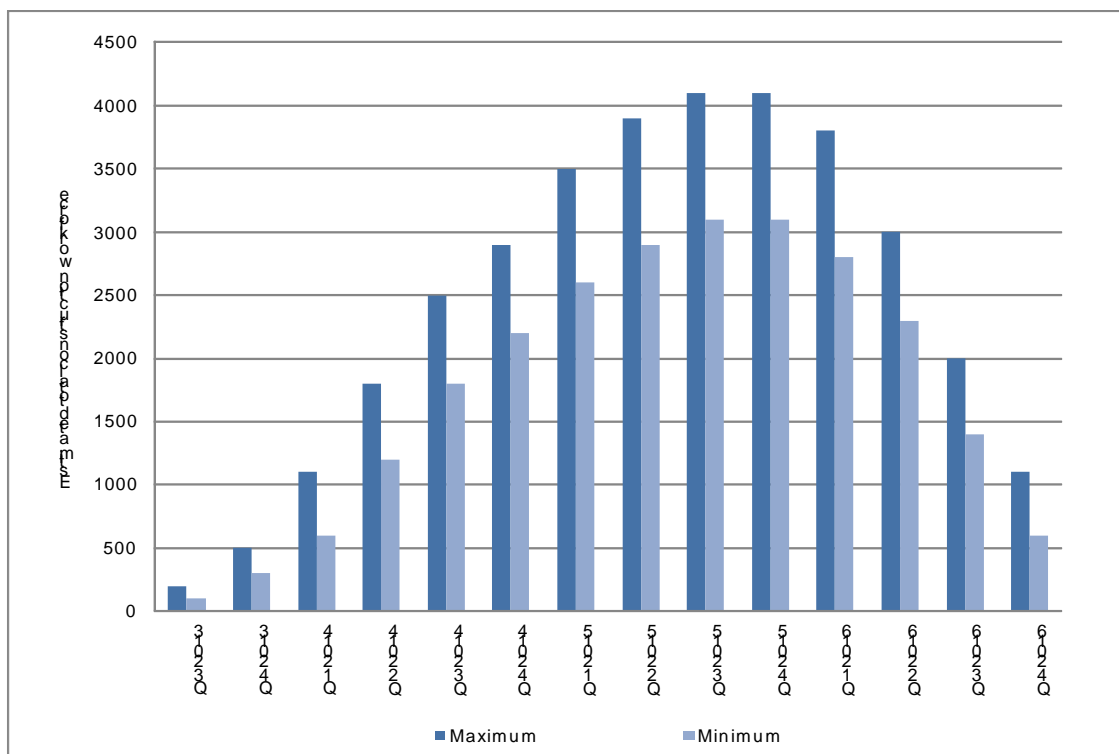


Figure 4-2 Total construction workforce for completion by December 2016

4.3.2. Operation

Improved productivity and growth

Research for the Eddington Transport Study (2006) identified seven micro-drivers of economic growth which can be achieved through transport efficiency gains. In particular, clusters and agglomerations are identified as a key driver of productivity for projects such as the Pacific Highway upgrade as it enables:

- Better matching of people to jobs and access to skilled labour, as a result of denser labour markets
- Connection to suppliers and markets
- Information spillover between firms
- Consumption benefits from access to a broader range of activity opportunities.

Public investment in infrastructure can have a significant impact on economic growth. The Australian Treasury (1992) recognised infrastructure as an important feature of a country's standard of living due to its influence on factors affecting quality of life such as economic growth, environmental protection, health and safety. The World Bank (1994) also emphasised

the important role that infrastructure plays in ensuring households and businesses function effectively.

The Australian Productivity Commission (2005), in reviewing national competition reforms, found improving the efficiency of infrastructure services in key infrastructure sectors over the period 1989-90 to 1999-00, increased Australia’s real Gross Domestic Product by 2.5 per cent.

One of the first studies recognising the link between infrastructure and economic output was the work of Aschauer (1989), who estimated that in the United States, a one per cent increase in public infrastructure spending results in a 0.4 per cent increase in economic output (referred to as the output elasticity). A number of Australian specific studies have also estimated economic benefit from infrastructure investment using this output elasticity measure. The results of some of these Australian studies are shown in Table 4-2.

Table 4-2 Relationships between public infrastructure investment and output

Study	Description
Otto and Voss (1998)	A one per cent increase in public expenditure is expected to result in 0.07 per cent increase in economic output.
Kam (2001)	A one per cent increase in public expenditure is expected to result in 0.10 per cent spill over effect to output.
Pereira (2001)	A one per cent increase in public expenditure is expected to result in 0.17 per cent increase in economic output.
Song (2002)	A one per cent increase in public expenditure is expected to result in 0.27 per cent to 0.38 per cent increase in economic output.

The implication of these studies suggests that the upgraded highway would improve the transport efficiency of the region and in turn, lead to regional economic growth and development. Section 4.5 provides a more detailed discussion of operational impacts on local businesses within towns and villages near the project.

Reduced cost of travel time and congestion

Road based congestion has a negative impact on road users (commercial and/or private) as a result of:

- Increased freight travel times, transportation costs and vehicle operating costs
- Impeded staff access and access to workforce and work related skills
- Reduced attraction of the region as a place to establish new business and investment
- Socio-economic or personal cost through time delays, vehicle operating costs and stress.

Road users reliant on more efficient and improved travel times would benefit most from the project through reduced travel times and traffic congestion in those specific locations where congestion might occur at peak times. Increased average traffic speeds and shorter travel distances would reduce travel times for road users, resulting in savings to regional businesses relating to time spent travelling by their employees, vehicles and goods; savings to non-commercial (unpaid) time spent on travel; and improved travel safety. These benefits are

expected to include lower vehicle operating costs from more efficient journey speeds between towns.

A number of negative externalities associated with road transport would be also be reduced by the project, such as air pollution and traffic noise impacts. These would be reduced through the more efficient movement of vehicles and shorter travel times along the upgraded highway. These benefits stem specifically from transport activities, but would be experienced by the wider community.

4.4. Agribusinesses

4.4.1. Construction

Loss of agricultural land

Spatial data has been used to estimate the area of agricultural land intersected by the road boundary and that would be acquired or isolated by the project. The construction of the project would reduce the potential productive capacity of some agribusinesses from severance and acquisition.

Figure 4-3 shows a hypothetical production function of a livestock enterprise to illustrate this impact.

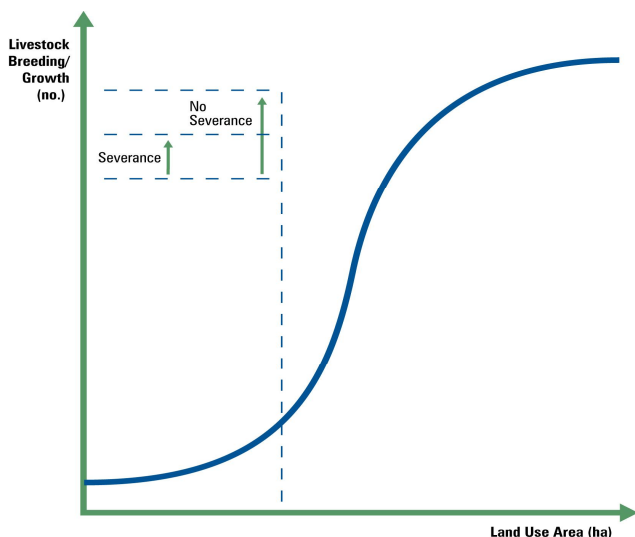


Figure 4-3 Expected impact of severance on farm production

The impact of severance is expected to reduce the capacity of the agricultural enterprise in some cases and reduce efficiency from two key factors:

- A loss of productive land directly available to the enterprise with impacts on the economies of scale required to run an efficient agricultural enterprise
- Increased operating costs, from movement of livestock and/or farm machinery over or under the upgraded highway.

Other potential negative impacts from severance include:

- Increased costs from a change in whole-farm management plans and re-deployment of infrastructure such as dams, sheds and other facilities
- 'Realised' devaluation of land resulting from severance.

Table 4-3 shows the estimated loss in agricultural land use from the project by local government area. The estimated loss in agricultural land uses are calculated per hectare.

Table 4-3 Estimated loss in agricultural land use from the project

Local government area	Total agricultural land use (hectares)	Loss in agricultural land use	
		Hectares	Per cent
Coffs Harbour	29,865	54	0.2
Clarence Valley	323,785	598	0.2
Richmond Valley	119,916	161	0.1
Lismore	88,687	-	-
Ballina	29,519	140	0.5
Total	591,772	953	0.2

About 953 hectares of agricultural land is expected to be affected by the project. This represents a small proportion of agricultural land in the study area (about 0.2 per cent). Based on individual local government areas:

- Ballina is expected to have the greatest impact as a proportion of total agricultural land, with 140 hectares of land area lost, or 0.5 per cent of agricultural land in the Ballina local government area
- The Clarence Valley, Coffs Harbour and Richmond Valley local government areas are expected to have greater areas of agricultural land impacted by the project, although this represents a lower proportion of total agricultural land in each local government area (between 0.1 per cent and 0.2 per cent).

Table 4-4 provides a detailed breakdown of land area by crop type for each local government area, and the corresponding area lost to the project as a percentage (Table 4-5).

Table 4-4 Estimated loss in agricultural land use by the project

Crop	Coffs Harbour		Clarence Valley		Richmond Valley		Lismore		Ballina		Total	
	Total area	Affected area	Total area	Affected area	Total area	Affected area	Total area	Affected area	Total area	Affected area	Total area	Affected area
Aquaculture	-	-	321	2	23	-	-	-	7	-	350	2
Hardwood production	378	-	2,711	0.5	964	-	786	-	42	-	4,882	0
Irrigated tree fruits	575	4	387	-	191	-	4	-	-	-	1,157	4
Irrigated vegetables and herbs	4	-	11	1	-	-	5.5	-	33	-	53	1
Irrigated vine fruits	-	-	28	0.5	10	-	-	-	-	-	38	0
Pasture mosaic	24,255	45	298,229	365	98,236	110	71,916	-	15,860	88.5	508,497	608
Softwood production	0.5	-	783	-	5,233	3.5	16	-	8	-	6,041	4
Sugar	-	-	15,637	224	3,798	45	7,970	-	8,247	50.5	35,652	319
Tree fruits	3,388	5	277	-	55	-	483	-	524	-	4,727	5
Tree nuts	-	-	1	-	138	1	4,709	-	3,998	-	8,847	1
Vegetables and herbs	54	-	199	1	-	-	7	-	2	-	261	1
Vine fruits	18	0.5	8	-	-	-	-	-	-	-	26	0.5
Other	1,192	-	5,193	4	11,268	2	2,790	-	798	1	21,241	7
Total	29,865	54	323,785	598	119,916	161.5	88,687	-	29,519	140	591,772	953

Table 4-5 Estimated loss in agricultural land use as a percentage of total agricultural land

Crop	Coffs Harbour	Clarence Valley	Richmond Valley	Ballina	Total
	Area lost (%)	Area lost (%)	Area lost (%)	Area lost (%)	Area lost (%)
Aquaculture	n/a	0.7	n/a	n/a	0.6
Hardwood production	n/a	n/a	n/a	n/a	0.0
Irrigated tree fruits	0.6	n/a	n/a	n/a	0.3
Irrigated vegetables and herbs	n/a	9.2	n/a	n/a	1.9
Irrigated vine fruits	n/a	0.6	n/a	n/a	0.0
Pasture mosaic	0.2	0.1	0.1	0.6	0.1
Softwood production	n/a	0.0	0.1	n/a	0.1
Sugar	n/a	1.4	1.2	0.6	0.9
Tree fruits	0.1	n/a	n/a	n/a	0.1
Tree nuts	n/a	n/a	0.5	n/a	0.01
Vegetables and herbs	n/a	0.6	n/a	n/a	0.4
Vine fruits	2.5	n/a	n/a	n/a	1.9
Other	n/a	0.1	n/a	0.1	0.3
Total	0.2	0.2	0.1	0.5	0.2

Note: Figures may not sum precisely due to rounding.

The direct loss in agricultural land use by crop type due to the project is expected to be minor across the study area (Table 4-5). Specifically, the project is expected to result in:

- A loss of 1.8 per cent in the use of irrigated vegetables and herb production. This represents about one hectare of irrigated vegetable and herbs land of about 53 hectares in the study area. Impacts on this crop are expected to occur within the Clarence Valley local government area
- A loss of 0.7 per cent of in the use of aquaculture, representing about 2 hectares of land area used for this crop in the study area. Impacts on this crop are expected to occur within the Clarence Valley local government area
- A loss of 0.9 per cent in sugarcane use, representing about 319 hectares of sugarcane land of about 35,652 hectares of total agricultural land for this crop in the study area. Impacts on this crop are expected to occur within the Clarence Valley, Richmond Valley and Ballina local government areas
- A loss of 1.9 per cent in vine fruit production. This represents 0.5 hectares of vine fruits land of about 26 hectares of total agricultural land for this crop. Impacts on this crop are expected to occur within the Coffs Harbour local government area.

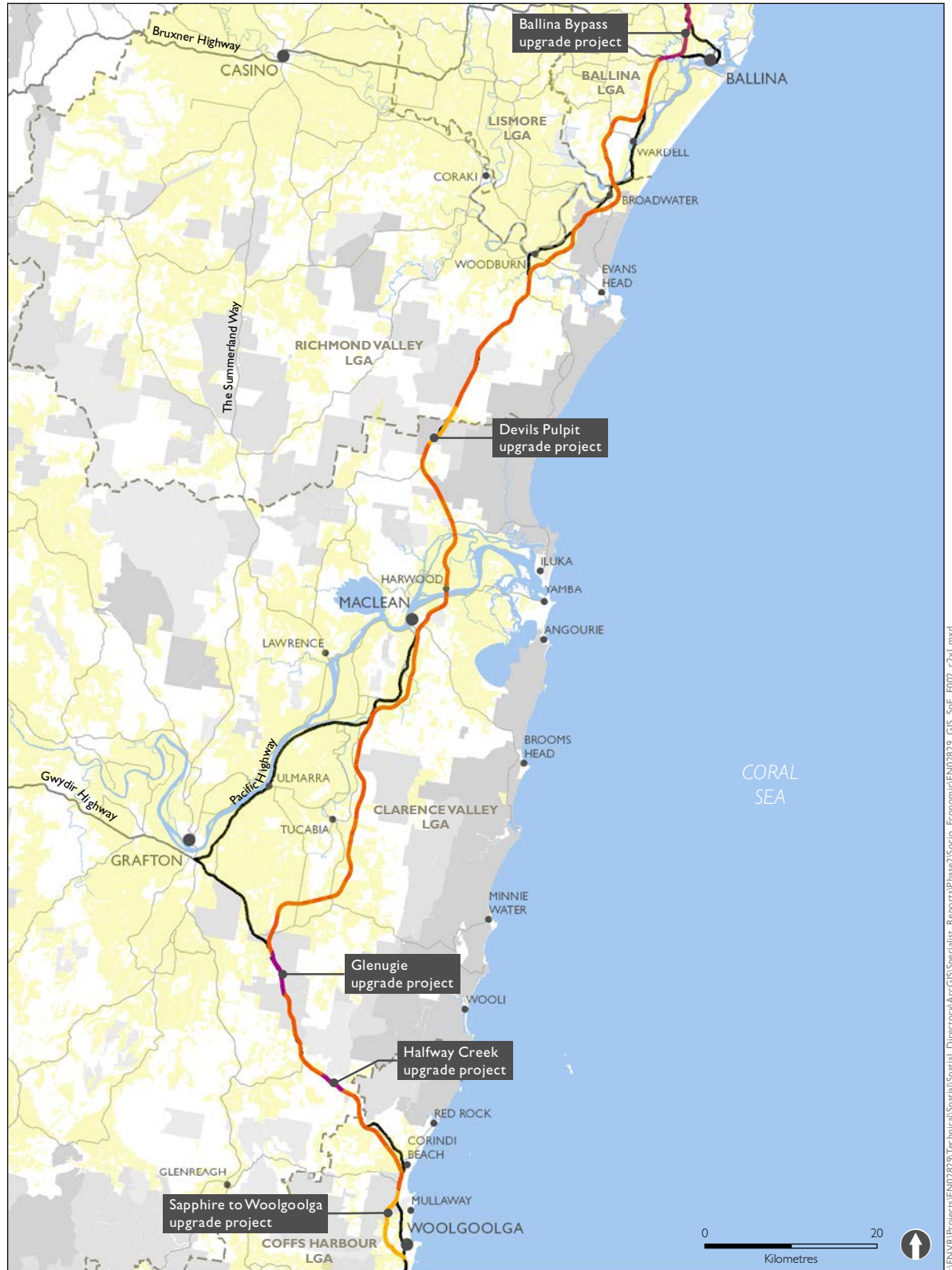
Consultation for the project identified sugarcane in particular, as an important industry in the study area, with the sugar industry having been part of the agri-economy in northern NSW for more than one hundred years. It is also a significant contributor to the economy, being one of the region's biggest employers and accounting for \$230 million of regional economic output. The industry provides total direct and indirect employment for an estimated 2200 people across the region, including 450 people in the mill and refinery and 550 cane farmers (NSWSMC, 2012).

Milling operations are located at Condong on the Tweed River, Broadwater on the Richmond River and Harwood on the Clarence River. In addition, the NSW Sugar Milling Co-operative (NSWSMC) operates a sugar refinery at Harwood, in a joint venture with Manildra Harwood Sugars (NSWSMC 2012).

As noted above, approximately 306 hectares of sugarcane land is expected to be lost to the project. This compares to approximately 33,000 hectares of total sugarcane land in the Northern Rivers region of NSW, extending from the Queensland border to Grafton in the south (NSWSMC 2012). This amount lost represents less than one per cent of total sugarcane land lost in Northern NSW.

Figure 4-4 to Figure 4-15 shows the area of agricultural land lost to the project.

Figure 4-4 Agricultural land



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway
- Agricultural land

Figure 4-5 Section I - Woolgoolga to Halfway Creek - Directly affected agricultural land

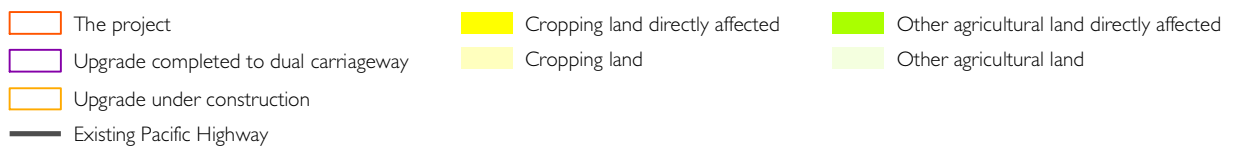
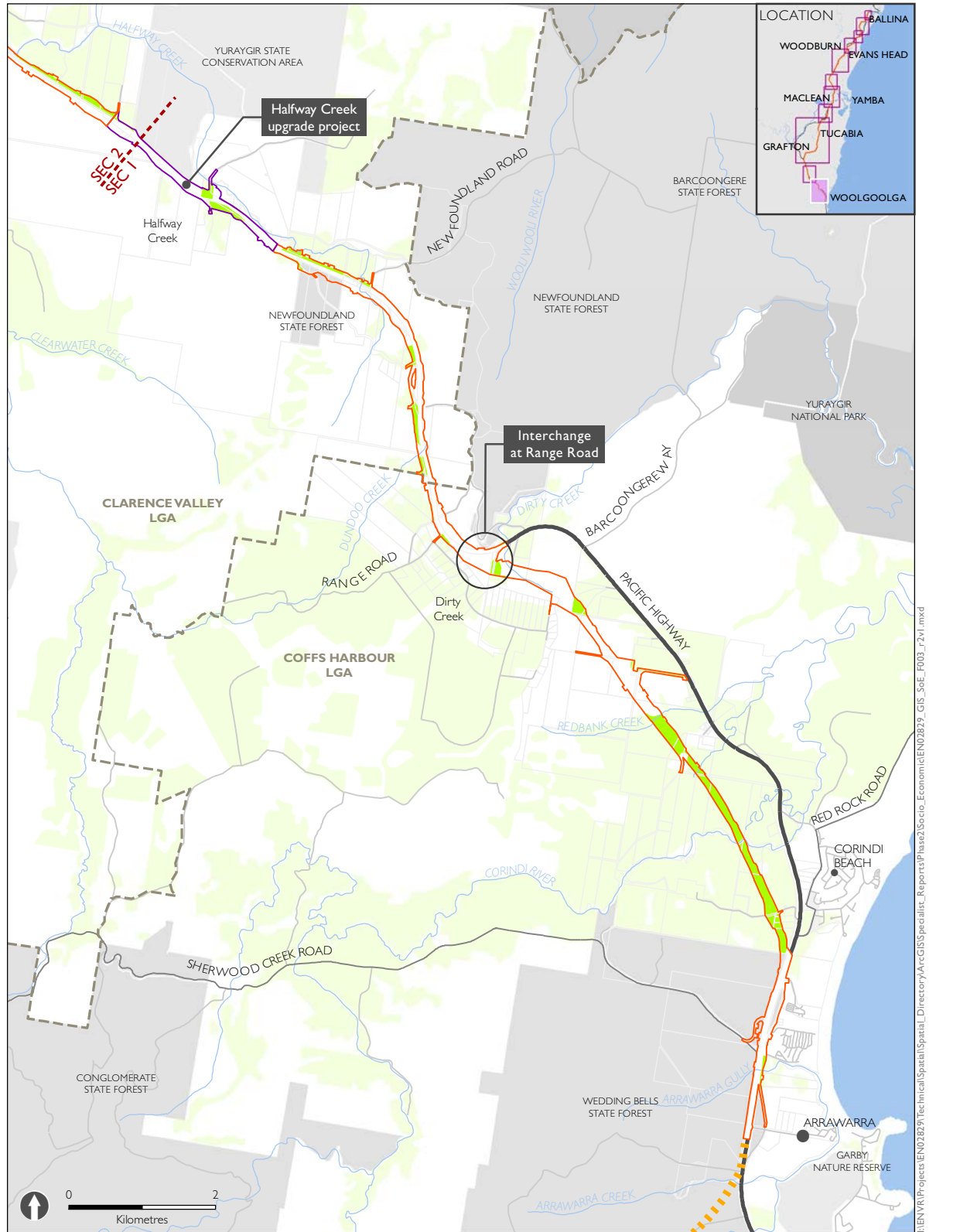


Figure 4-6 Section 2 - Halfway Creek to Glenugie upgrade - Directly affected agricultural land



- | | | |
|---------------------------------------|---------------------------------|---|
| The project | Cropping land directly affected | Other agricultural land directly affected |
| Upgrade completed to dual carriageway | Cropping land | Other agricultural land |
| Upgrade under construction | | |
| Existing Pacific Highway | | |

Figure 4-7 Section 3 - Glenugie upgrade to Tyndale - Directly affected agricultural land

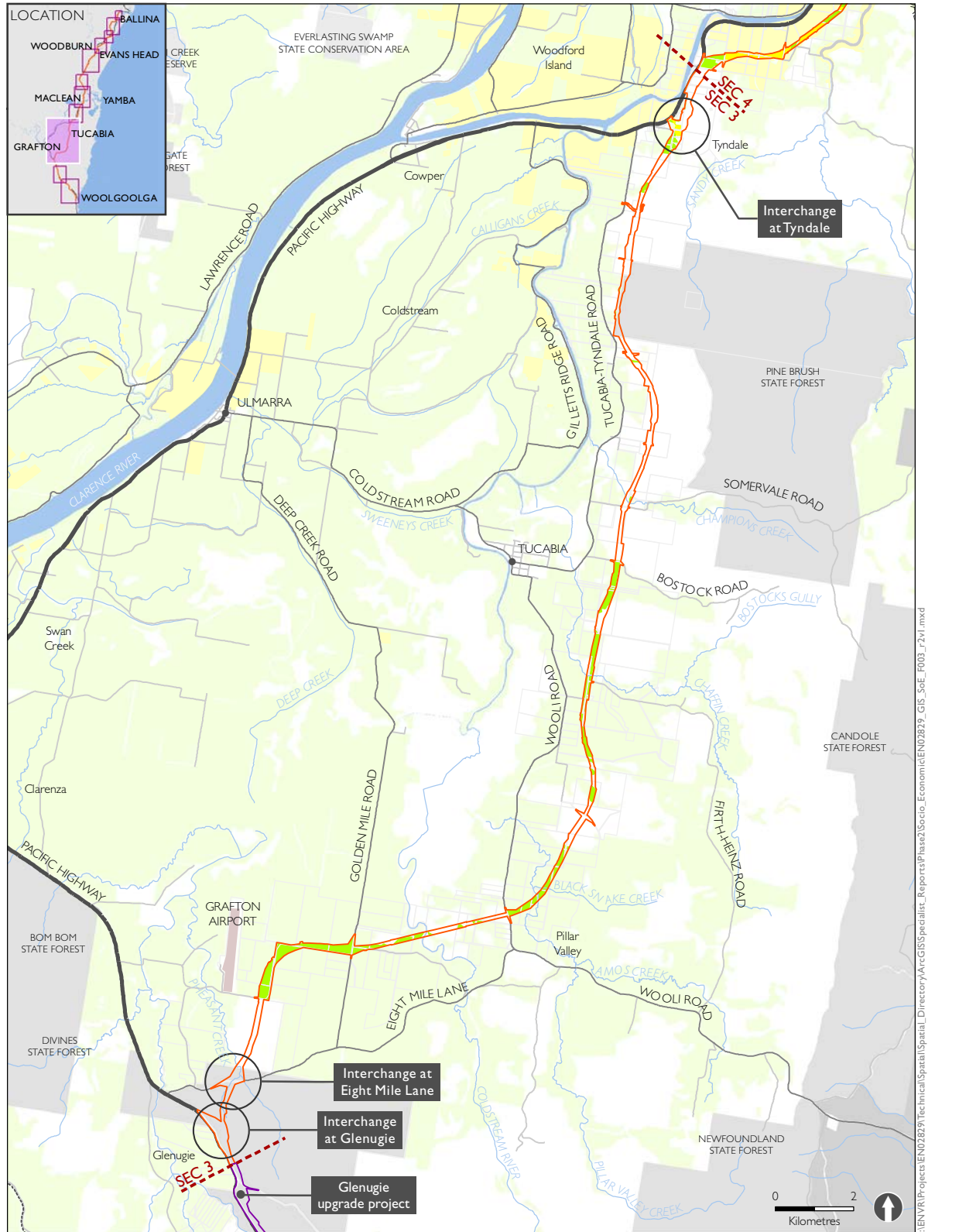


Figure 4-8 Section 4 - Tyndale to Maclean - Directly affected agricultural land

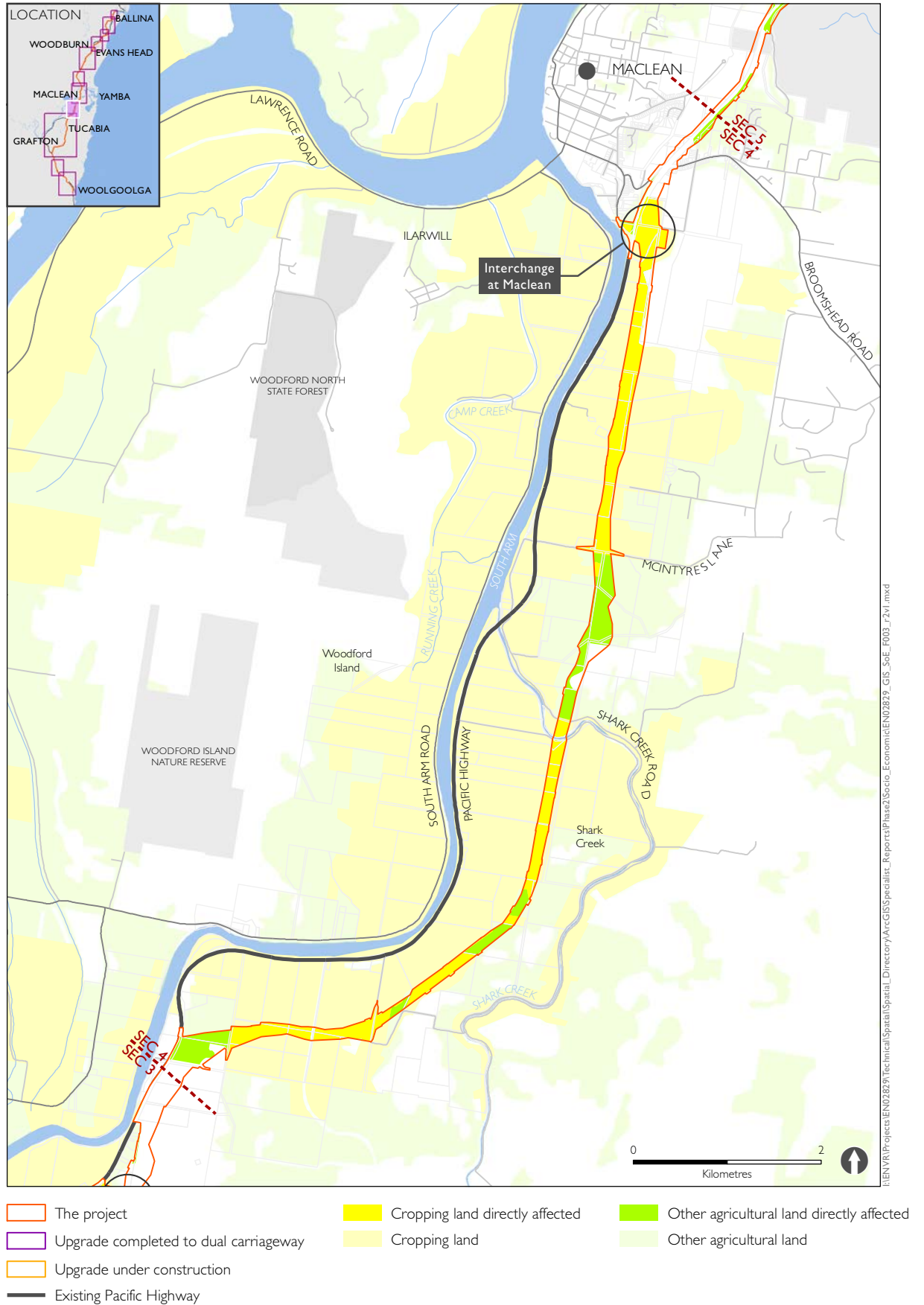
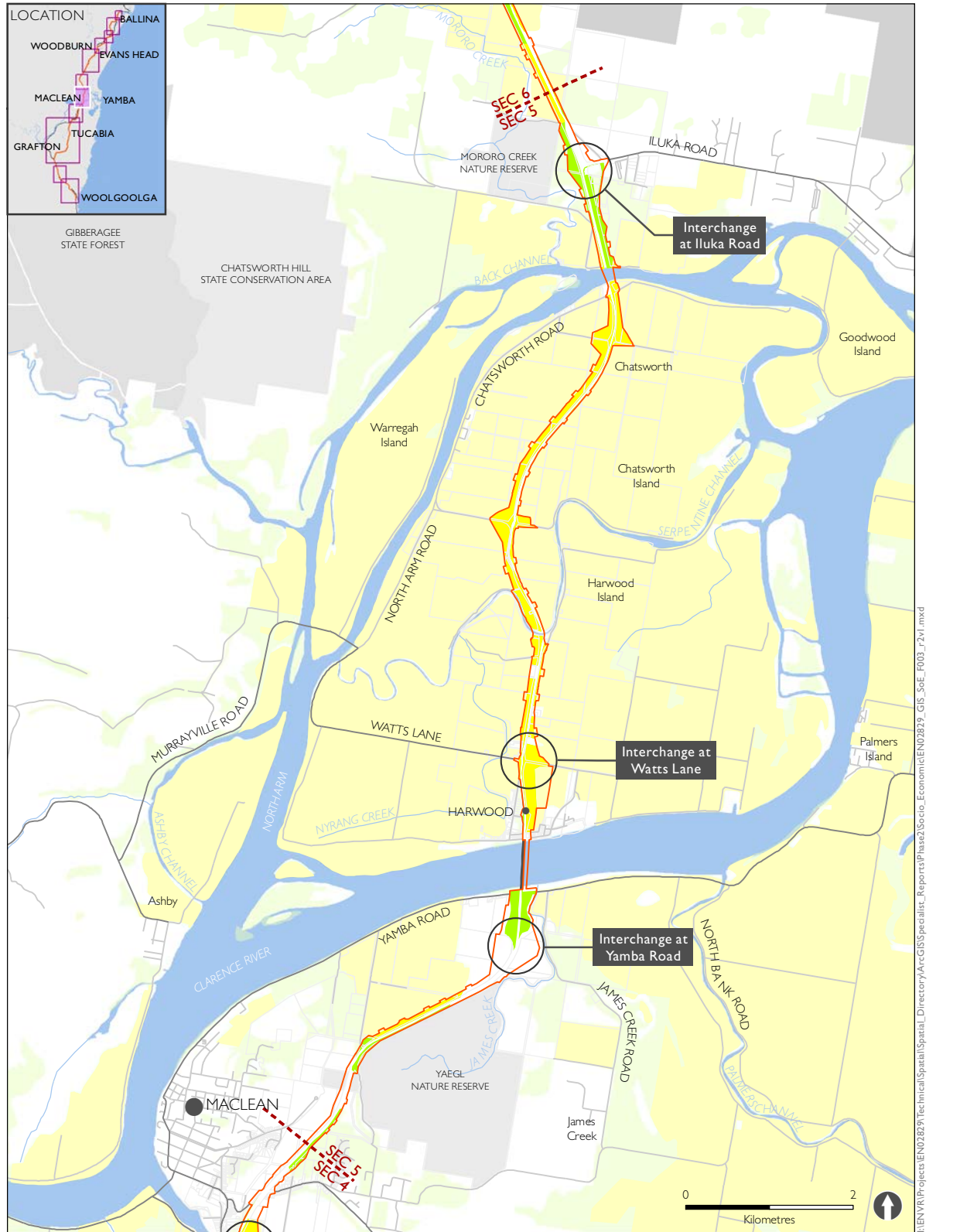


Figure 4-9 Section 5 - Maclean to Iluka Road - Directly affected agricultural land



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway
- Cropping land directly affected
- Cropping land
- Other agricultural land directly affected
- Other agricultural land

Figure 4-10 Section 6 - Iluka Road to Devils Pulpit upgrade - Directly affected agricultural land

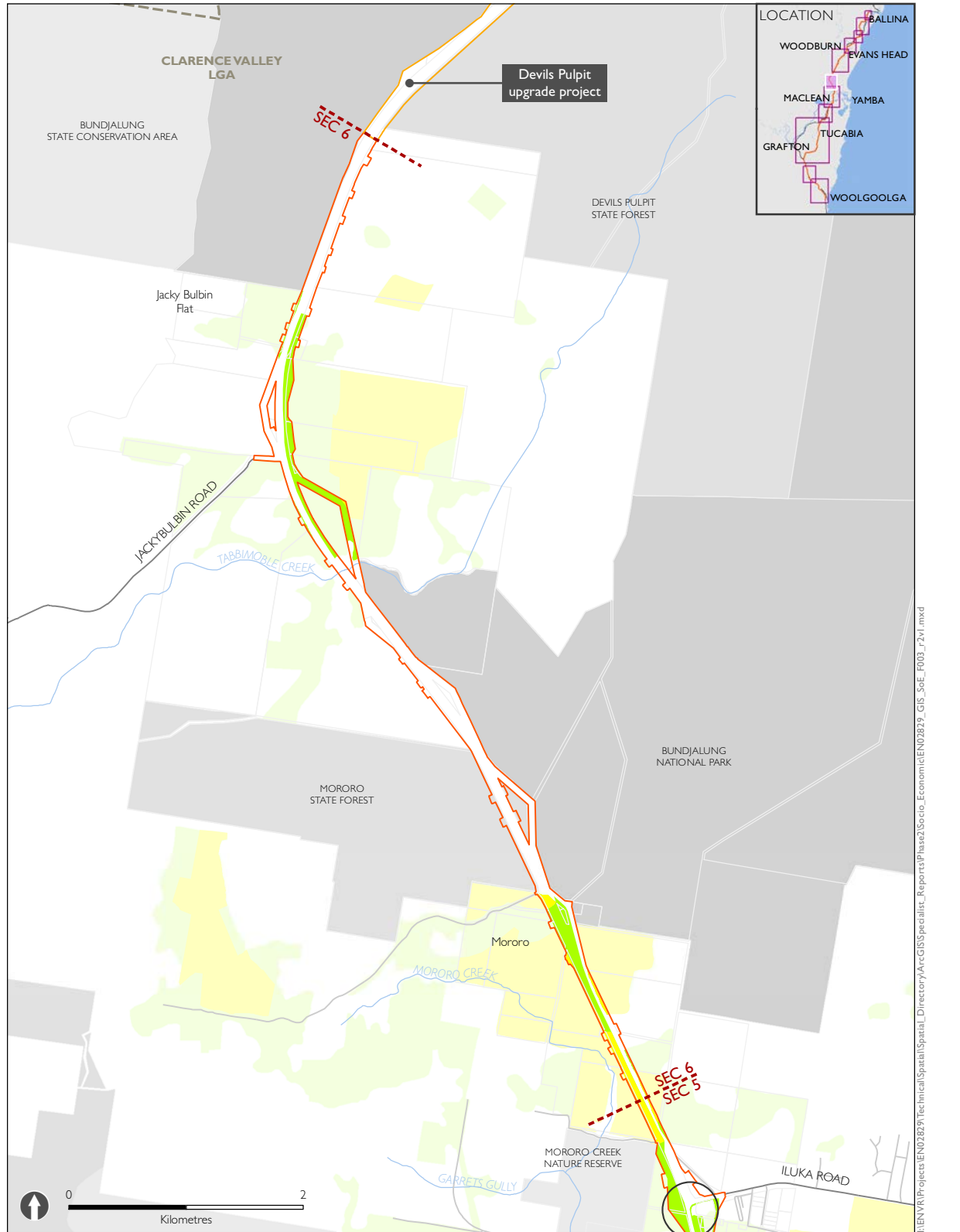
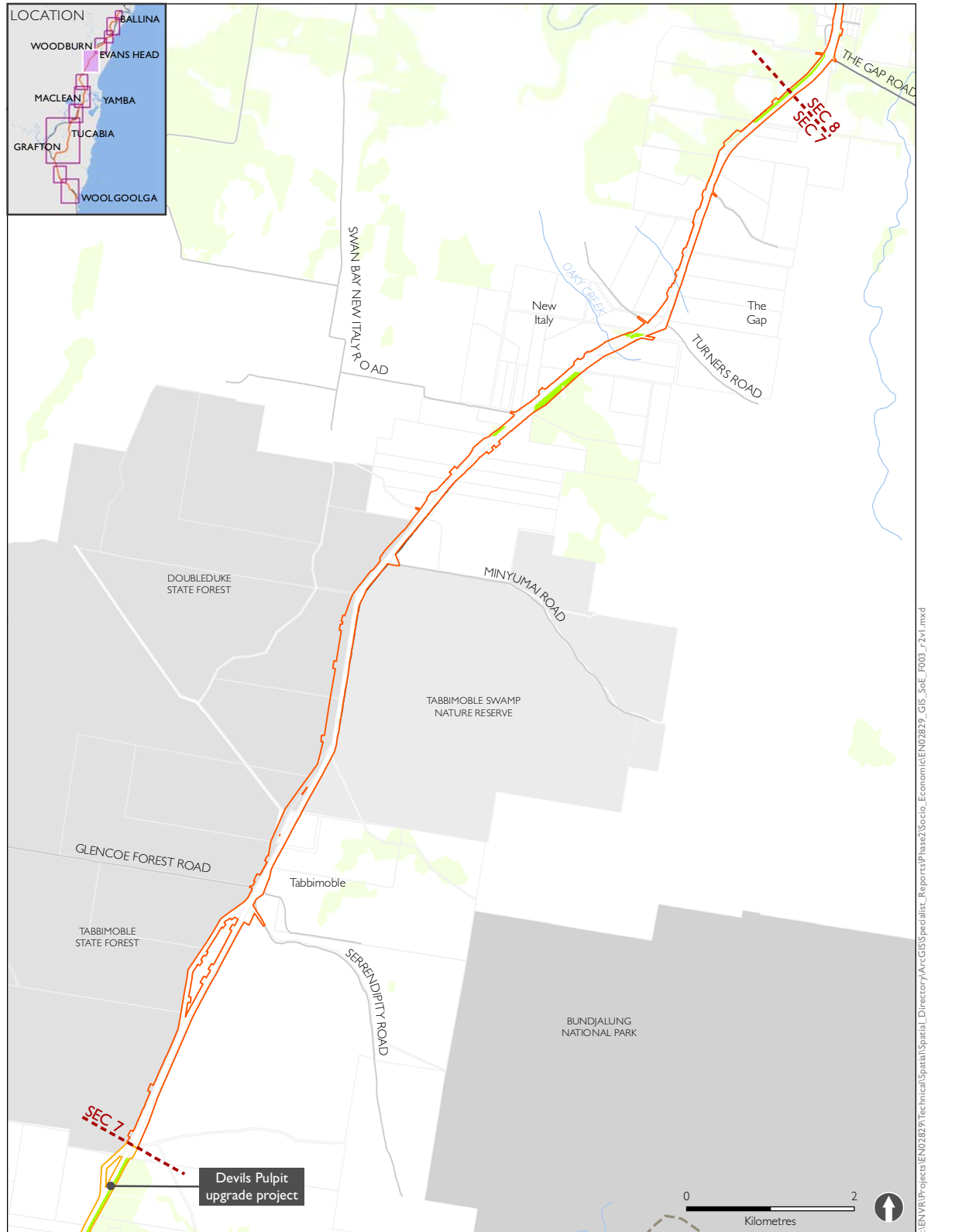


Figure 4-11 Section 7 - Devils Pulpit upgrade to Trustums Hill - Directly affected agricultural land



- The project
- Cropping land directly affected
- Other agricultural land directly affected
- Upgrade completed to dual carriageway
- Cropping land
- Other agricultural land
- Upgrade under construction
- Existing Pacific Highway

Figure 4-12 Section 8 - Trustums Hill to Broadwater National Park - Directly affected agricultural land

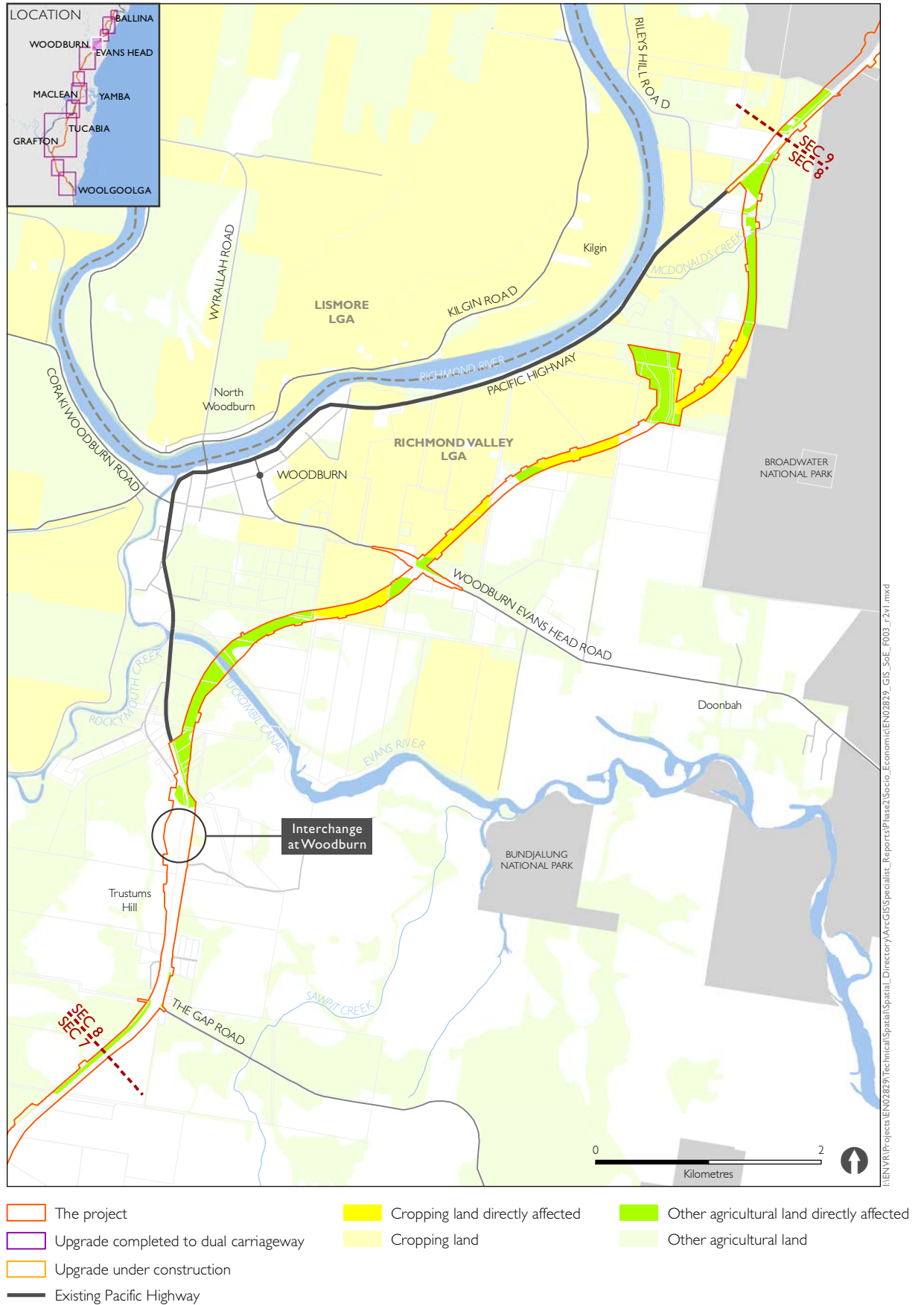
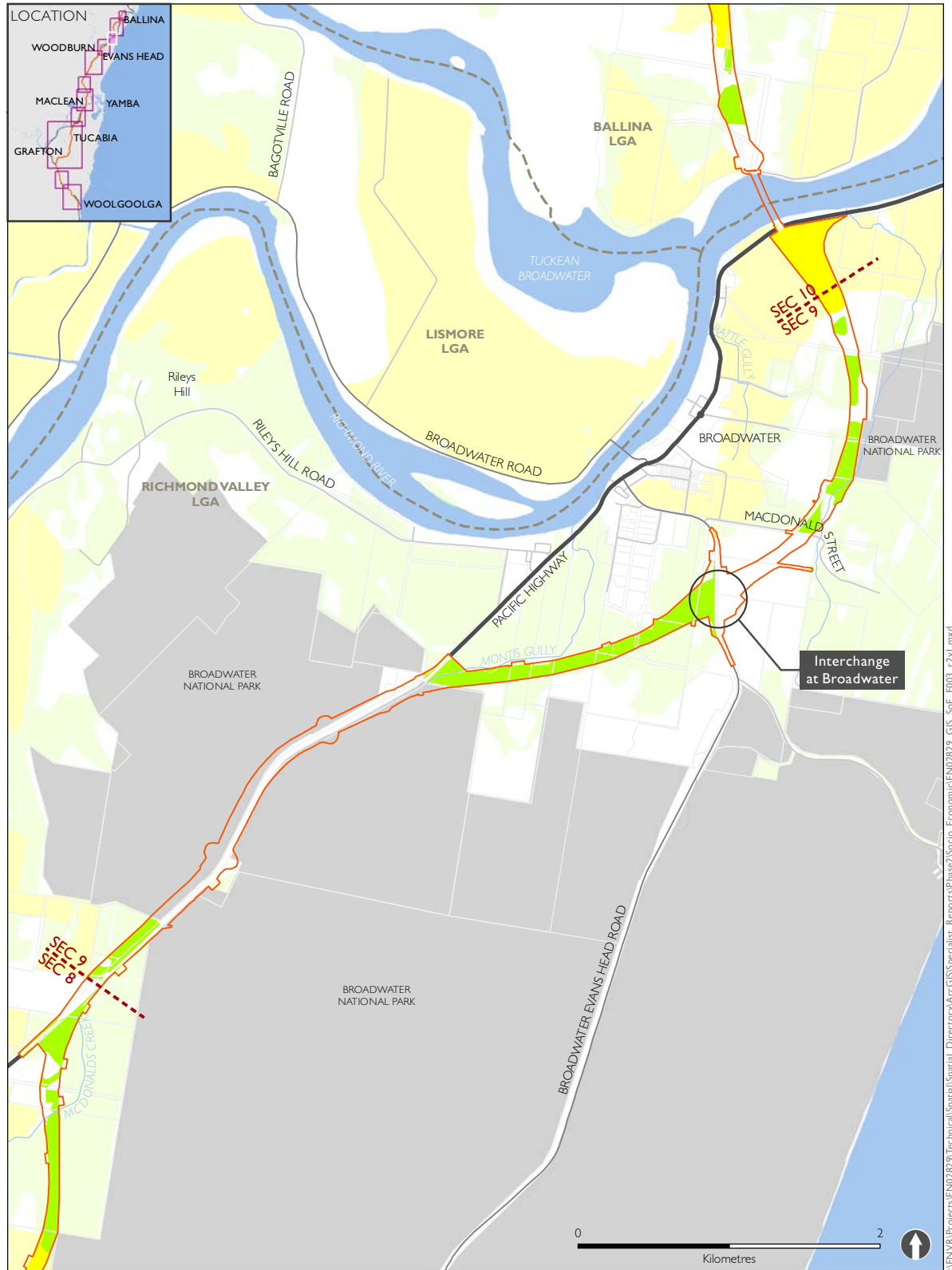
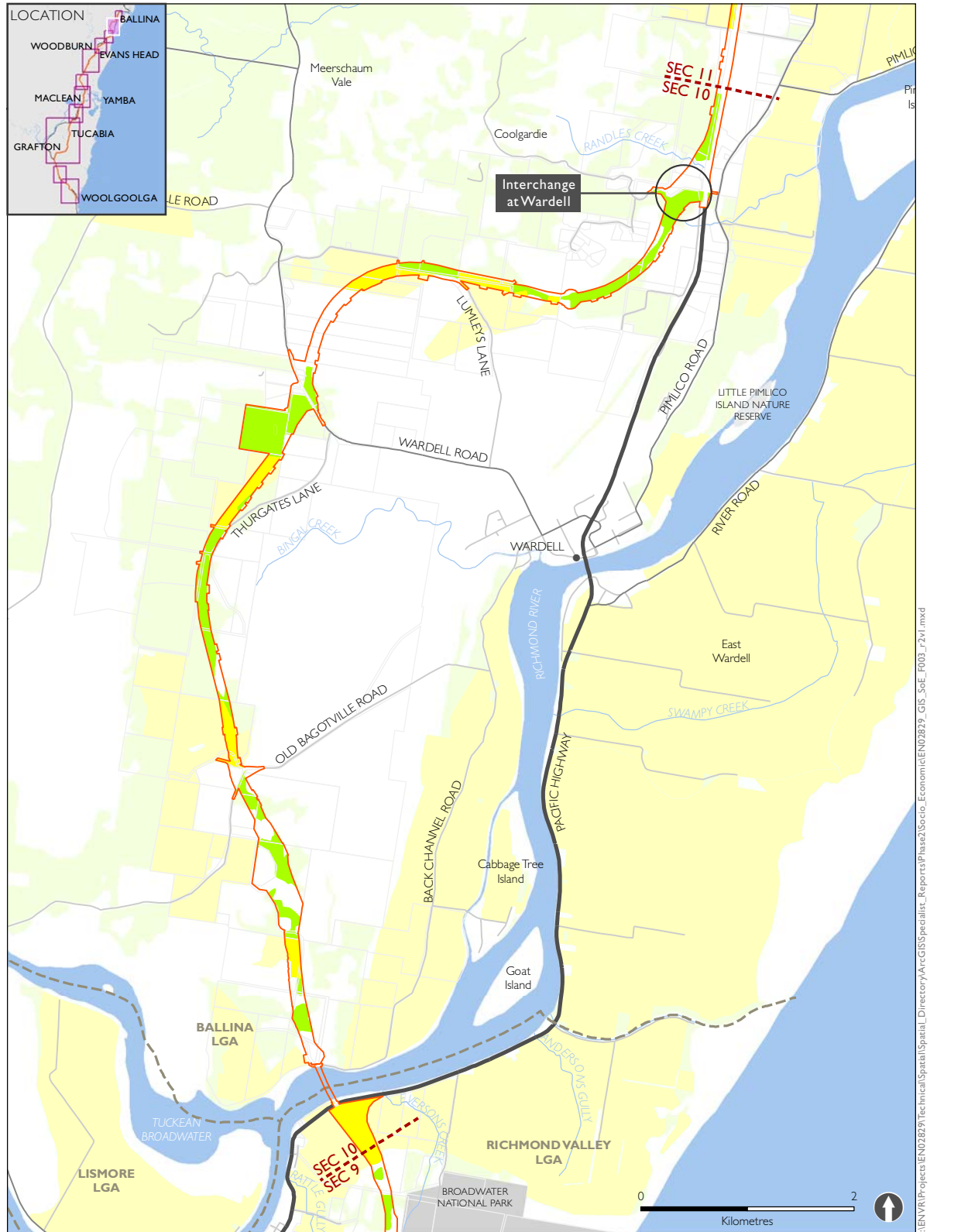


Figure 4-13 Section 9 - Broadwater National Park to Richmond River - Directly affected agricultural land



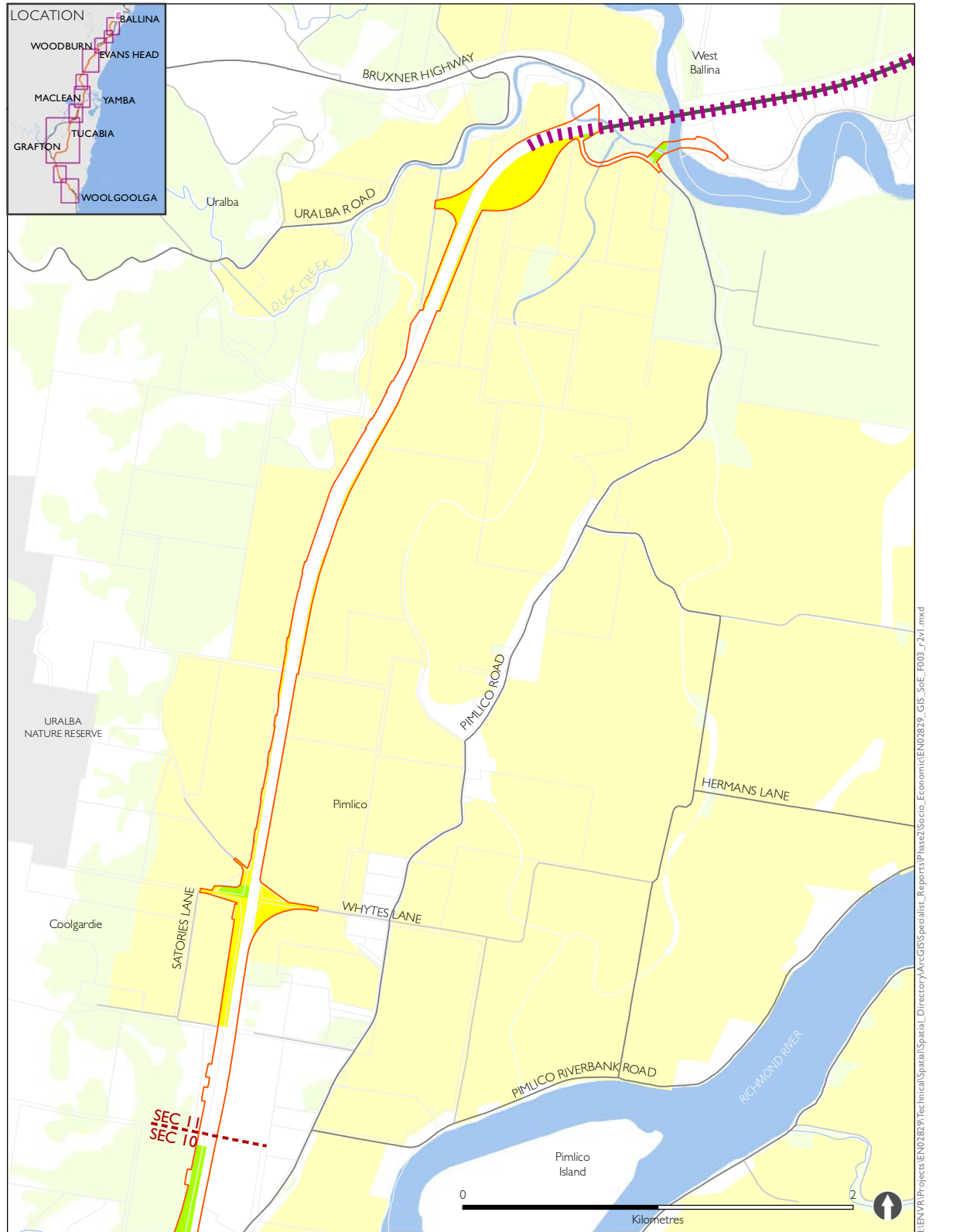
- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway
- Cropping land directly affected
- Cropping land
- Other agricultural land directly affected
- Other agricultural land

Figure 4-14 Section 10 - Richmond River to Coolgardie Road - Directly affected agricultural land



- The project
 - Upgrade completed to dual carriageway
 - Upgrade under construction
 - Existing Pacific Highway
- Cropping land directly affected
 - Cropping land
- Other agricultural land directly affected
 - Other agricultural land

Figure 4-15 Section II - Coolgardie Road to Ballina bypass - Directly affected agricultural land



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway
- Cropping land directly affected
- Cropping land
- Other agricultural land directly affected
- Other agricultural land

A review of properties directly affected by the project identified 13 specific types of agribusinesses impacted along the project, representing about 148 individual property owners. Potential impacts related to either property severance, demolition of farming infrastructure or changes to access. In particular:

About 148 individual land owners with agricultural interests would be directly affected by the project. These include 57 land owners undertaking cropping activities (including sugar cane farmers), 88 land owners related to grazing, and 3 land owners related to a mix of horticulture.

A more detailed assessment of the impacts on property owners is provided in the land use and property working paper.

4.4.2. Operation

Increased road transport efficiency

It is important that the Australian agricultural sector operations are coordinated along the supply chain, ensuring that productivity and efficiency is maintained for agribusinesses. Regional agribusinesses and the wider resource, food and fibre production communities are expected to benefit from the project through increased productivity and competitiveness of the agricultural industry, especially those agribusinesses that use the upgraded highway to transport agricultural output.

The project is expected to improve traffic flow along the upgraded Pacific Highway during operation, providing the following benefits to freight dependent agribusinesses:

- Travel times savings for light and heavy vehicles resulting from increased traffic speeds and/or shorter travel distances.
- Reduced vehicle operating costs driven by better road alignment, a shorter route for some journeys, and a better road surface.
- Crash cost savings including factors such as lives saved, injuries avoided and non-injury related accidents (such as property damage) for freight dependent agribusinesses.

A more detailed outline of the cost-savings accruing to road users (and by default agribusinesses using light and heavy vehicles to transport goods and services) is in PwC (2011).

4.5. Local businesses

This section provides an assessment of impacts on local businesses. Six key drivers were considered to assess impacts on local businesses within towns and villages. These included accessibility and traffic; visibility; amenity; town size; distance to larger towns; and economic base.

4.5.1. Accessibility and traffic

The accessibility of a township contributes to the connectivity of shops and local businesses to customers, staff and supplying businesses. In this regard, some towns and villages along the existing Pacific Highway rely on ease of access to goods and services (eg food shops and restaurants along the existing highway for stopping motorists). The project would bypass some towns and villages along the existing Pacific Highway. This may reduce the accessibility of highway-generated trade for some local businesses, affecting the overall well-being of local businesses in some towns and villages. Of the 440 businesses counted along the existing Pacific Highway, approximately 238 businesses are expected to be bypassed by the project. This represents approximately 54 per cent of businesses surveyed.

Traffic flows within townships also affects accessibility, as shops and businesses in the towns and villages may experience traffic congestion and reduced accessibility. At the same time, businesses located in those towns and villages bypassed by the project may experience decreased traffic flows as less vehicles pass through the towns and villages. This has the effect of increasing convenience for customers seeking to access services to the benefit of local businesses.

4.5.2. Visibility

The visibility of local businesses is closely related to accessibility in that travellers are more likely to visit businesses if they are clearly visible. For example, construction related works along the existing highway may reduce visibility from some businesses. In this context, approximately 156 businesses are located along the existing highway, about 36 per cent of total businesses surveyed.

4.5.3. Amenity

Changes in local amenity due to changes in noise, air and vibration from the project would influence the degree of business activity. For example, increased noise and vibration has the potential to adversely affect employee productivity, interaction with customers, and general ambience. During operation, changes in amenity due to changes in highway traffic would have implications for those businesses that rely on serene environments such as outdoor dining cafes.

The quality of the public domain is also closely related to the amenity and includes community facilities or land which is held by local government (eg sports and recreational grounds, parks or state forests). Specifically, the public domain relative to certain business can potentially affect their profitability, should they be dependent on these facilities as a means of generating trade.

4.5.4. Town size

The size of a township is another driver influencing the degree of impact on local businesses. Research undertaken for RMS by Parolin (2011) found that highway bypasses are seldom either detrimental to, or the saviour of, an established community. While smaller communities have greater potential to be impacted economically due to a loss of highway related trade, larger towns, have a greater propensity to maintain their characteristics for visitors. Overall impacts for medium to larger towns are generally small and insignificant to the well-being of the community (Chase and Gustavon 2004 cited in Parolin 2011). Specifically, although the quantity of customers may decrease, the quality increases with those choosing to stop at these locations making major purchases (Handy et al. 2000 cited in Parolin 2011).

4.5.5. Distance and proximity to larger towns

The distance to a larger centre also contributes to the severity of the project's impact on local businesses, with the greater the distance to the town, the less likely motorists would be to stop. In this regard, regional centres are less likely to be affected by a bypass due to established linkages (Parolin 2011). Proximity of villages to larger centres and towns would also affect the degree of impact. That is, travellers may choose to stop at a centre on the highway instead of the bypassed town. At the same time, local residents may also have easier access to centres and may become more prone to out shopping (Sivaramakrishnan and Kockelman 2002; Handy et al 2000 cited in Parolin 2011).

4.5.6. Economic base and industry structure

The economic base of each township is a determinant of whether businesses would be able to sustain its operations as a result of a highway bypass. In this context, the number of businesses dependent on passing trade and/or traffic related business is important to the impacts the town will experience (Parolin 2011).

Those towns with a greater number of businesses reliant on highway generated trade may experience greater difficulty in managing post-bypass recovery than towns with a low level dependence on highway generated trade. Businesses are grouped into three distinct types for this purpose (Parolin 2011) including:

- Traffic dependent businesses (such as restaurants and petrol stations)
- Traffic related businesses (such as accommodation and professional services)
- Non-traffic related businesses (such as agriculture and manufacturing).

4.5.7. Construction

During construction, the project is expected to have both positive and negative impacts on the profitability and viability of businesses across the region.

The positive effects of the construction phase on business profitability and viability would be driven by the direct and indirect flow-on effects associated with construction expenditure. This expenditure is expected to increase the demand for local goods and services and reflect

positively on businesses in terms of increased employment, incomes and output. Key observations include:

- Business localities that are non-bypassed and in close proximity to construction works could be expected to benefit most. These localities may include Wells Crossing, Maclean, Harwood, New Italy and West Ballina
- Although South Grafton and Grafton are located further from the project, the prominence of these localities as a major regional centre suggests they would continue to be a destination of choice for highway and non-highway related needs
- Business sectors directly benefiting most from construction related activity across all locations include local construction contractors. Indirect businesses likely to benefit from construction expenditure and workforce activity include retail, accommodation, cafes and restaurants, as well as property and business services, where expenditure on the day-to-day needs by construction workers is expected to be most prevalent

Potential negative impacts of the construction phase on the profitability, viability and productivity of businesses in the study area would include:

- Businesses along the existing highway are expected to be most affected during construction from the effects of reduced accessibility, increased traffic disruptions, poorer visibility and a loss in the quality of operating environment. The localities likely to experience these effects most acutely include Wells Crossing, Harwood, and New Italy. Other business locations that are 'not along the existing highway' may also experience temporary disruptions resulting from heavy haulage
- Business sectors dependent on accessibility, traffic flow, visibility and a serene operating environment are expected to be most affected by construction. Examples of these types of business include the retail sector and the accommodation, cafes and restaurants sector
- Based on a desktop analysis of spatial data, it is estimated that 16 properties comprising businesses would be directly impacted by the project due to property acquisition, the potential need to relocate directly affected businesses, severance of properties, changes to access and demolition of buildings. The businesses directly affected as a result of the project boundary include.
 - Commercial quarry businesses, over around seven properties.
 - Two service stations.
 - Three caravan parks.
 - Four businesses consisting of a:
 - haulage depot
 - commercial machinery shed
 - museum
 - mill.

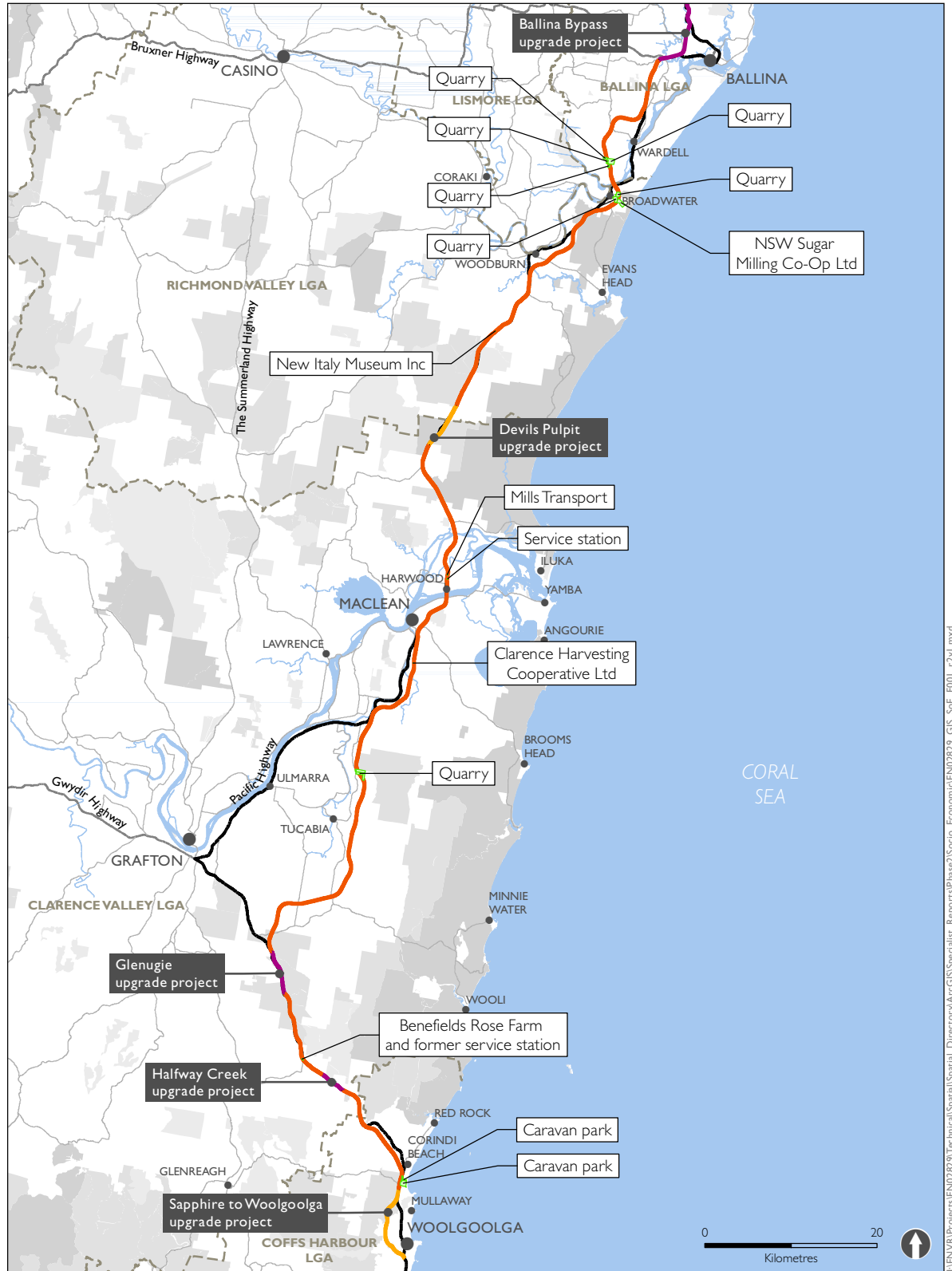
The acquisition of commercial quarry properties would result in the loss of approximately 26.3 hectares of quarry land and production output.

As indicated in Section 3.3.6, there are around 119 operational quarries across the North Coast region supplying construction materials. As such, the impact on the industry is expected to be minor, with alternative supplies available at other quarry sites. At the same time, the sensitivity of the extractive industry to transport costs is likely to mean the wider industry would benefit from the project's development through increased freight capacity and efficiency.

Further information on potential impacts on quarries across the region is provided in Chapter 6 (Description of the project - construction) and Chapter 16 (Land use and property).

Figure 4-16 to Figure 4-20 show examples of local businesses directly impacted by the project.

Figure 4-16 Directly affected local businesses



- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway
- Directly affected local businesses

Figure 4-17 Directly affected local businesses

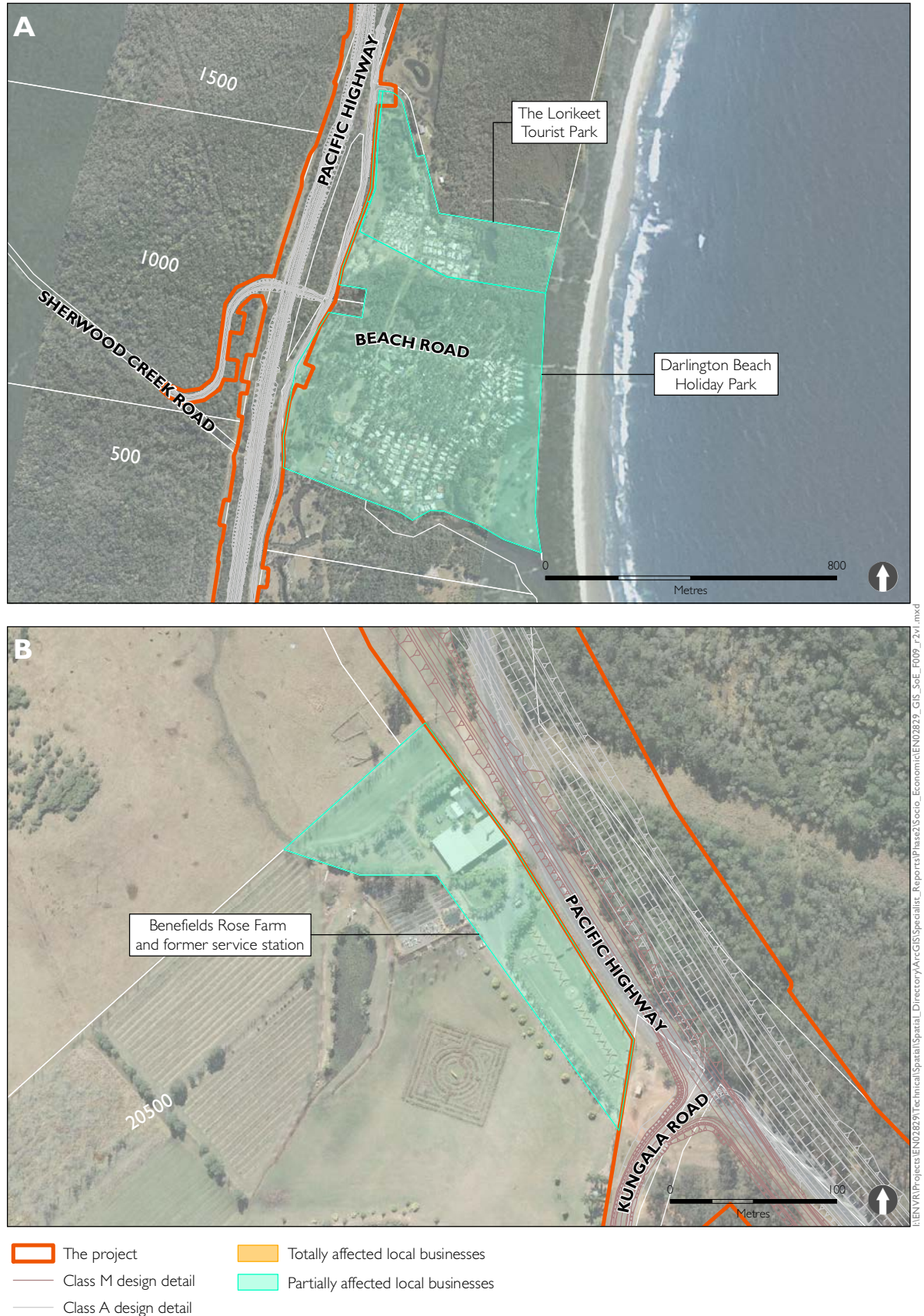
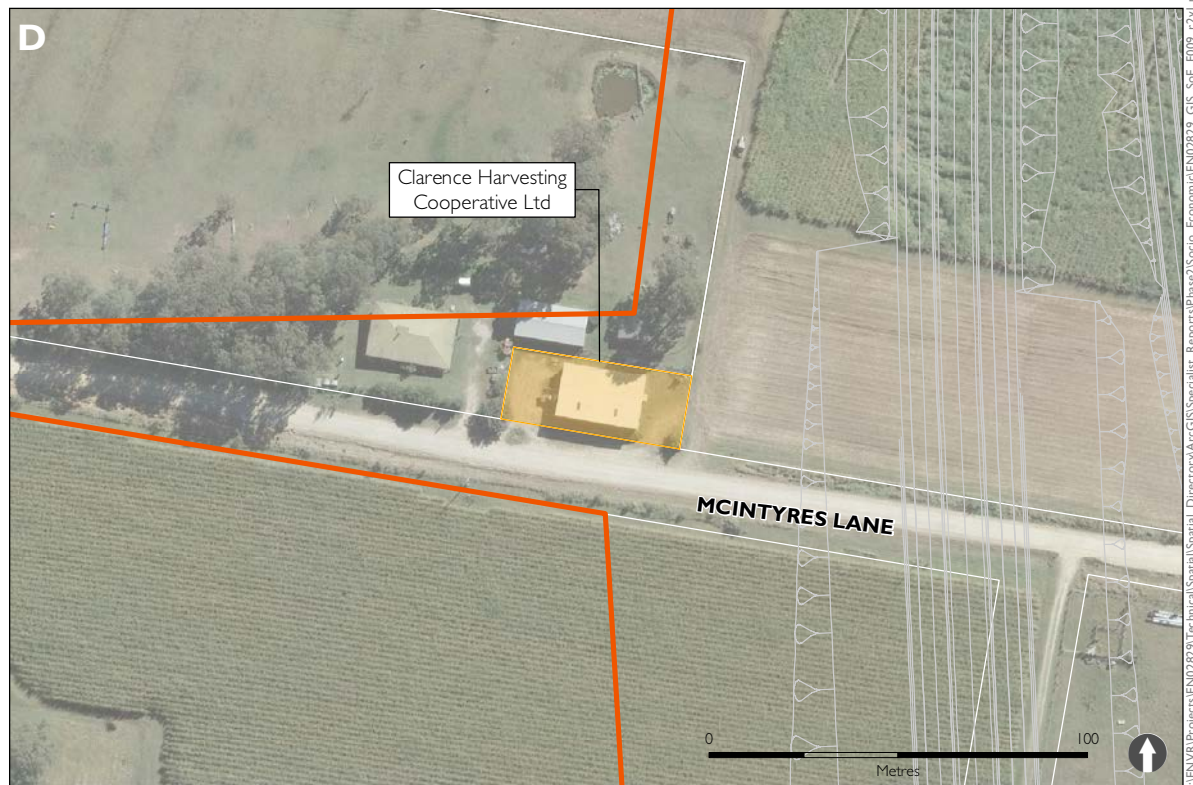
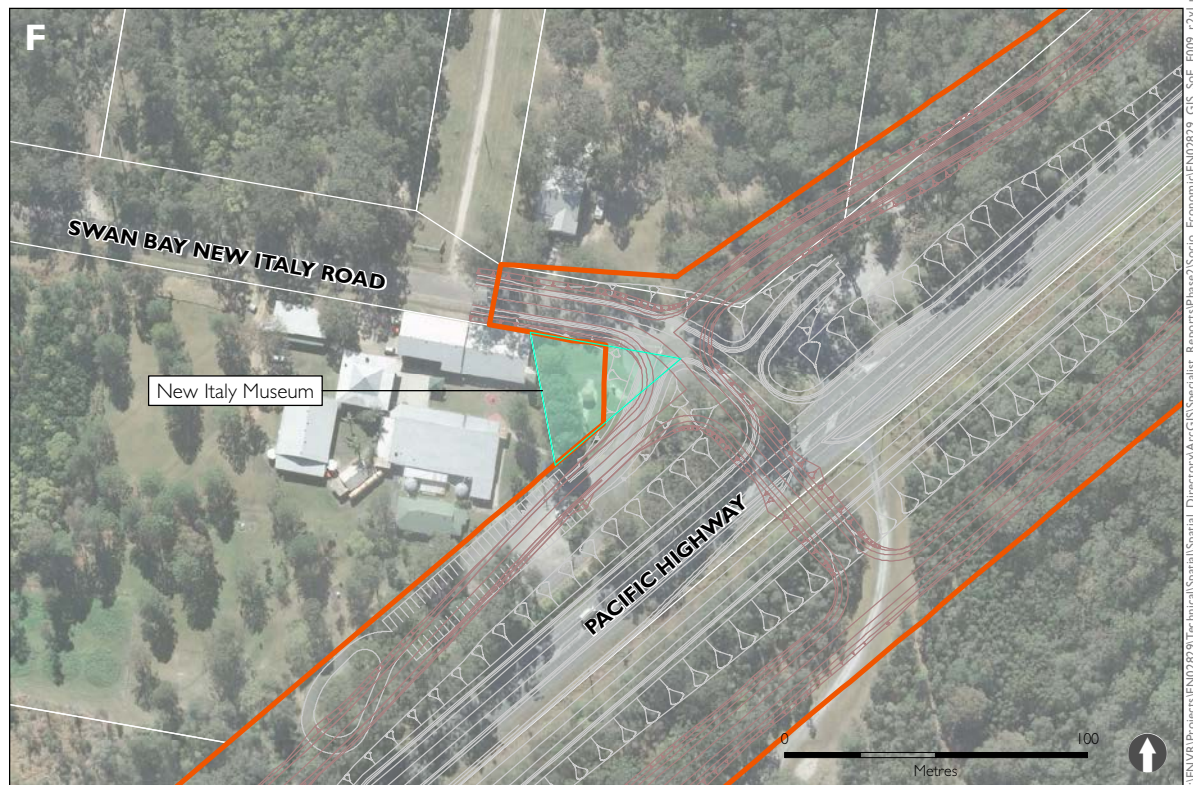
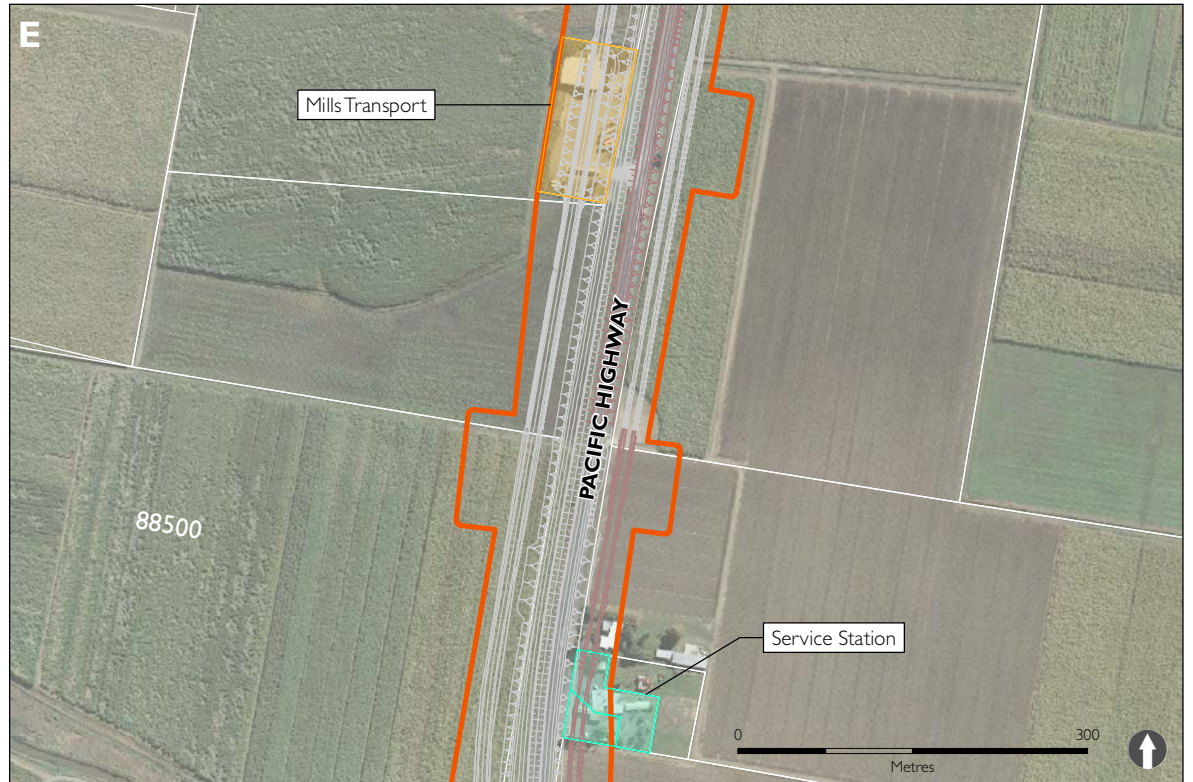


Figure 4-18 Directly affected local businesses



- The project
- Class M design detail
- Class A design detail
- Totally affected local businesses
- Partially affected local businesses

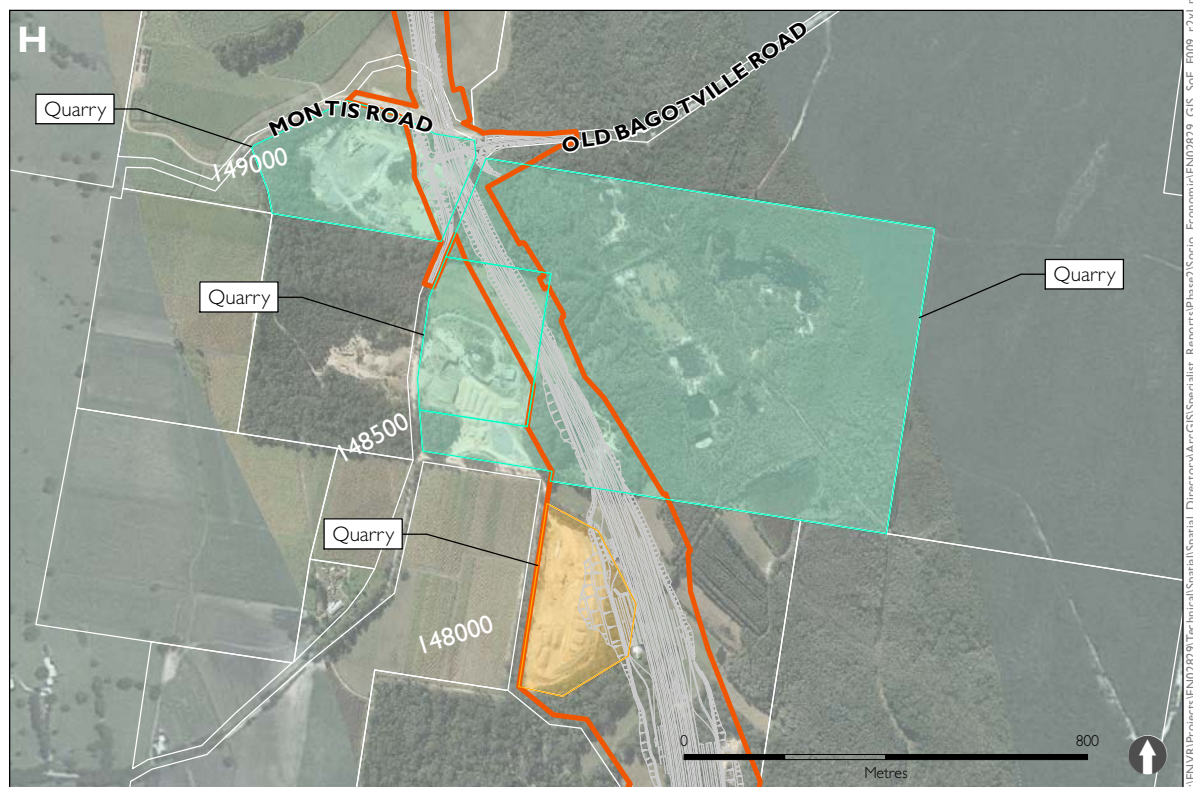
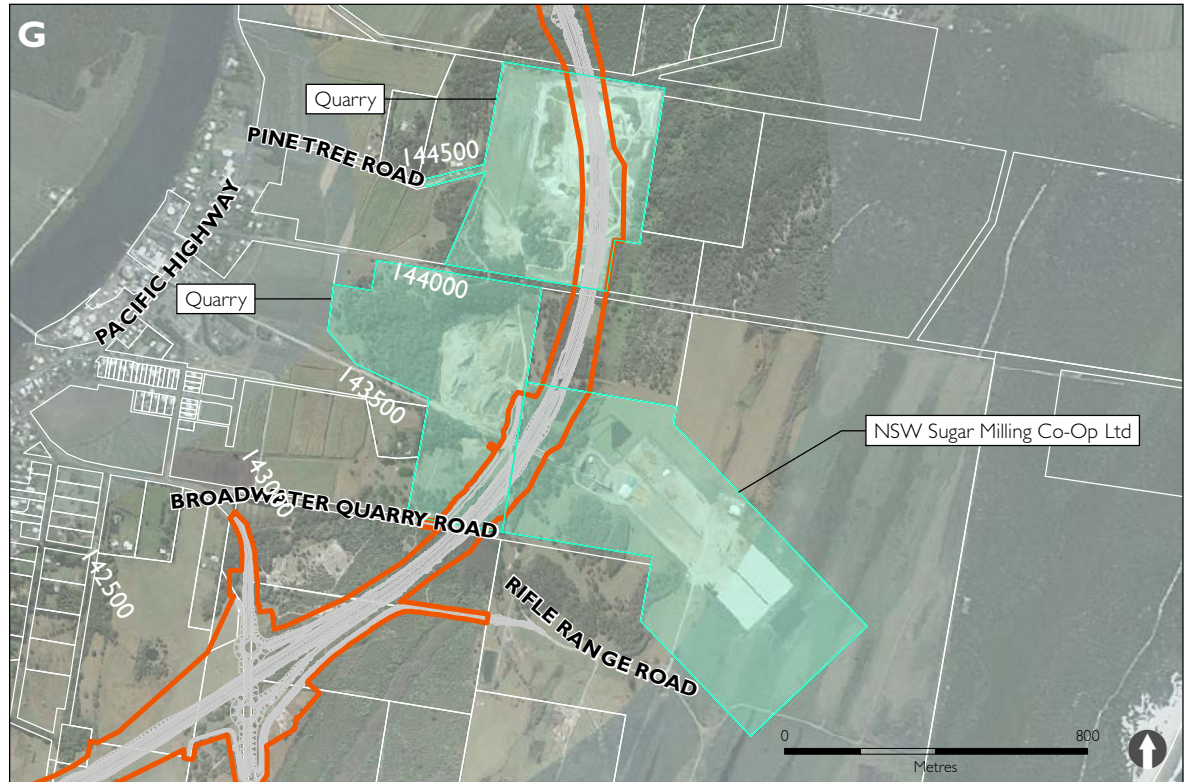
Figure 4-19 Directly affected local businesses



- The project
- Totally affected local businesses
- Class M design detail
- Partially affected local businesses
- Class A design detail

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Figure 4-20 Directly affected local businesses



- The project
- Class M design detail
- Class A design detail
- Totally affected local businesses
- Partially affected local businesses

4.5.8. Operation

During operation, the project is likely to produce a long-term positive impact on industry and commerce in the region. In particular, positive impacts are expected to be driven by the increased capacity of the highway to carry greater volumes of freight and passenger traffic, as well as improvements in connectivity between businesses (goods and services) and people (population). As a result, businesses would most likely respond by changing the type and composition of their business to better meet consumer needs and preferences along the project. Potentially, existing businesses would expand and new businesses would be established to meet the new demand for goods and services.

The overall net effect is expected to be sustained growth in local and regional economic growth.

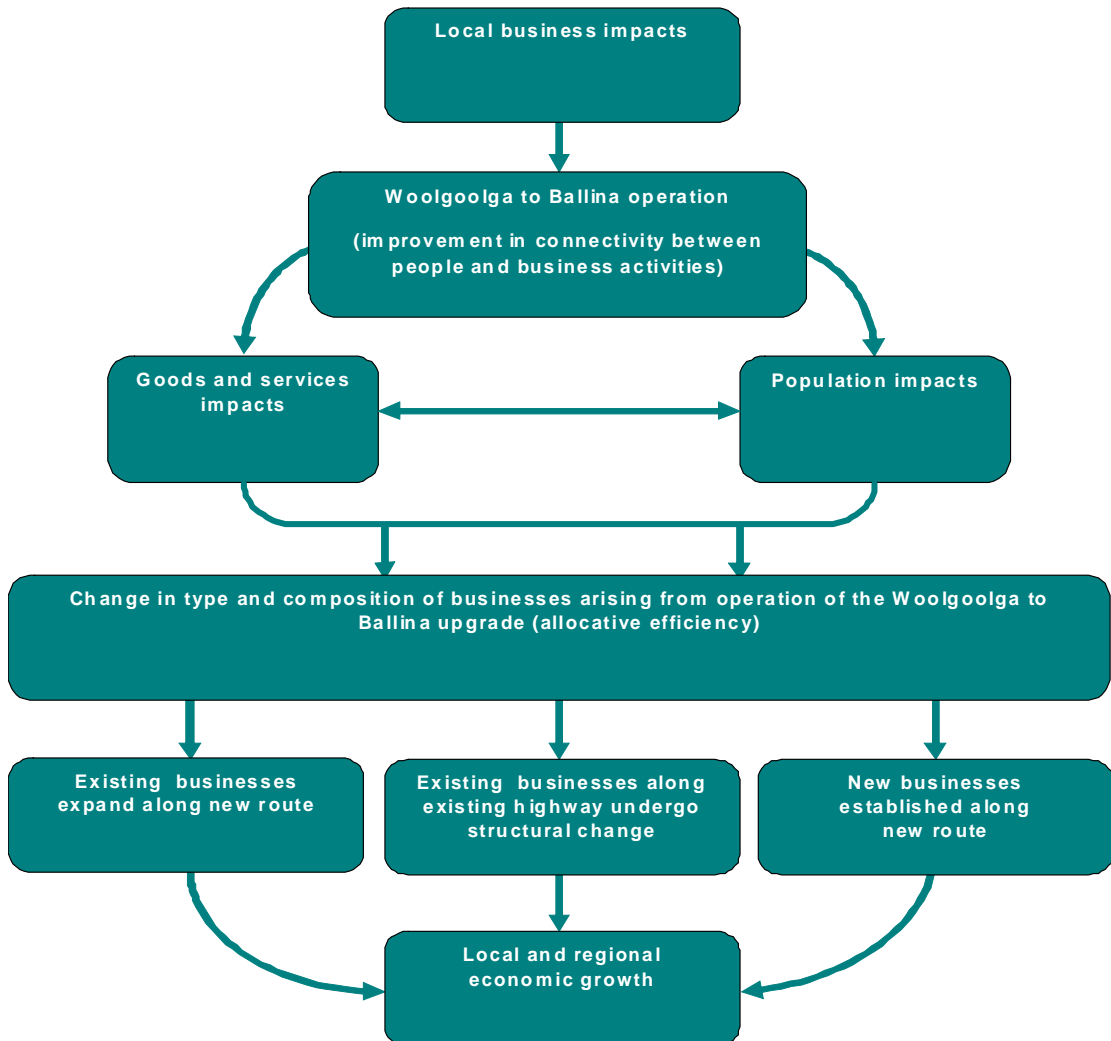


Figure 4-21 Social infrastructure and facilities near the project

The positive impacts of the project on local businesses in the study area may include:

- An increased number and type of businesses across new and existing development areas, reflecting increased demand for goods and services
- Enhanced competition across new and existing development areas, reflecting growth in business activities, business expansion and new start-ups
- Added profitability across new and existing areas, reflecting increased commerce and demand for goods and services
- Improved access to, and larger stock of labour and customers for local and regional businesses, reflecting improved connectivity and movement of people across the region
- Enhanced regional tourism as a result of improved access to many tourist attractions in the region
- Higher property values and rents for local and regional businesses, reflecting growth in the demand for real property as a result of the rising population, income and business activity.

Locally, business in towns and villages not bypassed by the project could be expected to benefit most from improved journey times of passing travellers as their willingness to stop and purchase goods and services may improve. However, the operation of the upgraded highway is expected to generate negative impacts for some business localities and sectors due to the diversion of traffic volumes away from these businesses. In particular:

- Business localities to be bypassed by the realigned highway include Grafton, South Grafton, Ulmarra, Woodburn, Broadwater and Wardell. The loss in passing trade to businesses in these locations may be subdued if there are no other major townships in close proximity to these businesses; there is a strong presence of local clientele; and/or there is a larger population size to support the economic base of the local economy. Bypassed localities that may be regarded as having these attributes include Grafton, South Grafton and Maclean
- Business sectors focussed on the provision of highway related services that would be bypassed are likely to experience a degree of structural change. That is, resources and efforts currently focussed on providing highway related services could be expected to be re-allocated to non-highway related services (eg tourist attractions) to maintain sales and commerce (Otto and Anderson 1995 cited in Parolin 2011). The localities that may experience such structural change include the townships of Ulmarra, Woodburn, Broadwater and Wardell.

Anticipated impacts of the project's operation on local businesses at each locality are discussed below having regard to the six key drivers of accessibility and traffic; visibility; amenity; town size; distance to larger towns; and economic base (ie degree of dependence on highway generated trade).

Corindi Beach, Wells Crossing

A sample count of local businesses in the vicinity of Corindi Beach and Wells Crossing (including businesses between Corindi Beach and South Grafton) identified the following local businesses at each location:

- Corindi Beach:
 - Accommodation, cafes and restaurants (three)
 - Agriculture, forestry and fishing (three)
 - Retail trade (one).
- Wells Crossing (between Corindi Beach and South Grafton):
 - Construction (two)
 - Wholesale Trade (two)
 - Personal and other services (four)
 - Manufacturing (one)
 - Retail trade (eight)
 - Accommodation, cafes and restaurants (seven).

The realignment of the project would reduce direct access to Corindi Beach, potentially increasing travel times for passing interstate trade. This may directly affect businesses such as cafes, eateries and the service station, which are dependent on passing traffic. The accessibility and visibility for businesses at Wells Crossing is not expected to change significantly with the project.

A service station located at Lemon Tree Road, Halfway Creek, would be partially affected due to access restrictions associated with the project. Although the service station would continue to serve southbound traffic under the class A arrangement, direct access from the highway under the class M arrangement would be removed. A development approval is also currently pending for a service station at Kungala Road, Halfway Creek. Access to this site would be restricted under the class A arrangement, with direct access from the highway removed under the class M arrangement. Consequently, the viability of these service stations as a traffic dependent operation would be reduced.

Amenity for local businesses at Corindi Beach and Wells Crossing is expected to be relatively unchanged. However, Corindi Beach would be further from the new alignment, potentially improving the operating amenity for residents and businesses due to reductions in passing traffic and associated traffic noise and vibration.

The size of a community's population provides a basis to accommodate a potential reduction in passing trade. Of the towns and villages investigated, the average population for each township was 435 people, excluding major centres of Grafton (including South Grafton) and Maclean.

The population of Corindi Beach (834 people) was above the study area average (435 people). As such, this locality is considered more able to generate sufficient economic activity to maintain the demand for goods and services.

Wells Crossing had a smaller population (428 people) and could be seen as less able to accommodate a reduction in passing trade. However, as the new alignment does not bypass this locality, the reliance of businesses relating to passing trade is expected to be unchanged. It is expected that the businesses at Wells Crossing, such as the service stations and eateries (Hungry Jacks, McDonalds and motels) located along the existing Pacific Highway would continue to service a similar level of passing traffic.

Proximity of a locality to major townships also influences the impact on local businesses. The proximity of Corindi Beach to the major centre of Coffs Harbour (35 kilometres) suggests that customers from Coffs Harbour would continue to frequent cafes, restaurants and retail outlets. While Wells Crossing is located further from Coffs Harbour (66 kilometres), the upgrade follows the existing alignment in this location and no underlying impact is expected.

The existing economic base of a town also impacts on the ability of businesses to accommodate a potential loss in trade. Based on the business survey undertaken for this assessment, 29 per cent of businesses are considered traffic dependent (ie two service stations located along the existing highway). Non-traffic related businesses, such as the Berry Exchange and Egg Farm would not be directly impacted (43 per cent), as they would continue to service patrons whom require their goods and services. The remaining 28 per cent of traffic related businesses, which comprise of a takeaway/convenience store and caravan park, would service existing residents of Corindi Beach and patrons visiting the vicinity. The number of traffic dependent businesses at Corindi Beach suggests that only a small part of the existing economic base would be directly affected as a result of the new highway.

At Wells Crossing, about 29 per cent of businesses surveyed are traffic dependent, about 50 per cent are traffic related and 21 per cent are non-traffic related. These businesses are likely to experience minimal affects given the project alignment would not detract passing traffic.

Overall, businesses at Corindi Beach are expected to continue servicing the existent residents. However, those businesses reliant on traffic for trade may experience minor reductions in demand. Businesses at Wells Crossing are unlikely to experience any effects resulting from the project's operation.

South Grafton

Businesses that could be potentially impacted by the project at South Grafton include:

- Retail trade (32)
- Manufacturing (one)
- Accommodation, cafes and restaurants (13)
- Finance and insurance (three)
- Health and community services (four)
- Transport and storage (one)
- Personal and other services (10).

South Grafton would be directly bypassed by the realignment of the Pacific Highway between the Glenugie interchange and proposed Tyndale interchange. As such, customer accessibility and through traffic would decline, impacting on traffic-dependent businesses such as service stations (ie Shell and BP) and café related eateries.

Although there are a number of businesses dependent on traffic (30 per cent) at South Grafton, such as the Shell and BP service stations and several hotels that would experience a reduction in passing traffic with the project, the population base of South Grafton is expected to be large enough to maintain trade. That is, the expected decline in passing trade would be partially off-set by the large customer base living in the community (ie 5932 people). Traffic related businesses (56 per cent) such as retail stores and food eateries (cafes and restaurants) and non-traffic related businesses (14 per cent) including finance professions such as banks and financial services are not expected to be affected by the project, as they would continue to provide goods and services to the South Grafton population.

The proposed realignment of the Pacific Highway would improve the operating amenity of businesses adjacent to the existing highway, by reducing traffic and associated noise and vibration, including from heavy vehicles. Structural adjustment of services provided by businesses such as those servicing tourists may arise from the size of the existing township. Those businesses unrelated to traffic such as the finance, health and community industries are expected to be largely unaffected as they continue to provide goods and services to the local community.

Overall, the close proximity of South Grafton to the major town centre of Grafton (2.6 kilometres) and its prevalence as a regional trading centre suggests the potential negative effects from the reduction in highway trade would be minimised and supported by local commerce, community and economic activity.

Grafton

Given the vast number of businesses at Grafton, the business survey included a sample of visibility identifiable businesses. Business identified included:

- Retail trade (29)
- Accommodation, cafes and restaurants (10)
- Finance and insurance (10)
- Property and business services (seven)
- Health and community services (six)
- Cultural and recreational services (two)
- Personal and other services (seven).

During operation, access to Grafton for traffic using the realigned Pacific Highway would be reduced. This has the potential to affect businesses dependent on passing trade such as service stations and food outlets. However, it is envisaged a proportion of passing visitors in the region would continue to stop at Grafton as part of their travels given it is a major regional centre.

Reduced accessibility would stand to benefit Grafton as a whole from reduced vehicle congestion. This would provide improved amenity for the local community and local businesses such as outdoor cafes. Other associated benefits would include an increase in operating amenity of the town from reduced noise, air and vibration. Local businesses within Grafton would continue to be a vibrant source of economic activity within the region.

Of the businesses surveyed, the economic base of the township consists mainly of traffic related businesses (58 per cent), followed by non-traffic related (32 per cent) and traffic dependent (10 per cent). Although there is a number of traffic dependent businesses within the town, such as the multiple Caltex and BP service stations, these businesses are more reliant on local traffic rather than passing traffic. Only a small proportion of businesses within Grafton would be directly affected given the existing location of these businesses are within the town centre rather than along the existing highway route.

Grafton has the largest population of localities reviewed, with 9955 residents. The town centre of Grafton is currently bypassed by the existing Pacific Highway. Combined with a large population to support the commerce and activity of local businesses, it is not expected that a notable impact would occur for businesses in Grafton due to the town's non-traffic related dependence.

Overall, the impact of the project on businesses at Grafton is expected to be confined to traffic-dependent businesses. However, the economic welfare of these businesses is likely to be sustained by demand from the large existent population, as well as the continued use of the existing Pacific Highway as a service road.

Ulmarra

Businesses at Ulmarra include:

- Accommodation, cafes and restaurants (10)
- Retail trade (13)
- Agriculture, forestry and fishing (two)
- Health and community services (one)
- Education (one).

Ulmarra is located about 15 kilometres from the major regional centre of Grafton. During operation, it is expected that local businesses within the township would continue to serve the town's 446 residents. The proximity of the town to Grafton is expected to help minimise impacts on those businesses dependent on passing trade and highway access. That is, it could be expected a proportion of visitors would continue to travel to and from Grafton, and continue to use services at Ulmarra. The reduced number of passing vehicles at Ulmarra would assist businesses in terms of improved amenity. Businesses such as cafes and bed and breakfast outlets would benefit from a more serene environment.

The main type of business in Ulmarra was classified as traffic related (59 per cent). These included accommodation (ie Ulmarra Hotel and Plantation Motel), café eateries, and retail stores such as local newsagencies. Non-traffic related businesses (15 per cent) such as the cattle farms, cane farms, and a tourist park would continue to provide services regardless of the highways operation.

Traffic dependent businesses accounted for approximately 26 per cent of businesses in Ulmarra. These businesses stand to be adversely impacted by the project and include the BP, Caltex and smaller service stations, and caravan parks. It is possible some of these businesses may relocate to new premises and/or establish similar businesses within the region.

On the whole, the majority of businesses at Ulmarra would continue to serve local residents in addition to visitors from the major regional centre of Grafton. However, businesses that are primarily depend on passing traffic for commerce are likely to experience potential losses of trade resultant of the realignment of the highway.

Tucabia

Businesses at Tucabia include:

- Agriculture, forestry and fishing (one)
- Retail trade (one).

Access to Tucabia would not change with the project, with residents and visitors accessing Tucabia via the existing highway. The visibility and amenity of the township is also unlikely to be impacted due to the locality of Tucabia and its comparative location to the realigned highway.

Of the two businesses identified, neither is traffic dependent and is likely to be dependent on local residents (258 people). One business is a local farm that would continue to be operational and unlikely to be affected from the project, while the other is a service station that is also not expected to be adversely affected.

Tyndale

Businesses at Tyndale include:

- Accommodation, cafes and restaurants (one)
- Retail trade (one).

The township of Tyndale would be bypassed by the realigned highway. However, the underlying accessibility to and from this locality is expected to be unchanged, with similar levels of access under the existing and new highway arrangements. The visibility of the locality would also be similar to the existing situation, while the operating amenity for businesses at Tyndale would be unaffected.

While the population of Tyndale (213 people) is small, the locality is relatively close to Grafton (31 kilometres) suggesting existing patrons would continue to use these services. However, an independent service station is expected to be affected by the project as a partial acquisition of non-functional land is required due to the new alignment. The business is expected to continue operations despite this acquisition, and continue to service passing trade. Other traffic dependent business (eg motel/caravan park) are not expected to be affected by the project.

Overall, it is likely that neither of the two businesses at Tyndale would be adversely affected as a result of the project's operation.

Maclean

The following sample businesses were identified within the township of Maclean:

- Agriculture, forestry and fishing (one)
- Wholesale trade (one)
- Retail trade (40)
- Accommodation, cafes and restaurants (21)
- Transport and storage (one)
- Communication services (two)
- Finance and insurance (five)
- Property and business services (11)
- Health and community services (seven)
- Cultural and recreational services (one)
- Personal and other services (seven).

Maclean has a population of about 3246 people, making it one of the larger townships in the study area. The town is current bypassed by the existing highway. Accessibility, visibility and the quality of the operating amenity within the town centre would be unaffected by the project, given the current and proposed alignments are similar.

As a major township, the local population is expected to sustain commerce and trade of local businesses. Of the businesses reviewed a high proportion is traffic related (65 per cent). Retail businesses (eg chemist/pharmacies, local butcher, newsagencies, supermarket), and accommodation, eateries (eg takeaway stores, restaurants, motels/hotels, clothing stores and cafes) would continue to service local customers.

Traffic dependent businesses accounted for a small proportion of businesses (3 per cent), with these businesses including a BP service station and a local service station. In particular, the BP service station located south of Maclean is expected to experience a reduction in passing traffic due a loss in accessibility.

Non traffic-related businesses which comprise the remaining 32 per cent of businesses within Maclean are expected to be unaffected. Businesses such as the sugar cane farm, cane growers, finance and insurance (eg banks), property and business services (ie IT management services) would continue to service customers in Maclean.

Overall, it is expected that the local businesses within Maclean are expected to largely continue to operate on a business-as-usual basis.

Harwood

Businesses in Harwood include:

- Agriculture, forestry and fishing (one)
- Wholesale trade (one)
- Manufacturing (one)
- Retail trade (two)
- Accommodation, cafes and restaurants (two)
- Transport and storage (one).

Access to Harwood would be via an interchange at Harwood and Yamba Road, with accessibility for passing traffic less direct. Consequently, the willingness for passing vehicles to stop at Harwood may decrease. However the degree of visibility and the quality of the operating amenity is unlikely to change with the project.

Businesses in Harwood are likely to depend on passing traffic as the primary source of their business. The survey of local businesses identified 14 per cent of businesses dependent on passing traffic. Businesses such as the Island Restaurant located on the existing highway should remain viable through the continued movement of traffic throughout Harwood. However, the project would directly impact the United service station located north of the Harwood interchange. This business would be directly impacted by the project and would be acquired for the project.

Traffic related businesses comprise about 29 per cent of businesses in Harwood. These businesses, including accommodation and cafes (ie Harwood Hotel, convenient store/café) are likely to continue providing goods and services to the population of Harwood (193 people). The remaining non-traffic related businesses (57 per cent), which include a sugar cane farm, mill and refinery and wholesale trade (ie Rural Buying Services), would continue to operate on a business-as-usual basis.

Overall, it is unlikely that businesses at Harwood would experience adverse effects from the project. Viability and sustainability of these businesses would continue to be maintained.

New Italy

Businesses at New Italy include:

- Retail trade (three)
- Accommodation, cafes and restaurants (two)
- Health and community services (one)

Accessibility to New Italy would now change under the class A arrangement, with access to New Italy provided via the intersection of the Pacific Highway with Swan Bay Road. Similarly, the visibility and operating amenity of local businesses are unlikely to be affected under this arrangement.

However, under the class M arrangement, entry to and from New Italy would be via a service road via from an interchange at either Iluka Road or Woodburn. Businesses at this locality would be bypassed and accessibility for passing traffic would be reduced, potentially reducing trade. The operating amenity of businesses would generally remain unchanged.

No businesses at New Italy are categorised as traffic dependent, although 83 per cent were regarded as traffic related. These businesses included retail trade (ie gallery and gift shop) and cafes and restaurants (ie Osterin Veneta bar/restaurant and New Italy café). These businesses would continue to service visitors of the museum complex, which serves primarily as a tourist destination.

Overall, businesses of New Italy are expected to continue to cater for tourist related traffic, rather than interstate related traffic. The implementation of the class A highway is likely to cause minimal disruptions for visitors. When upgraded to a class M highway, businesses are likely to experience a reduction in passing trade, but would continue to service its predominant tourist customer base.

Woodburn

Businesses in Woodburn include:

- Construction (one)
- Retail trade (nine)
- Accommodation, cafes and restaurants (six)
- Transport and storage (one)
- Communication services (one)
- Finance and insurance (one)
- Health and community services (one)
- Cultural and recreational services (one)
- Personal and other services (five).

Woodburn would be bypassed as a result of the project. This would have the effect of reducing the visibility and accessibility of local businesses in the town.

The project would assist in improving the operating amenity of the township, through reduced noise, vibration and disturbance from heavy haulage vehicles. This would have potential benefits for non-traffic related businesses, as well as traffic dependent businesses. In particular, businesses such as cafes (ie Riverview Café, Parkside Café) and accommodation businesses (ie Rod n Reed Hotel, Woodburn Motel) would benefit from a more serene environment.

Woodburn has a larger population than the average of the townships reviewed (618 people), and is in close proximity to the major regional centre of Ballina (36 kilometres). This suggests that traffic related businesses, consisting of 73 per cent of businesses, would continue to sustain their trade. Specifically, businesses comprising of retail trade outlets (eg pharmacy, bottle shop, butcher, and IGA supermarket), accommodation and cafes are expected to continue servicing local residents of Woodburn, providing everyday goods and services.

Traffic dependent businesses (ie a Caltex service station), which comprise four per cent of businesses, are expected to experience a reduction in interstate trade. However; as the only service station at this locality, it is expected to continue operation, mainly servicing local residents. Non-traffic related businesses (23 per cent) are also expected to continue operations irrespective of the project. These businesses operating in construction (ie McGregory Earthmoving), finance and insurance (ie Bendigo Bank) and cultural and recreational services (ie Amature Bowling Club and Fitness centre) would continue to provide services to local residents independently of the project's operation.

Overall, traffic dependent and traffic related business at Woodburn would experience a reduction in demand due to the project. However, the severity of this impact is expected to be partially offset by services being demanded from the existing populous within the locality.

Broadwater

Businesses within Broadwater include:

- Mining (two)
- Wholesale trade (one)
- Retail trade (four)
- Accommodation, cafes and restaurants (six)
- Transport and storage (one)
- Cultural and recreational services (one)
- Personal and other services (one).

Reduced accessibility and visibility would be expected due to the project, reducing passing traffic to the detriment of traffic dependent businesses. However, it is expected that the operating amenity of businesses, such as restaurants (ie Melbo's Veranda Restaurant) and hotels/motels (ie Commercial Hotel, Motel A and Broadwater Motel) would improve, with potential for increased trade.

Traffic dependent businesses (12 per cent), which only make up a small proportion of business, comprise two service stations (ie Liberty and BP service stations). Both businesses are likely to experience a reduction in trade. The remaining businesses within Broadwater consist of traffic related (56 per cent) and non-traffic related (32 per cent) businesses.

The sugar mill located in Broadwater would continue to provide local residents and supporting industries with an industrial base for commerce and economic activity. However, works would be required to protect the overhead sugar conveyor passing over the project.

Overall, although traffic dependent businesses are expected to be adversely affected, the close proximity of Ballina to Broadwater (25 kilometre) and the existent population of Broadwater (465 people) provides a basis for sustained demand of goods and services.

Wardell

Businesses in Wardell include:

- Wholesale trade (one).
- Accommodation, cafes and restaurants (five).
- Transport and storage (one).
- Education (two).
- Health and community services (one).
- Retail trade (one).

The township of Wardell is directly bypassed as a result of the project, reducing accessibility for customers and visitors. However, only one business was identified as being reliant on passing traffic (ie a BP service station). Other businesses consist mainly of non-traffic related businesses (46 per cent) and traffic related businesses (46 per cent). These businesses are expected to benefit from improved operating amenity, particularly cafes and restaurants.

With a moderately sized population base (622 people), businesses within Wardell would likely continue to service the local community and residents. The closeness of the locality to the major town of Ballina (18 kilometres) may be of advantage to the local businesses of Wardell as local residents at Ballina may become more prone to out-shopping and/or potentially travel down to utilise other services that can lead to commerce within Wardell (ie War Memorial Hall, Post Office and public school).

The economic base of Wardell consists mainly of both traffic related and non-traffic related businesses (46 per cent each) followed by traffic dependent businesses (9 per cent). Although the traffic dependent businesses (ie BP service station) would rely on visitors and passing traffic, it is expected the residents and community of Wardell would have demand for their services due it being the only service station in the township.

Traffic related businesses comprising of the accommodation and eateries (ie Marley House restaurant, Pie shop, Wardell River Hotel and Café/Takeaway) and non-traffic related businesses (ie. Cane Growers and caravan park) would continue to service the population of Wardell irrespective of the new alignment.

Overall, the potential adverse effects resulting from the project is likely to be minimal. Businesses in the locality of Wardell would experience a continuation of commerce and provide sustained services to residents.

4.6. Social infrastructure

The study area includes a wide range of local, district and regional level community services and facilities to service the needs of residents and visitors. Some of these services and facilities would be affected by the construction and operation of the project, either beneficially or adversely, including directly through property acquisition or indirectly through such things as changes in amenity or access.

4.6.1. Construction

During construction, adverse impacts on social infrastructure may occur from increased demand for services and facilities, such as medical and emergency services, and impacts on the amenity of facilities due to increased noise and dust, changes in local access and/or increased construction traffic.

As mentioned in Section 4.2.1, a number of workers would need to be sourced from outside the study area, with some of these workers expected to relocate to the study area during construction. Other workers are also expected to commute on a weekly basis. An influx of new residents and non-resident workers to the study area during construction may increase demand for community services and facilities across the study area, particular health and medical services.

Health and medical services are limited in smaller towns and villages within the study area, with residents required to travel to larger centres such as Coffs Harbour, Grafton, Maclean, Lismore and Ballina (refer Section 3.6). Increased demand for health and medical services during the construction phase may impact on service levels, potentially resulting in longer waiting lists for some services. Some new residents may also have difficulty accessing some services locally, potentially increasing demand on services provided by hospitals if increasing numbers of workers and residents present to hospitals for minor ailments.

The types of activities undertaken during construction are typical of road construction projects undertaken in the study area. Construction safety procedures would be implemented as part of the construction management, to minimise potential safety incidents on the construction work sites. It is expected that the emergency services and hospitals in the study area would have the capacity and capability to respond to most construction incidents and emergencies.

Early and ongoing consultation would be undertaken with hospitals and emergency service providers in the study area in the preparation of emergency response procedures. First aid and safety officers would be available on construction work sites to attend to minor construction incidents to minimise the demand for local health and medical facilities.

During construction, increases in construction traffic and construction works adjacent to the existing highway or other local roads, would impact on access to some community facilities across the study area (ie emergency services and school buses). Potential impacts for school bus access are discussed in Section 4.10.

Access for emergency services would be maintained near construction works to ensure impacts on response times are avoided. Ongoing consultation would be undertaken during construction with emergency service providers about changes to local access and to ensure that impacts on emergency services response are avoided or appropriately managed.

Delays and disruptions for road users may also increase travel times for some residents accessing community services such as schools, sport and recreation and health and medical care. Given many residents across the study area currently travel long distances to access some services and facilities in major centres, an increase in travel times may discourage some residents from accessing these services.

Locally, changes in access, increases in construction traffic, and noise and dust from road works may impact on the use and amenity of community services and facilities closest to the proposed works. These include:

- Halfway Creek rural fire brigade at Lemon Tree Road, Halfway Creek, due to the location of an ancillary site, changes to local access and noise and dust from works associated with the widening of the highway
- Halfway Creek community hall at Kungala Road, Halfway Creek, including changes to local access, increased construction traffic and noise and dust from road works associated with the widening of the highway
- Clarence Coast visitor information centre at Maclean, including changes to local access, increased construction traffic and noise and dust from road works associated with the construction of the interchange at Maclean and the realigned highway
- Harwood Island Public School, including changes to local access, increased construction traffic and noise and dust from road works associated with the construction of the proposed bridge over the Clarence River and widening of the highway
- Harwood sailing club, including disruptions to river access and noise and dust from the construction of the bridge over the Clarence River
- New Italy Museum, south of Woodburn, including changes in car park access, increased construction traffic and noise and dust from road works associated with the widening of the highway.

During consultation for the project, concerns were identified by the Harwood Island Public School about potential impacts on the school's teaching environment due to increased noise from construction activities and about potential impacts on pupil safety due to increased construction traffic near the school. The implementation of appropriate environmental management measures (ie dust suppression, noise attenuation, etc) would help to minimise potential impacts on the amenity of community services and facilities, including the teaching environment of the Harwood Island Public School.

Avoiding haulage tasks near the Harwood Island Public School and other schools during school drop-off and pick-up times would be important for pupil safety. Construction traffic management plans would also be prepared and implemented, which would consider the potential conflicts that may occur. This would help to minimise potential impacts on the school and other community facilities from increased construction traffic and changes in local access. These would need to ensure safe pedestrian and cycle access is maintained to community facilities, as appropriate.

Concerns were also raised by the Harwood Island State School about the presence of large numbers of construction workers and potential impacts of worker behaviour on pupil safety. Ongoing education and consultation with workers around expectations of worker behaviour would be undertaken to ensure workers are aware of community and contractor expectations and to ensure concerns of the school community are appropriately managed. Ongoing consultation and communication with the school staff and wider school community would also be important and would ensure that potential impacts and issues are identified early and appropriately addressed.

Early and ongoing consultation and communication with community services and facilities closest to the construction works would be important to ensure impacts of works are identified and appropriately managed.

4.6.2. Operation

During operation, the project would improve access to regional centres such as Coffs Harbour, Ballina and Lismore. This would improve access and connectivity to regional and district level community services and facilities located in these centres, such as regional employment, recreation and education opportunities and hospitals and regional support services. In addition, the project would maintain or improve access for residents and visitors to state forests and national parks across the region.

The project would provide opportunities to improve access and response patterns for emergency services to communities across the region as well as help to improve response times to incidents on the highway. In addition, the project provides opportunities for the management of traffic in the event of an incident on the highway, helping to reduce delays and disruptions for motorists. However, during consultation for this assessment, issues were raised by emergency services providers about potential restrictions on U-turn movements along the highway due to physical barriers between the northbound and southbound lanes. Ongoing consultation with emergency services providers would be required during the detailed design phase to ensure that potential impacts on emergency vehicle access are appropriately mitigated.

The project would impact, either directly or indirectly, some community facilities located near the Pacific Highway, such as:

- Halfway Creek rural fire brigade at Lemon Tree Road, Halfway Creek
- Halfway Creek community hall at Kungala Road, Halfway Creek
- Clarence Coast visitor information centre at South Grafton and Maclean
- Harwood Island Public School
- New Italy Museum, south of Woodburn.

While these facilities would be able to continue to operate, they may be impacted either directly through partial property acquisition or indirectly through changes in access or amenity.

There are no known social housing properties directly impacted by the project.

Potential impacts on social infrastructure and facilities located near the project from the operation of the highway are summarised in Table 4-6. Impacts on social infrastructure and facilities during construction are described in Section 4.6.1.

Table 4-6 Summary of impacts on social infrastructure in each project section

Section	Location	Summary of impacts
1	Woolgoolga to Halfway Creek	The project would not directly impact on community services and facilities at Corindi Beach or other towns and villages in this section. Community services and facilities at Corindi Beach and other towns and villages in this section generally serve local communities catchments. As such, the realignment of the project away from the existing Pacific Highway is not expected to impact on the use of or access to these facilities for these communities. However, the realignment of the highway may result in longer travel times and changed access patterns for some residents of surrounding areas

Section	Location	Summary of impacts
		who access the services and facilities in these towns.
2	Halfway Creek to Glenugie upgrade	<p>The Halfway Creek rural fire brigade is located at Lemon Tree Road, Halfway Creek. Access to the highway from the rural fire brigade would be maintained via Lemon Tree Road under the class A arrangement. Under the class M arrangement, access from Lemon Tree Road to the highway would be restricted and would be via the interchange at either Range Road or Glenugie.</p> <p>The Halfway Creek hall is located adjacent to the Pacific Highway at Kungala Road, Halfway Creek. The project would require a partial acquisition of that part of the property adjacent to the existing highway, to allow construction of a service road under the class M arrangement. This is not expected to impact on the use of the hall.</p> <p>Under the class A arrangement, access to the highway would be maintained from Kungala Road. Under the class M arrangement, access to the highway would be via the interchange at either Range Road or Glenugie, potentially increasing travel times and distance for some users of these facilities.</p> <p>The project may impact on the amenity of the Halfway Creek hall due to increased road traffic noise, but this is not expected to be significant given the hall's proximity to the existing Pacific Highway.</p>
3	Glenugie upgrade to Tyndale	<p>There is no social infrastructure located near to the project in this section. However, a number of community services and facilities are located adjacent to the existing highway that would be bypassed by the realigned highway. These include facilities such as the Glenugie rural fire brigade, the Clarence Valley visitor information centre at Grafton, McAuley Catholic College at South Grafton, and the Ulmarra Public School and emergency services at Ulmarra.</p> <p>Access to these facilities would be maintained from the existing highway. The realignment of the highway away from facilities such as the schools would help to enhance safety and amenity for students. However, changed access for other facilities such as emergency services may increase travel times and impact on response times for these services to some locations in the region.</p>
4	Tyndale to Maclean	<p>The Clarence Coast visitor information centre is located adjacent to the Pacific Highway at Cameron Street, Maclean. Access would be maintained to the visitor information centre from Cameron Street although access to Cameron Street would be via a new interchange at Maclean, requiring motorists to exit the highway over one kilometre north of the visitor centre or approximately 500 m south of the centre.</p> <p>During operation, the project may also impact on the amenity of the visitor information centre due to increased traffic noise from the highway and the interchange.</p>
5	Maclean to Iluka Road, Mororo	<p>Community facilities located in this section of the highway include the Harwood Island Public School located adjacent to the existing highway, and the Harwood Island community hall located at River Street on the Clarence River.</p> <p>The highway would be realigned east of the existing highway, which would increase the separation distance to the school. Consultation with the school undertaken for the project identified this as a benefit for the school, due to the potential reduction in traffic noise.</p> <p>Access to the school from communities south of the Clarence River would continue to be via the existing highway to the interchange at</p>

Section	Location	Summary of impacts
		<p>Yamba Road. Access to communities north of Harwood would continue to be via the existing highway and a new interchange at Watt's Lane. As such, the project is not expected to significantly impact on access to the school.</p> <p>The proposed bridge over the Clarence River would be located near to the community hall. This may impact the amenity for users of the community hall, due to increased traffic noise and changes to view and visual setting from the hall.</p>
6	Iluka Road to Devils Pulpit upgrade	The project is located adjacent to Bundjalung National Park. Access to the national park would be maintained.
7	Devils Pulpit upgrade to Trustums Hill	<p>The New Italy Museum is located adjacent to the existing Pacific Highway at the intersection with Swan Bay New Italy Road.</p> <p>The project would directly impact a small portion of the property and would require the reconfiguration of the existing car park. This is not expected to impact on the use or function of the museum.</p> <p>Under the class A arrangement, access to the museum would be directly from the highway via Swan Bay New Italy Road. However, under the class M arrangement, access from the highway would be via a local service road connecting to the interchange at Iluka Road or via a local service road connecting to the interchange at Woodburn. This may increase travel times and distances for some users of the New Italy Museum.</p> <p>Access changes at the New Italy Museum would impact access to the 'driver reviver' area located adjacent to the museum as well as direct access to the New Italy Museum itself. This is likely to reduce the willingness for passing travellers to stop at the museum, potentially reducing the number of museum visitors. This has been identified during consultation for this project as a concern for this community.</p> <p>Access to Tabbimoble State Forest and Doubleduke State Forest would be maintained.</p>
8	Trustums Hill to Broadwater National Park	<p>Access to Broadwater National Park would be maintained via the current access at the Woodburn-Evans Head Road and Broadwater-Evans Head Road. Interchanges would be provided to both of these roads from the Pacific Highway.</p> <p>A number of community services and facilities are located adjacent to the existing highway at Woodburn that would be bypassed by the realigned highway. These include facilities such as the Woodburn visitor information centre, Woodburn school and emergency services.</p> <p>Access to these facilities would be maintained to the existing highway. The realignment of the highway away from facilities such as the school would help to enhance safety and amenity for students. However, changed access for other facilities such as emergency services may impact on response times for these services to some locations in the region.</p>
9	Broadwater National Park to Richmond River	Access to Broadwater National Park would be maintained via the current access at the Woodburn-Evans Head Road and Broadwater-Evans Head Road. Interchanges would be provided to both of these roads from the Pacific Highway.
10	Richmond River to Coolgardie Road	The bypass of Broadwater would improve amenity and access for community facilities within the town, including the Broadwater Public School, which is currently located adjacent to the Pacific

Section	Location	Summary of impacts
		Highway. This would also improve safety for school students.
11	Coolgardie Road to Ballina Bypass	There is no social infrastructure located near to the project in this section.

4.7. Community values

As identified in Section 3.7, communities in the region place strong emphasis on:

- The quality of the natural environment and landscapes and protection of the environment from environment degradation, global warming and natural disasters
- The region’s rural character and built and natural heritage, with these identified as key contributors to lifestyle and local amenity
- Rural industries such as agriculture, forestry, and fishing as well as tourism
- Good access to regional centres within and adjoining the project
- Safe, healthy and vibrant communities.

4.7.1. Construction

During construction, impacts on community values may be experienced due to:

- Possible disturbance to the natural environment and landscape values, particularly where works are undertaken near rivers or other waterways or near areas of significant vegetation
- Noise and dust from construction activities, for residents near to construction compounds and surface works, impacting the area’s rural character and amenity
- Visual impacts of construction works and vegetation clearing impacting on visual amenity
- Temporary changes to local access and connectivity, resulting in disruptions and delays for motorists and other road users.

Community concerns around these issues may increase when considered cumulatively with impacts of other projects under construction or planned to be constructed in the study area. In particular, community concerns may arise from the extended duration of these effects, such as traffic disruptions or changes to rural character and amenity, or from the increased disturbance to the natural environment and landscape values of multiple projects.

The implementation of environmental management measures would assist in minimising potential impacts on the area’s natural environment. In particular, temporary construction basins would be established during construction to capture stormwater run-off from earthworks and prevent this entering rivers and waterways. The amount of vegetation clearing for temporary construction activities would also be minimised to avoid or reduce impacts on the community’s environmental values.

The majority of construction activities would occur during standard hours. However, some construction activities in some locations may need to be undertaken during extended hours to minimise impacts on traffic flows. Depending on proximity to residential uses, night-time construction activities may impact on the night-time amenity or sleeping patterns for some residents closest to the construction activities. This is particularly important given the relatively low background noise levels that currently exist in many parts of the study area.

The implementation of noise management measures would help to reduce potential impacts on amenity values and local character for communities closest to the proposed construction works. This is particularly important when night-time construction activities are required to be undertaken close to residential uses.

Further discussion about potential impacts of construction on local amenity is provided in Section 4.8, while impacts on local access and connectivity are described in Section 4.10.

4.7.2. Operation

Potential impacts of the project's operation on the area's natural environment and landscapes may be a concern for some community members. This includes potential impacts on rivers due to new bridge crossings and on national parks and state forests due to the widening or realignment of the highway. Concerns were raised in consultation for the project about potential impacts on fauna species, including the coastal emu, through loss or fragmentation of habitat. Where possible, areas of significant vegetation have been avoided and direct impacts on national parks and state forests have been minimised in response to community concerns. Further information on potential impacts of the project on flora and fauna is in the flora and fauna working paper.

The potential for runoff from the highway to impact wetlands, rivers and water supplies through changes in water quality was also identified as a concern for some community members during consultation for the project. Permanent stormwater detention basins would be established along the highway corridor to capture and treat stormwater runoff prior to it being released into the environment. This would reduce the risks to water quality associated with project runoff.

The realignment of the highway away from towns, villages and localities adjacent to the Clarence or Richmond rivers would reduce the volume of traffic within these locations. This would improve connectivity to these rivers for recreation and enjoyment and strengthen the community's environmental and recreational values associated with these features.

The project has the potential to impact both beneficially and adversely on community values related to rural character and heritage. The project has the potential to detract from the existing rural character in those locations where the highway is realigned away from the existing highway. In particular, realignment of the highway between the interchange at Glenugie and Tyndale would result in the highway moving closer to communities that are currently unaffected by the highway or other major roads, such as Pillar Valley, Tucabia and Coldstream. The bypass of Woodburn, Broadwater and Wardell would also move the highway closer to some communities and individual properties currently unaffected by the highway. The realignment of the highway closer to these communities would impact the rural character of these areas through increased traffic noise, changes in the visual environment from project infrastructure and increased lighting at interchanges and along the highway.

Some residents are likely to be more sensitive about potential impacts on rural character given that some communities would not have direct access to the highway, but would experience impacts from the project such as increased noise and visual impacts.

In recent years, traditional agricultural uses in the region have been affected by a range of socio-economic trends such as changes in farm practices and changes in land uses to more urban development. This has resulted in loss of agricultural land in some locations and has impacted the rural character of some areas. The further loss of agricultural land, particularly good quality agricultural land, may be of concern for some community members and would be seen as further diminishing the area's rural values, opportunities and character.

Conversely, the project would improve the character of those towns and localities proposed to be bypassed by the highway. In particular, this includes the towns of Corindi, South Grafton, Ulmarra, Woodburn, Broadwater and Wardell. The character of these areas is currently compromised by high traffic volumes and heavy vehicles associated with the existing highway. The decrease in through traffic in these areas would provide opportunities for the revitalisation of some of these towns as well as opportunities to enhance the village lifestyle and community cohesion within these towns.

Further discussion on potential benefits and impacts of the project on local amenity is provided in Section 4.8. Potential benefits and impacts of the project on community values associated with access and connectivity are discussed in Section 4.10.

4.8. Local amenity

The amenity of the study area is generally characterised by the area's rural character and small villages, towns and centres. The amenity of larger towns and centres such as Coffs Harbour, Woolgoolga, Grafton, and Ballina, is generally characterised by the more urban nature of these localities.

The amenity of towns and villages along the existing highway is currently impacted by traffic, including heavy vehicles, which results in impacts on noise, air quality, visual amenity, and pedestrian safety. The following provides an overview of potential impacts of the project's construction and operation on the amenity of communities near the project.

4.8.1. Construction

During construction, impacts on local amenity could occur due to:

- Construction noise and dust, for residents and communities near to surface works for the new road alignment, highway widening and interchanges, construction compounds and cut and fill sites
- Changes to local character for those areas near to construction compounds
- Noise and dust associated with haulage vehicles, including haulage of fill material.

About 91 ancillary facility sites have been proposed for construction related activities such as temporary compounds, batching plants, workshops, storage areas, vehicle parking and stockpiles. These sites have been located away from dwellings and other sensitive uses, where possible. This would help to reduce the potential impacts of these sites on residential

amenity. However, there are a number of locations where ancillary sites are located near dwellings and are likely to reduce residential amenity during the construction period.

These locations include:

- Kangaroo Trail Road and Post Office Lane at Corindi Beach
- Parker Road at Wells Crossing
- Six Mile Lane at Glenugie
- Wooli Road at Pillar Valley
- Proposed interchanges at Tyndale and Maclean
- East of the Pacific Highway at Harwood
- Trustums Hill Road at Trustums Hill
- Woodburn Evans Head Road, east of Woodburn
- Near the proposed interchange at Broadwater and south of the Richmond River at Broadwater
- Wardell Road, south of Meerschaum Vale
- South of the proposed interchange at Wardell, adjacent to the realigned highway.

Residents in these locations may experience impacts on residential amenity due to increase noise, dust and construction traffic.

Potential impacts would be experienced for communities closest to surface construction works. In particular, impacts on the amenity of rural communities are likely where the highway is realigned from the existing highway, such as in the case of Pillar Valley, Tucabia and Coldstream, as well as near Woodburn, Broadwater and Wardell. The construction of new interchanges, including at Tyndale, Maclean, Woodburn and Broadwater, would reduce the amenity of nearby properties.

While the majority of construction activities would occur during day-time hours, some activities may need to be undertaken at night-time to minimise impacts on traffic flows. In particular, this is likely to be required where works occur adjacent to the existing highway. As outlined in Section 4.7.1, depending on the proximity of night works to residential uses, these works may adversely affect the night-time amenity or sleeping patterns of some residents closest to the construction activities.

Potential impacts on amenity may also be experienced for properties near construction haulage roads, due to increased noise and dust from construction traffic, including heavy vehicles.

Community concerns around impacts on amenity from construction activities may be exacerbated when considered cumulatively with impacts of other projects under construction or planned to be constructed in the study area. In particular, community concerns may arise from the extended duration of these effects over a number of years due to the subsequent construction of multiple projects.

The implementation of environmental management measures at worksites and areas of surface works would help to manage potential impacts of noise and dust for nearby properties and communities. Where possible, limiting construction works to daytime hours would also help to minimise impacts on residential amenity. Ongoing consultation and communication with local communities about the timing, duration and likely impacts of construction works would be important in managing potential impacts on local amenity. This will be particularly important for those communities who may have previously experienced impacts on amenity from construction of other projects.

4.8.2. Operation

The project entails the realignment of the highway in a number of locations to bypass towns or villages. This would result in the highway moving further away from local communities, individual houses, businesses or community facilities. In particular, the project would result in the bypass of a number of towns and villages along the Pacific Highway, including Corindi, South Grafton, Ulmarra, Tyndale, Woodburn, Broadwater and Wardell. As such, the volume of future traffic through these towns, particularly Corindi, Woodburn, Broadwater and Wardell, would be considerably reduced (refer traffic and transport working paper). This would help to improve local amenity, through reduced traffic noise, particularly at night-time, and improved local air quality. The bypasses would also help to enhance pedestrian amenity and safety within the town centres, making it easier and more attractive for people to walk and gather.

Adverse impacts on local amenity may result from widening or realigning the highway, moving it closer to houses, businesses or community facilities and acquiring parts of state forests and national parks. This may impact the use, enjoyment, character and environmental and visual amenity of these areas for some people through increased traffic noise and changes in visual amenity. This is particularly relevant for those areas that are currently unaffected by the highway or other major roads such as communities at Pillar Valley, Tucabia and Coldstream. Potential impacts on night-time amenity may also occur for properties closest to the highway and major interchanges due to increased road lighting.

Impacts on amenity, particularly night-time amenity, may occur for properties located near to interchanges and rest areas. This includes impacts of traffic noise associated with vehicles accelerating or decelerating to enter or exit the highway as well as impacts from roadway lighting. Changes to local road movements, due to changes in highway access may also impact on local amenity.

Table 4-7 summarises potential changes to local amenity associated with project operation in each project section.

Table 4-7 Summary of impacts on local amenity for each project section

Section	Location	Summary of impacts
1	Woolgoolga to Halfway Creek – 1a: Woolgoolga to Range Road	<p>Realigning the highway between Eggins Close south of Corindi Beach and Dirty Creek is likely to result in improvements to local amenity at communities and properties located adjacent to the existing highway, including at Corindi and Corindi Beach.</p> <p>Potential changes to amenity may be experienced by residents located west of the existing highway, due to movement of the highway closer to houses. While overall this impact is expected to be limited given the sparse settlement pattern, there are some existing houses that would be located within approximately 100 to 200 metres from the new highway.</p>

Section	Location	Summary of impacts
		A small number of houses are located near the proposed interchange at Range Road. Existing vegetation would provide a buffer between the interchange and the nearest houses, which would help to minimise potential impacts on night-time amenity in this location from lighting.
	Woolgoolga to Halfway Creek – 1b Range Road to Halfway Creek	North of the proposed interchange at Range Road, the proposed highway generally follows the existing highway alignment, with widening west of the existing highway. This has resulted in a number of existing houses being located closer to the proposed highway. This may impact on local amenity for residents of these houses, although impacts are likely to be minimal given their current proximity to the highway.
2	Halfway Creek to Glenugie upgrade	<p>This section generally involves widening the existing highway, with a deviation to the east from the existing alignment within the Newfoundland State Forest to Franklin Road.</p> <p>The section of the highway is sparsely settled. Between Lemon Tree Road and Kungala Road the majority of houses are located east of the existing highway, while between Kungala Road and Parker Road, a number of houses are located west of the existing highway. Changes to the amenity at these houses from the operation of the project are expected to be minimal.</p> <p>The Halfway Creek hall is located at the corner of the Pacific Highway and Kungala Road. Widening of the highway is not expected to impact on the use of this facility or have a significant impact on amenity of the hall given its current proximity to the existing highway.</p>
3	Glenugie upgrade to Tyndale	<p>This section involves a new highway alignment east of the existing highway between the Glenugie upgrade and Tyndale. This is a 35 kilometre stretch of off line highway, bypassing Grafton and Ulmarra. It would introduce a major road corridor within the Clarence Valley local government area across land not previously developed for this type of infrastructure.</p> <p>The new highway alignment would improve the amenity of communities adjacent to the existing highway, including South Grafton, Ulmarra and Tyndale, through reduced traffic noise and improvements in local air quality. A reduction in traffic volumes, particularly heavy vehicles, would also help to improve pedestrian amenity and safety within these towns and villages.</p> <p>However, within this section, the highway would be moved closer to communities and individual houses currently unaffected by the highway or other major roads, including at Pillar Valley, Tucabia and Coldstream. This would detract from the existing rural amenity and character of this area, due to increased traffic noise, changes in the visual amenity and increased lighting at overpasses and major interchanges.</p> <p>A number of houses are located close to the proposed interchange at Tyndale. Impacts on the night-time amenity may occur at these houses due to an increase in lighting of the interchange as well as noise from vehicles entering or exiting the highway.</p> <p>The realignment of the highway would result in some properties north of the Tyndale interchange being impacted by the realigned highway at the rear of their property and the existing highway at the front of their property. This is likely to exacerbate the amenity impacts for these properties.</p>

Section	Location	Summary of impacts
4	Tyndale to Maclean	<p>This section involves realigning the highway east of the existing highway alignment.</p> <p>The new highway alignment would improve environmental and visual amenity for residents adjacent to the existing highway through decreased noise, improved air quality and improvements in visual amenity.</p> <p>However, the realigned highway would be located closer to some dwellings that are currently removed from the highway or other major roads. This includes a number of rural residential properties near Gulmarrad.</p>
5	Maclean to Iluka Road, Mororo	<p>This section involves widening the highway, generally following the existing highway alignment, including through the village of Harwood. This section includes a new bridge over the Clarence River at Harwood. The interchange at Yamba Road would be upgraded as part of the class M stage.</p> <p>Widening of the highway through Harwood would increase the physical separation between the western and eastern parts of the village and bring the road closer to sensitive receivers located in the eastern part of Harwood village.</p> <p>Widening of the highway to the east would increase the separation distance between the roadway and the Harwood Island Public School, which may provide some amenity benefit for the school. Potential impacts of the project's construction and operation for the school are discussed in Section 4.6.</p> <p>The bridge over the Clarence River at Harwood would be approximately 33 metres high, with the road level about 12 metres below the top of the towers on the existing bridge. This is likely to impact visual amenity from properties in Harwood and the surrounding area, particularly those located in the eastern part of Harwood, adjacent to the river.</p> <p>Impacts on amenity may also be experienced at houses near to the highway in other parts of this section, due to the widening of the highway. This includes houses south of the Yamba Road interchange and south of the interchange at Iluka Road. However, the amenity of these properties is currently affected by the highway and any changes to existing amenity are expected to be minimal.</p> <p>Impacts on amenity may be experienced at houses near to the proposed interchanges at Watts Lane and Iluka Road, including from increased lighting and noise from vehicles accelerating and decelerating.</p>
6	Iluka Road to Devils Pulpit upgrade	<p>This section generally involves widening of the existing highway. This area is primarily characterised by state forest or national park and is sparsely settled. However, a small number of houses on rural properties are located in the southern part of this section, including at Mororo and near the intersection with Jackybulbin Road.</p> <p>Impacts on amenity may be experienced by residents of individual properties where the existing highway is proposed to be widened. However, the amenity of these properties is currently affected by the highway and any changes to existing amenity are expected to be minimal.</p>
7	Devils Pulpit upgrade to Trustums Hill	<p>This section generally involves widening the highway, generally to the west of the existing highway.</p> <p>The area is primarily characterised by state forest or national park</p>

Section	Location	Summary of impacts
		<p>and is sparsely settled. Some rural properties are located towards the northern part of this section, north of the Double Duke State Forest and Tabbimoble Swamp Nature Reserve.</p> <p>The New Italy Museum is located adjacent to the western side of the highway in this section.</p> <p>Impacts on amenity may be experienced by residents and communities where the highway is proposed to be widened. However, the amenity of these properties is currently affected by the highway and any changes to existing amenity are expected to be minimal.</p> <p>Widening of the highway would directly impact on a small portion of land currently accommodating the New Italy Museum. Potential impacts on the New Italy Museum are discussed in Section 4.6.</p>
8	Trustums Hill to Broadwater National Park	<p>This section involves realigning the highway east of Woodburn. Realigning the highway to bypass Woodburn would help to improve the amenity of the town by reducing traffic noise and improving local air quality. A reduction in traffic volumes, particularly heavy vehicles, would also help to improve pedestrian amenity and safety within the town.</p> <p>However, realigning the highway in this section would result in the highway moving closer to houses adjacent to the Woodburn–Evans Head Road at Doonbah that are currently unaffected by the existing highway. This may impact on amenity for local residents due to increased traffic noise from the highway, particularly at night-time when existing background levels are lower, as well as from changes in the visual amenity.</p> <p>The location of the interchange at Woodburn is removed from residential uses, which would help to minimise potential impacts on amenity from the interchange.</p>
9	Broadwater National Park to Richmond River	<p>This section involves widening the existing highway through the Broadwater National Park and then realigning the highway east of Broadway. A new interchange is also proposed to connect to the Broadwater-Evans Head Road.</p> <p>Realigning the highway to bypass Broadwater would help to improve the amenity of the town by reducing traffic noise and improving local air quality. Reduced traffic volumes, particularly heavy vehicles, would help to improve pedestrian amenity and safety within the town.</p> <p>However, the realignment of the highway would result in some houses on rural properties located east of Broadwater being located closer to the highway. These properties are currently unaffected by the highway. This may impact on amenity for residents of these properties due to increased traffic noise, particularly at night-time when existing background noise levels are lower, as well as from changes to visual amenity and the rural character of the area.</p> <p>A number of houses are located near to the proposed interchange at Broadwater. Impacts on amenity may be experienced at these houses due to increased lighting and traffic noise, including vehicles accelerating and decelerating to enter and exit the highway.</p>
10	Richmond River to Coolgardie Road	<p>This section extends from the southern side of the Richmond River and involves realigning the highway west of the Richmond River and the town of Wardell. A new interchange is also proposed at Coolgardie Road, north of the Wardell township. A new bridge</p>

Section	Location	Summary of impacts
		<p>would be required across the Richmond River.</p> <p>Realigning the highway to bypass Wardell would help to improve the amenity of the town by reducing traffic noise and improving local air quality. A reduction in traffic volumes, particularly heavy vehicles, would also help to improve pedestrian amenity and safety within the town.</p> <p>The realignment of the highway would result in the highway being located closer to houses on rural properties at Wardell Road, Buckombil Mountain Road and Bagotville Road at Meerschaum Vale as well as houses at Coolgardie. These properties are currently unaffected by the highway. Realigning the highway may impact on amenity for these residents due to increased traffic noise from the highway, particularly at night-time when existing background levels are lower, and due to changes in the visual amenity.</p> <p>A number of houses are located immediately east of the existing highway adjacent to the proposed interchange at Wardell (Coolgardie Road), while a number of houses are located west of the highway near to the interchange. Impacts on amenity may be experienced at these houses due to increased lighting and traffic noise, including vehicles accelerating and decelerating to enter and exit the highway.</p> <p>The bridge over the Richmond River at Broadwater would be about 19.5 metres high. This may impact on the visual amenity from nearby properties, particularly those adjacent to the river near to the existing bridge.</p>
11	Coolgardie Road to Ballina Bypass	<p>This section generally involves widening the existing highway. The area is primarily characterised by rural properties, with a small number of houses scattered along the alignment.</p> <p>Impacts on amenity may be experienced by residents of these properties where the existing highway is proposed to be widened. However, the amenity of these properties is currently affected by the highway and any changes to existing amenity are expected to be minimal.</p>

4.9. Tourism and recreation access and uses

As identified in Section 3.3.5, tourism is an important industry in the region, with the study area containing a wide range of tourist attractions, including natural areas such as national parks, the coast and rivers, towns and villages, and museums and galleries. The national parks and rivers also have important recreational values for local residents and visitors. The study area also contains a wide range of recreational uses such as sporting fields.

The construction and operation of the project would have a number of impacts, both beneficial and adverse, on tourism and recreational uses in the study area.

4.9.1. Construction

During construction, potential impacts on tourism and recreation uses would generally result from increased demand for short-term accommodation and recreation uses from construction

workers, changes in local access and traffic conditions and changes in local amenity. As outlined in Section 4.2, the project is expected to directly generate employment for about 3600 people, with a number of workers likely to be sourced from outside of the study area who would commute on a weekly basis. It is expected that a number of these workers would seek short-term accommodation such as motels, cabins, caravans and other 'guest' accommodation. This is expected to increase demand for temporary accommodation, particularly in towns and communities close to construction sites.

In 2010/ 2011, the average room occupancy rates for accommodation providers in the Northern Rivers region of NSW, was 52 per cent⁴ (Tourism Research Australia, 2011). This would suggest that there would be some capacity in existing tourist accommodation across the study area to house the construction workforce. However, it is expected that this occupancy rate would vary across the year, with higher occupancy during peak holiday periods such as Christmas, Easter, long-weekends, school holidays, etc.

The use of available, under-utilised tourist accommodation for the construction workforce would provide economic benefits for accommodation owners by providing a base load of demand. However, the use of tourist accommodation by construction workers may impact on the availability of short-term accommodation, particularly during periods of peak tourist demand. While it is expected that some of these peak demand periods would coincide with periods of less construction activity (ie Christmas and Easter), demand for tourist accommodation would need to be managed to avoid longer-term impacts on tourism accommodation and tourism generally in communities near to the project. Early and ongoing consultation and communication should also be undertaken with local accommodation providers and tourism industry representatives to ensure that demands on short-term accommodation are appropriately managed, particularly during peak tourist times.

An influx of new residents and non-resident workers to the study area during construction would also increase demand for recreational uses. Given the wide range of recreation facilities available in the region, this is not expected to adversely impact these facilities or limit use of these facilities for existing residents.

During construction, impacts may also be experienced for tourism and recreation uses closest to the works due to:

- Changes in local access and traffic conditions, resulting in delays and disruptions for travellers and changed access to facilities
- Increased noise and dust from road works impacting on the amenity of accommodation uses, tourist attractions and recreation uses.
- Construction of bridges across the Clarence and Richmond rivers, potentially disrupting river access and increasing noise and dust for recreational users such as recreational fishers and boat users.

⁴ Includes hotels, motels and serviced apartments with 15 or more rooms

The implementation of construction traffic management plans would help to minimise potential traffic and safety impacts on motorists and other road users. This is particularly important given the high number of tourists in the area who may be unfamiliar with local traffic conditions. The implementation of appropriate environmental management measures (including dust suppression and noise attenuation) would also help to manage potential impacts on the amenity of tourism and recreation uses.

Access to the Clarence and Richmond rivers near construction activities would also be maintained. Boat ramps are currently located upstream of the existing bridge over the Clarence River at Harwood. Access to these boat ramps would generally be maintained during construction. Should access be temporarily disrupted, suitable alternate access would be identified.

Ongoing consultation and communication with operators of tourism businesses and recreation uses potentially impacted by construction activities and changes in traffic conditions would be important in managing adverse impacts for visitors.

4.9.2. Operation

During operation, the project would support regional tourism through improved access to regional tourist attractions and destinations, including major centres such as Coffs Harbour and Ballina, coastal holiday communities such as Evans Head, Yamba and Iluka and towns such as Maclean.

The project also supports enhanced tourism opportunities in those towns bypassed by the project, such as Ulmarra, Woodburn, Broadwater and Wardell. In particular, a reduction in traffic, including heavy vehicles, would improve local amenity within these towns and provide enhanced pedestrian environments, making these towns more attractive for travellers to stop. This would provide opportunities for these towns to become destinations, rather than a 'stop over' for through traffic.

The realignment of the highway away from towns, villages and localities adjacent to the Clarence or Richmond rivers would also reduce the volume of traffic within these locations. This would improve connectivity to these rivers for recreation and enjoyment. It could strengthen the community's environmental and recreational values associated with these features.

The project would also support improved access to regional level recreation facilities through improved access to major regional centres such as Coffs Harbour, Ballina and Lismore. The realignment of the highway away from the Clarence and Richmond rivers in some locations would improve connectivity to these rivers for recreation and strengthen the recreational values of these features.

A small number of tourism or recreation uses would be directly impacted by partial property acquisition for the project, while others would be impacted by changes in property access or local amenity. It is anticipated, however, that these uses could continue to operate. Table 4-8 provides an overview of potential impacts from the operation of the project on tourism and recreation uses near the project.

Table 4-8 Summary of impacts on tourism and recreation uses in each project section

Section	Location	Summary of impacts
1	Woolgoolga to Halfway Creek	<p>The project would require the acquisition of a minor part of the Darlington Beach Holiday Park, although this would not affect the operation of the park.</p> <p>Current access arrangements from the highway via Eggins Close would be maintained to the Lorikeet Tourist Park and Darlington Beach Holiday Park. However, Eggins Close would be extended at the northern end to connect to the existing Pacific Highway, providing improved access to Corindi Beach and other towns and villages north of these parks.</p>
2	Halfway Creek to Glenugie upgrade	There are no tourism or recreation uses near the project in this section.
3	Glenugie interchange to Tyndale	<p>There are no tourism or recreation uses located near to the project in this section. However, a number of tourist and recreation facilities are located adjacent to the existing highway that would be bypassed by the realigned highway. These include the Clarence Valley visitor information centre at Grafton and tourist accommodation such as motels at South Grafton.</p> <p>The bypass of South Grafton and movement of the highway further from Grafton may impact on tourist related businesses due to a reduction in through traffic and a loss of highway trade. However, due to the size of Grafton, it is expected that the adverse effects from a loss of highway trade would be minimised. In particular, the bypass of South Grafton would improve the amenity of businesses located on the existing highway.</p>
4	Tyndale to Maclean	The Clarence Coast visitor information centre is located adjacent to the Pacific Highway at Cameron Street, Maclean. Impacts on the visitor centre are described in Section 4.6.
5	Maclean to Iluka Road, Mororo	The Woombah Woods Caravan Park is located at Iluka Road, near Mororo. The project is not expected to impact on the use or amenity of the caravan park. Access to the highway from the caravan park would be via the proposed interchange at Iluka Road.
6	Iluka Road to Devils Pulpit upgrade	The project is located adjacent to Bundjalung National Park. Access to the national park would be maintained.
7	Devils Pulpit upgrade to Trustums Hill	<p>The New Italy Museum is located adjacent to the existing Pacific Highway at the intersection with Swan Bay New Italy Road. Potential impacts on the museum are described in Section 4.6.</p> <p>Access to Tabbimoble State Forest and Doubleduke State Forest would be maintained.</p>
8	Trustums Hill to Broadwater National Park	There are no tourism or recreation uses near the project in this section.
9	Broadwater National Park to Richmond River	Access to Broadwater National Park would be maintained via the current access at the Woodburn-Evans Head Road and Broadwater-Evans Head Road. Interchanges would be provided to both of these roads from the Pacific Highway.
10	Richmond River to Coolgardie Road	There are no tourism or recreation uses near the project in this section.
11	Coolgardie Road to Ballina Bypass	There are no tourism or recreation uses near the project in this section.

4.10. Access and connectivity

The project has the potential to impact on access and connectivity at a regional, local or property level. This section provides an assessment of potential impacts on access and connectivity from the construction and operation of the project.

4.10.1. Construction

During construction, the project would generate a high number of vehicle trips, associated with:

- Haulage of construction equipment and materials
- Movement of the construction workforce to and from construction work sites
- General site activities.

Potential changes to local access and connectivity would generally result from increased construction traffic, including the delivery of materials and equipment and the movement of the construction workforce. This may result in delays to motorists and other road users, increasing travel times.

Works near to the existing highway or local roads would affect access and connectivity through temporary reductions in road speed limits and temporary delays and diversions. Many residents in smaller towns and villages across the study area currently experience long commuting times and travel considerable distances to major centres for work, school or leisure activities. Any additional delays or disruptions are likely to be a concern for local residents resulting in potential impacts on lifestyle due to increased travel times.

Some roads near construction works are used for school bus routes. Potential impacts arising from the construction phase for roads used as school bus routes include:

- Potential delays and longer travel times for school buses due to construction works (eg lane closures and traffic diversions)
- Increases in traffic, including construction traffic (eg heavy vehicles) resulting in potential safety issues
- Potential safety issues for pedestrians at bus stops, including conflicts with construction vehicles, requiring active management for school drop-off and pick-up.

The haulage of construction materials and equipment and movement of construction workers to construction worksites would also increase traffic volumes on the existing highway and local roads across the study area. This may impact on safety for other road users, including school children travelling by school bus, and tourists who may be unfamiliar with local driving conditions.

Delays and disruptions for local communities and impacts of increased construction vehicles are likely to be a particular concern when cumulative impacts of the project are considered with other projects either under construction or planned to be constructed around the same

time as the project. Specifically, communities across the study area have experienced delays and disruptions to access and connectivity over many years due to the upgrade of other sections of the highway, with these likely to continue as further upgrades are constructed.

Management of construction traffic would be required to ensure safety for motorists is maintained during construction. This should include communication (ie, signage, advertisements in local papers, consultation materials) with local residents and road users (including tourists) about changes to local access and potential road hazards. Minimising, where possible, the duration and extent of traffic delays and disruptions will also assist in mitigating cumulative impacts for local communities.

Early and ongoing consultation and communication with school bus operators and local schools during construction would help in identifying potential changes to school bus access and safety for students at school bus stops. This should include education and awareness programs for school bus operators and school communities, including students, about potential changes and safety risks. Ongoing monitoring of school bus routes for delays and safety, and the identification of alternate routes (if required) should also be undertaken and where possible, heavy vehicle movements along school bus routes during school pick-up and drop-off times should be limited, if not avoided. The implementation of education and awareness programs for transport operators about potential safety impacts on school bus routes would also help to ensure safety for students.

Early and ongoing consultation and communication should also be undertaken with emergency service providers, about changes to local access during construction.

4.10.2. Operation

Overall, the project would improve regional access and connectivity, including to and between destinations within the region and to destinations in surrounding regions such as south-east Queensland and central NSW, through improved driving conditions, reduced travel times and improved road safety. However, the project may change local access arrangements and thereby affect connectivity in relation to rural areas and properties. The following section describes likely impacts for regional and local access and connectivity from the operation of the project.

Regional access and connectivity

Within the region, the project would improve access for local residents, businesses and tourists to regional centres, towns and villages, employment opportunities and regional level community services and facilities such as education, healthcare, and leisure facilities. In particular, it would:

- Reduce travel times between some centres and towns. This would be a benefit for many community members, with many currently required to travel considerable distances and experience long commuting times to major centres for work, school or leisure
- Improve travel times for freight along the highway. In 2026, travel-time savings are estimated to be \$34.49 million per year for light vehicles and \$15.08 million per year for heavy vehicles (source). Travel-time savings are a particularly important outcome for the transport of freight, with quicker journey times resulting in cost savings and efficiency improvements for manufacturers transporting raw materials and transporting

the end product to market. Further discussion on travel-time savings resulting from the project is included in the cost-benefit analysis in the traffic and transport working paper

- Improve travel times for freight on the Brisbane–Sydney corridor. This corridor is a major contributor to Australia’s economic activity. In 2004, about 11.5 million tonnes of freight (excluding coal) was moved between Sydney and Brisbane. This accounted for about one-third of the total east coast inter-capital freight (RTA, 2007). The Bureau of Transport and Regional Economics (BTRE) estimates that freight travelling the full length of the corridor comprises 21 per cent of the non-bulk inter-capital freight and 16 per cent of all non-bulk freight carried on all AusLink corridors in mainland Australia. It is estimated that about 76 per cent of these freight movements are undertaken by road, most likely using the Pacific Highway
- Improve road safety. Existing road safety on some sections of the Pacific Highway is a key concern for many communities across the region and was one of the issues most frequently raised during consultation for the project and for this assessment. Improving the safety of the highway would be a key benefit for local communities and other travellers. Reductions in accident rates are likely to result from the upgrade of the highway from an undivided road to a divided road. These savings are estimated to be equivalent to \$16.05 million per year when the project’s 11 sections are anticipated to open in 2026. Further discussion on accident savings is included in the cost-benefit analysis in the traffic and transport working paper
- Improve access for local and regional travellers during flood events. Access to regional centres and towns and villages across the region are occasionally cut by floodwaters and improved access during flood events would be a benefit for local communities.

An important local freight movement is the transport of raw sugar cane to the sugar mills at Broadwater and Harwood. While the upgraded highway would bring important time savings to this industry, accessibility of individual growers to the upgraded highway would vary.

Local access and connectivity

Impacts on local access and connectivity would occur where changes to the local road network change the way people move between and within towns and villages.

The project is for a class M design, but would initially be delivered as a combination of class A and class M. This would provide varying levels of access and connectivity between and within towns and villages along the highway. class A roads would retain local access via limited intersections and interchanges, while a class M design would provide local service roads, and access to the highway would be restricted to the interchanges.

Where local roads are crossed by the project or are required to be altered, the existing road network would be maintained or alternative access would be provided. This would result in changed trip patterns or increased trip lengths for some local residents.

Existing local and school bus routes are generally expected to use existing bus routes, although some bus operators may modify bus routes or add services in response to the upgraded Pacific Highway. School bus services that operate within towns would not be impacted by the project, other than through reductions in traffic in those towns bypassed by the upgraded highway. One school bus route near Ballina that currently uses the existing Pacific Highway may be impacted by the project through changes to local routes. Existing bus stops would be maintained, where practicable. Where changes to local and school bus routes

or the location of bus stops are required, consultation with bus operators, school communities and the wider community would be undertaken to identify potential impacts and likely mitigation measures. Community education programs would also be conducted to increase awareness about changed bus routes and bus stop locations.

The likely adverse impacts would therefore include:

- Impacts on local access and connectivity for a number of towns and villages – such as Grafton, Ulmarra, Tyndale, Woodburn and Broadwater – which currently have direct access to the Pacific Highway. Local access and connectivity for these towns and villages would be impacted by the bypass of these towns and changes to access points or interchanges with the highway
- Limited pedestrian and cycle access across the upgraded highway.

Likely benefits would include:

- The provision of improved clear zones and local access roads would provide opportunities for safer access for pedestrians and cyclists. The provision of wider shoulders along the highway would also improve safety for cyclists
- Opportunities for improved pedestrian and cycle access and connectivity within those towns and villages bypassed by the project. These include Woolgoolga, Corindi, Glenugie, Ulmarra, Tyndale, Woodburn, Broadwater and Wardell. In particular, separation of through trips from local trips would reduce heavy vehicles and high traffic volumes from these towns, and improve safety and ease of access for these local communities. This would help to improve amenity and safety for pedestrians and cyclists, making these modes of transport more attractive to local residents
- Realignment of the highway away from towns, villages and localities adjacent to the Clarence or Richmond rivers, which would reduce the volume of traffic within these locations. This would have the potential to improve connectivity to these rivers for recreation and enjoyment and strengthen the community's environmental values associated with these features.

Further detail on potential impacts on local access and connectivity for each of the sections is provided in Table 4-9.

Property access

The location of the project would impact property access and connectivity as follows:

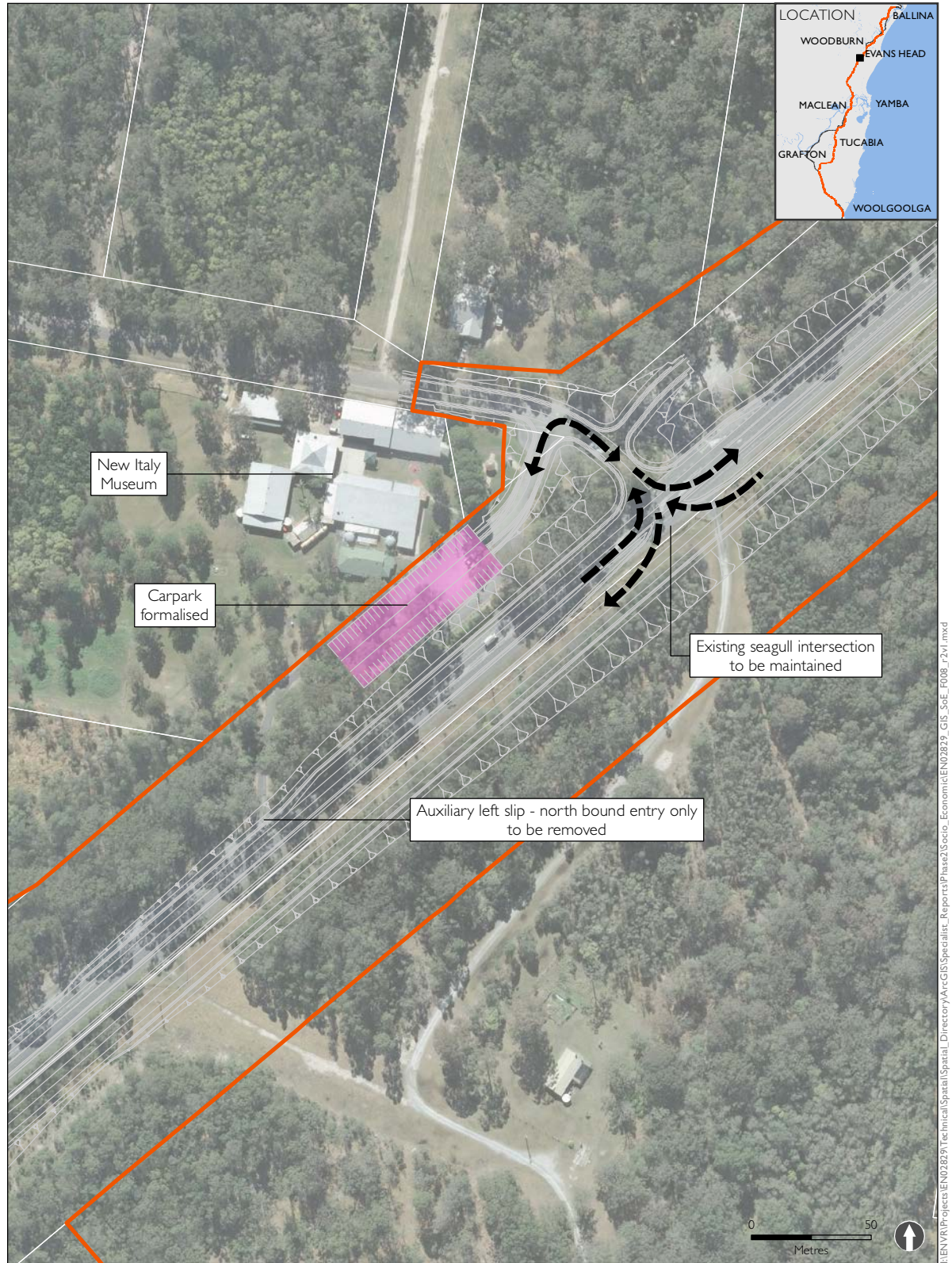
- There may be adverse impacts on access to and between properties near the project. In particular, potential impacts may be experienced where the project traverses larger rural properties, potentially restricting the movement of farm equipment and livestock between different areas of the property
- There may be beneficial impacts on access to some properties. Where the project is realigned from the existing highway, local access roads would be maintained where possible, to ensure access to properties. Property access in these areas is likely to be improved for some property owners, with access to the property being safer and easier due to a reduction in traffic volumes, and particularly heavy vehicles. This is particularly relevant for those property owners required to access the upgraded highway with slow moving vehicles such as large trucks or farm machinery.

Consultation and communication with property owners is ongoing about potential disruptions to property access for farming properties, including the movement of farm equipment and livestock between properties, and to ensure that safe access is maintained for those properties adjacent to the upgraded highway.

In the longer term, under the class M design the project would remove direct access to the New Italy Museum located south of Woodburn, with access from the highway to be provided via the Woodburn or Iluka Road interchanges and local access roads.

The New Italy locality serves a range of functions, including 'driver reviver' and access to the New Italy Museum, which is an important tourist destination. The need to maintain access to the New Italy Museum was identified during consultation for this assessment, and loss of direct access from the highway would be a concern for this community. Proposed changes to access to the museum are shown in Figure 4-22.

Figure 4-22 Proposed access changes at New Italy Museum



- The project
- New Italy complex carpark
- Class A design detail
- Access

Impacts on local access and connectivity in each project section are summarised in Table 4-9.

Table 4-9 Summary of impacts on local access and connectivity

Section	Location	Summary of impacts
1	Woolgoolga to Halfway Creek	<p>The section between Woolgoolga and Range Road would be upgraded to class M standard while the section between Range Road and Halfway Creek would initially be upgraded to class A standard.</p> <p>The Arrawarra Interchange would provide access to Arrawarra, Corindi Beach, Corindi and Red Rock, via the Eggins Drive connection to the existing Pacific Highway. No impact on local access is anticipated.</p> <p>The bypass of the Corindi area would help to improve access, safety and amenity for pedestrians and cyclists in the village.</p>
2	Halfway Creek to Glenugie upgrade	<p>This section would initially be upgraded to class A standard. The alignment follows the existing Pacific Highway in this section and is not expected to impact on local access or connectivity.</p>
3	Glenugie interchange to Tyndale	<p>This section would be upgraded to class M standard. A section of the existing Pacific Highway would become redundant but would be maintained as local access for communities along its length (ie Grafton, South Grafton, Ulmarra).</p> <p>The redundant section of highway would experience a reduction in future traffic, which would improve local access for these towns.</p> <p>The bypass of South Grafton and Ulmarra would reduce traffic through these towns and improve the amenity and safety of pedestrians and cyclists within the town. This may make these modes of transport more attractive to local residents.</p> <p>The location of the project would improve access to Grafton Airport for local residents, particularly residents travelling from towns north of Grafton.</p>
4	Tyndale to Maclean	<p>This section would be upgraded to class M standard. This section would initially be upgraded to class A standard.</p> <p>The project would improve local access for properties and communities on the existing Pacific Highway, by substantially reducing traffic flows. Local access would also be improved to Yamba and Maclean, which provides a range of community services to support surrounding communities.</p> <p>Emergency services, including ambulance and police, are located in Maclean. The project would improve access for these services to the highway and to surrounding communities.</p>
5	Maclean to Iluka interchange	<p>This section would initially be upgraded to a class A standard.</p> <p>The new bridge over the Clarence River at Harwood would improve local access for residents by separating local and highway traffic. Parallel local access roads would be provided for properties on Chatsworth Island.</p>
6	Iluka interchange to Devils Pulpit upgrade	<p>This section would initially be upgraded to a class A standard.</p> <p>Access to Iluka would be improved by the Iluka Road interchange. Parallel local access roads would be provided for properties on Chatsworth Island.</p>
7	Devils Pulpit upgrade	<p>This section would initially be upgraded to a class A standard,</p>

Section	Location	Summary of impacts
	to Trustums Hill	<p>which would maintain direct access between the highway and the New Italy Museum, New Italy township, the New Italy 'driver reviver' area, and communities along the route via upgraded intersections.</p> <p>Under the class M standard, access to the New Italy Museum and New Italy township would be reduced. There would be no direct access to the museum and access from the highway would be provided either via local access roads, the Woodburn interchange, located about 8 kilometres to the north, or the Iluka Road interchange, about 25 kilometres to the south.</p> <p>Maintaining access to the New Italy Museum and New Italy township was identified as important during consultation for the concept plan. The New Italy area serves various purposes including a 'driver reviver' area, tourist attraction and centre for the local community, so loss of direct access from the highway would be a concern for this community and for the museum.</p>
8	Trustums Hill to Broadwater National Park	<p>This section would be upgraded to class M standard.</p> <p>Local east–west access between Woodburn and Evans Head and between Woodburn and Lismore or Casino would not be impacted. These are key connections for local residents and maintaining this access is important.</p> <p>Access for local residents on the Woodburn–Evans Head Road and in Evans Head to the upgraded highway would be improved by the new interchange. This would improve access for residents to towns and centres to the north and south, including Ballina and Maclean, respectively.</p> <p>The bypass of Woodburn would improve local access in the town by separating through trips from local trips. This would improve safety and ease of access for the local community. The bypass of the town would also improve the amenity and safety of pedestrians and cyclists.</p>
9	Broadwater National Park to Richmond River	<p>This section would be upgraded to class M standard.</p> <p>The bypass of Broadwater would help to improve local access in the town by separating through trips from local trips. This would improve safety and ease of access for the local community. The bypass of the town would also improve the amenity and safety of pedestrians and cyclists.</p> <p>The cycleway located to the east of the existing Pacific Highway would not be impacted. Cycling amenity is likely to improve.</p>
10	Richmond River to Coolgardie Road	<p>This section would be upgraded to class M standard.</p> <p>The bypass of Wardell would improve local access in the town by separating through trips from local trips. This would improve safety and ease of access for the local community. The bypass would also improve the amenity and safety of pedestrians and cyclists.</p>
11	Duck Creek to Ballina Bypass	<p>This section would be upgraded to class M standard.</p> <p>The project would remove direct access from the highway to some existing local roads. This would specifically impact access for some residents and farmers adjoining the existing highway. Local residents would be required to use the Wardell interchange to access local roads.</p>

5. Mitigation and management

This section outlines a range of measures for managing, avoiding or mitigating potential socio-economic impacts and maximising or enhancing the project's benefits.

5.1. Overview

5.1.1. Broad objectives

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

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

5.1.2. Community engagement

Community participation in ongoing planning, construction, environmental management, and monitoring would help to avoid or minimise potential socio-economic impacts. Many consultation tools and activities would be used to inform local and broader communities of project activities, including timing and duration of construction activities, potential impacts and proposed mitigation and environmental management measures. These tools would include:

- A dedicated web page on the RMS website
- A 24 hour, free-call, toll free number for ongoing enquiries
- A dedicated email address for email contact
- A stakeholder database to capture issues raised by the community and other stakeholders
- Regular community updates about the project, including during the planning and construction phases, distributed to local communities near the project and property owners and to regional communities via the project web page
- Phone calls to directly affected property owners to seek property access agreements. Letters would be sent to property owners who were unable to be contacted by phone.

5.2. Construction

Recommended strategies to manage potential socio-economic impacts during construction are outlined below.

5.2.1. Local business, industry and tourism

- On-going communication and consultation with local business owners, industry and tourism operators directly affected by the project's construction and closest to construction works, about the timing, duration and likely impact of construction activities, and to identify appropriate measures to manage potential impacts (eg MacLean visitor information centre)
- Provide compensation in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* for agribusiness and non-agribusinesses directly affected by the project.

Maintain access to the Clarence and Richmond rivers near construction activities, including for industry, tourism, fishing and recreation users.

5.2.2. Social infrastructure

- Undertake ongoing communication and consultation with managers of community services and facilities near to the proposed construction works, to ensure that potential impacts are appropriately managed. As a minimum, consult with:
 - Halfway Creek rural fire brigade
 - Halfway Creek hall
 - Clarence Coast Visitor Information Centre at Maclean
 - Harwood Island Public School
 - St Dominic's Catholic Church at Harwood
 - New Italy Museum, south of Woodburn
 - Jehovah's Witness church at Ballina.
- Maintain recreational access to the Clarence and Richmond rivers near construction activities, including access to existing boat ramps upstream of the existing Clarence River bridge at Harwood. Where river access is disrupted, suitable alternative access should be provided.

5.2.3. Community values

- Avoid areas of significant vegetation where possible and reinstate disturbed areas as soon as possible following construction.

5.2.4. Local amenity

- Undertake early and ongoing consultation and communication with residents and local communities closest to construction works about construction activities, including timing, duration and likely impacts. This would be particularly important where works are proposed outside of standard daytime construction hours.

5.2.5. Access and connectivity

- Develop and implement traffic management plans to assist in minimising traffic disruptions and delays
- Maintain access to properties near to the project during construction, including where required, for the movement of farm equipment and livestock between properties
- Where temporary changes to property access are required during construction, alternate access should be determined in consultation with affected property owners and tenants.

5.3. Operation

Recommended strategies to manage potential socio-economic impacts during operation are outlined below.

5.3.1. Local business, industry and tourism

- Develop an effective signage strategy using signposting and visual prompts to:
 - Encourage passing traffic to the centre of townships where businesses are located
 - Encourage drivers to make stopovers at townships that are bypassed by the upgraded highway (Ulmarra, Wardell, Broadwater and Woodburn) for fuel, supplies and short term accommodation.

5.3.2. Amenity

- Where required, establish noise attenuation measures to reduce traffic noise for nearby residents and communities. This is particularly relevant where a change in the alignment from the existing highway has resulted in the highway moving closer to houses and communities currently unaffected by the highway or other major roads
- Where required, provide screening for residents and communities near to the highway, to reduce the visual impacts of the project. This is particularly relevant where a change in the alignment from the existing highway has resulted in the highway moving closer to houses and communities currently unaffected by the highway or other major roads.

5.3.3. Access and connectivity

- Undertake consultation with the New Italy community about proposed access changes for the New Italy Museum, including potential impacts and recommended mitigation measures
- Undertake consultation with the Harwood Island Public School and other community facilities located adjacent to the project about proposed changes to local access, including potential impacts and recommended mitigation measures.
- Undertake early and ongoing communication and consultation with emergency services to allow planning for potential changes to response patterns and input into the design development.

6. Conclusions and summary

This report provides an assessment of potential social and economic impacts associated with the design, construction and operation of the Pacific Highway Woolgoolga to Ballina upgrade project. The assessment of social and economic impacts included:

- Scoping the range of issues relevant to the social and economic environment of local and regional communities, including consideration of the Director-General's Environmental Assessment Requirements
- Describing the existing socio-economic environment of the study area to provide a baseline from which impacts of the project can be assessed
- Identifying and assessing potential socio-economic impacts of the project's construction and operation on local and regional communities, including towns and villages bypassed by the project
- Identifying measures to manage or mitigate potential impacts on the socio-economic environment and maximise potential benefits.

Overall, the project is expected to provide a range of benefits for the social and economic environments on local and regional communities, including:

- Improved economic prosperity resulting from increased growth and employment opportunities provided by the project's construction, increased spending in the region during construction, improved connectivity between suppliers and markets and a reduction in the cost of congestion
- Improved profitability and viability of local businesses, driven by the direct and indirect flow-on effects from construction expenditure, improvement in the ability of the route to carry greater volumes of freight and passenger traffic, improved connectivity between businesses and people and to regional tourist attractions
- Improved access to local and regional social infrastructure located within regional centres such as Coffs Harbour, Ballina and Lismore as well as improved access and response patterns for emergency services to communities across the region and to incidents on the highway
- Improved local amenity for local towns and villages bypassed by the project, including Corindi, South Grafton, Ulmarra, Tyndale, Woodburn, Broadwater and Wardell, due to a reduction in the volume of future traffic and consequential improvements in local air quality, levels of traffic noise and pedestrian safety and amenity
- Improved access for local residents, businesses and tourists, including reduced travel times between some centres and towns, improved travel times for freight, improved road safety and improved access for local communities and travellers during flood events.

The construction and operation of the project would be likely to also have some adverse impacts on the social and economic environment of local and regional communities.

During construction, key impacts for local and regional communities include:

- Reduced accessibility, visibility and amenity for businesses located along the existing Pacific Highway. This is likely to have the greatest effect on businesses dependent on accessibility, visibility and a serene operating environment such as retail, accommodation, cafes and restaurants
- Increased demand for community services and facilities, such as medical and emergency services, due to an influx of construction workers to the study area. This would potentially impact on service levels for some services and facilities
- Changed access to some community facilities across the study area due to increased construction traffic and construction works adjacent to the existing highway or other local roads, potentially resulting in delays and increased travel times for some residents accessing services
- Impacts on amenity of community facilities located near to the project due to increased construction traffic, noise and dust, including Halfway Creek rural fire brigade, Halfway Creek community hall, Clarence Coast visitor information centre at Maclean, Harwood Island Public School and New Italy Museum
- Impacts on community values resulting from possible disturbance to the area's natural environment and landscape values, changes to the rural character and amenity due to increase noise and dust from construction activities, and delays and disruptions to road users from temporary changes to local access
- Changes in local access and traffic conditions, resulting in delays and disruptions for travellers and increased noise and dust impacting on amenity of accommodation uses, tourist attractions and recreation uses closest to the project works
- Potential delays and disruptions for road users, resulting in local travel times as well as impact on road safety due to increased construction traffic and increased hazards near road works.

During operation, potential adverse impacts on the social and economic environment include:

- Direct and indirect impact on property, including through acquisition, potential impacts on the movement of cattle and farm machinery within farming properties due to the location of the highway and uncertainty about the timing of property acquisition
- Direct impact on highway based businesses due to property acquisition, and the possible need for these businesses to relocate elsewhere
- Potential impacts on fisheries in the Richmond and Clarence rivers including the estuary prawn trawl fishery, estuary general fishery, trap and line fishery
- Loss of approximately 953 hectares of agricultural land within the project boundary. Land uses are cropping including sugarcane, grazing and a mix of agricultural uses including banana, aquaculture, hardwood, softwood, vegetables and vineyard. However, this represents less than 0.2 per cent of agricultural land in the region and the overall impact on the sector is minor
- Impacts on amenity of community facilities located near to the project due to increased traffic noise and changes in local access, including Halfway Creek rural fire brigade, Halfway Creek community hall, Clarence Coast visitor information centre at Maclean, Harwood Island Public School and New Italy Museum

- Potential impacts on the community values relating to the natural environment including rivers and wetlands, national parks and loss or fragmentation of habitat for fauna species, such as the coastal emu
- Potential impacts on community values relating to rural character and heritage and local amenity, due to the realignment of the highway away from the existing highway closer to communities such as Pillar Valley, Tucabia, Coldstream and Gulmarrad
- Impact on a small number of tourism and recreation uses through partial property acquisition or indirectly through changes in property access and local amenity
- Changes in local access and connectivity, resulting in changed trip patterns and increased trip lengths for some residents.

The implementation of mitigation and management measures would assist in avoiding or mitigating potential impacts on the social and economic environment during construction and operation, and maximise or enhance the project's benefits.

In particular, early and ongoing consultation with affected property owners, businesses and communities as well as community participation in the ongoing planning, environmental management and monitoring would be important in avoiding and minimising potential socio-economic impacts of the project's construction and operation.

The implementation of environmental management measures and traffic management plans would also be important in mitigating potential impacts near the project during construction.

In the longer term, key strategies to manage potential impacts include implementation of effective signage for bypassed towns.

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Appendix A Demographic characteristics of towns and villages

Table 7-1 Demographic characteristics of towns and villages

Characteristic	Corindi Beach (locality)	Red Rock (locality)	Grafton (locality)	Tucabia (locality)	Ulmarra (locality)	Tyndale (state suburb)	Maclean (locality)	Harwood (state suburb)	Woodburn (locality)	Broadwater (locality)	Wardell (locality)	Regional NSW
Population	834	274	17,501	258	446	213	3246	193	618	465	622	2,419,815
People aged 14 years or under (%)	20.2	17.9	20.5	27.9	17.0	19.7	18.7	17.1	21.7	18.5	24.6	20.4
People aged 65 years or over (%)	13.7	25.9	19.7	8.5	25.1	16.9	25.9	20.2	16.3	14.0	10.9	16.5
People at same address as 12 months previously (%)	80.5	80.7	77.7	93.3	76.3	84.1	81.5	78.6	78.9	77.3	82.0	80.4
People at same address as 5 years previously (%)	49.7	52.1	53.9	63.9	50.4	59.9	55.9	59.1	57.0	53.0	52.8	55.5
Lone-person households (%)	21.2	27.5	30.3	22.0	24.2	19.0	30.5	33.8	21.6	24.9	23.9	25.9
Couple-only families (%)	36.6	50.6	39.8	33.3	50.9	56.1	44.5	32.1	31.5	38.0	34.1	40.7
Family households with children (%)	62.1	49.4	58.9	62.7	49.1	43.9	53.6	62.3	65.7	62.0	62.4	58.0
People who speak LOTE spoken at home (%)	2.2	0.0	1.3	1.2	1.3	0.0	1.4	3.1	1.0	1.1	1.6	4.5
Need for assistance (%)	4.9	4.7	7.0	7.0	11.0	10.8	10.3	5.8	4.1	6.0	3.5	5.1
Median weekly household income (\$)	634	556	641	632	585	612	587	812	736	735	708	795
Households earning <\$500 per week (%)	28.3	42.0	30.6	27.1	40.0	39.3	35.6	36.3	22.8	20.3	25.9	25.4
Dwellings fully owned (%)	33.4	52.9	39.4	46.8	40.6	47.6	44.3	40.5	35.5	40.5	30.4	39.4
Dwellings being rented (%)	30.2	23.9	29.5	10.6	32.5	21.4	33.2	31.6	23.9	26.0	27.8	26.7
Unemployment (%)	9.5	13.4	9.3	17.3	3.9	3.4	11.8	15.2	9.5	9.8	9.5	7.0

Source: ABS Census 2006

Table 7-2 Top five industry of employment, 2006

Industry of employment	Corindi Beach (locality)	Red Rock (locality)	Grafton (locality)	Tucabia (locality)	Ulmarra (locality)	Tyndale (state suburb)	Maclean (locality)	Harwood (state suburb)	Woodburn (locality)	Broadwater (locality)	Wardell (locality)	Regional NSW
Residential building construction	4.6	-	-	-	-	-	-	-	-	-	5.4	-
Building completion services (ie plastering, tiling, painting, etc)	-	3.6	-	-	-	-	-	-	-	-	-	-
Residential care services	-	-	-	-	-	-	4.9	5.3	4.4	5.4	4.7	-
Cafes, restaurants and takeaway food services	-	-	3.1	-	-	-	3.6	-	-	5.4	4.3	3.6
Pubs, taverns and bars	3.4	-	-	-	-	-	-	-	-	-	-	-
Supermarket and grocery stores	-	-	3.2	-	-	10.1	5.0	-	3.9	-	3.9	2.7
Grocery, liquor and tobacco	3.1	3.6	-	-	-	-	-	-	-	-	-	-
Other crop growing	-	-	-	-	-	12.7	-	5.3	-	-	3.1	-
Fruit and tree nut growing	3.4	4.8	-	-	-	-	-	-	-	-	-	-
School education	5.6	7.1	5.7	-	7.6	-	6.1	-	4.4	7.1	-	5.2
Sugar and confectionary manufacturing	-	-	-	-	-	-	-	28.9	-	7.1	-	-
Other social assistance services	-	-	-	-	-	-	-	-	-	4.2	-	-
Local government administration	-	-	-	6.7	-	6.3	5.7	-	4.8	-	-	-
Accommodation	-	4.8	-	-	-	-	-	-	-	-	-	-

Source: ABS Census 2006

Appendix B Business Survey

Table B-1 ANZSIC classification as applied to business count

Class	Business sector or entity	General Description
1	Agriculture, forestry and fishing	Businesses engaged in growing crops, raising animals, growing and harvesting timber, and harvesting fish and other animals from farms or their natural habitats. It also includes the production and support services to production.
2	Mining	Businesses involve extract naturally occurring mineral solids and gases, and other preparation work customarily performed at the mine site, or as a part of mining activity.
3	Manufacturing	Businesses mainly engaged in the physical or chemical transformation of materials, substances or components into new products (except agriculture and construction). The materials, substances or components transformed by units in this division are raw materials that are products of agriculture, forestry, fishing and mining, or products of other manufacturing units.
4	Electricity, gas and water supply	Businesses engaged in the provision of electricity; gas through mains systems; water; drainage; and sewage services. This division also includes units mainly engaged in the collection, treatment and disposal of waste materials; remediation of contaminated materials (including land); and materials recovery activities.
5	Construction	Businesses mainly engaged in the construction of buildings and other structures, additions, alterations, reconstruction, installation, and maintenance and repairs of buildings and other structures.
6	Wholesale trade	Businesses mainly engaged in the purchase and onselling, the commission-based buying, and the commission-based selling of goods, without significant transformation, to businesses.
7	Retail trade	Businesses mainly engaged in the purchase and onselling, the commission-based buying, and the commission-based selling of goods, without significant transformation, to the general public.
8	Accommodation, cafes and restaurants	Businesses mainly engaged in providing short-term accommodation for visitors, and providing food and beverage services, such as the preparation and serving of meals and the serving of alcoholic beverages for consumption by customers, both on and off-site.
9	Transport and storage	Businesses mainly engaged in providing transportation of passengers and freight by road, rail, water or air. Other transportation activities such as postal services, pipeline transport and scenic and sightseeing transport are included in this division.
10	Communication services	Businesses mainly engaged In creating, enhancing and storing information products in media that allows for their dissemination; transmitting information products using analogue and digital signals (via electronic, wireless, optical and other means); and providing transmission services and/or operating the infrastructure to enable the transmission and storage of information and information products.
11	Finance and insurance	Businesses mainly engaged in financial transactions involving the creation, liquidation, or change in ownership of financial assets, and/or

Class	Business sector or entity	General Description
		in facilitating financial transactions.
12	Property and business services	Businesses mainly engaged in renting, hiring, or otherwise allowing the use of tangible or intangible assets (except copyrights), and units providing related services.
13	Education	Businesses mainly engaged in the provision and support of education and training, except those engaged in the training of animals eg dog obedience training, horse training.
14	Health and community services	Businesses mainly engaged in providing human health care and social assistance, and in providing these services apply common processes, where the labour inputs of practitioners with the requisite expertise and qualifications are integral to production or service delivery
15	Cultural and recreational services	Businesses mainly engaged in the preservation and exhibition of objects and sites of historical, cultural or educational interest; the production of original artistic works and/or participation in live performances, events, or exhibits intended for public viewing; and the operation of facilities or the provision of services that enable patrons to participate in sporting or recreational activities, or to pursue amusement interests.
16	Personal and other services	Businesses engaged in a broad range of personal services; religious, civic, professional and other interest group services; selected repair and maintenance activities; and private households employing staff.

Source: ANZSIC 2006

Table B-2 Key businesses sampled

Count	Location	Name or Type of Business	Bypassed?	Position
1	Corindi beach	Corindi Caravan Park	Bypassed	Town/Village centre
2	Corindi beach	The shop' Convenient Store / Takeaway	Bypassed	Town/Village centre
3	Corindi beach	Eggs Farm / Organic Produce Retail	Bypassed	Along existing highway
4	Corindi beach	Berry Exchange	Bypassed	Town/Village centre
5	Corindi beach	Berry Farm	Bypassed	Town/Village centre
6	Corindi beach	Shell Service Station (southbound)	Bypassed	Along existing highway
7	Corindi beach	Creek Café & Food at the Service Station	Bypassed	Along existing highway
8	Dirty Creek	Rose Farm	Bypassed	Along existing highway
9	Well Crossings (between Corindi Beach & South Grafton)	WesTrac CAT (Farm / Industrial Machinery)	Non-bypassed	Along existing highway
10	Well Crossings (between Corindi Beach and South Grafton)	Clarence Coast Construction	Non-bypassed	Along existing highway
11	Well Crossings (between Corindi Beach and South Grafton)	Mclenan Earth Moving	Non-bypassed	Town/Village centre
12	Well Crossings (between Corindi Beach and South Grafton)	Premium Trusses / Timber / Frame	Non-bypassed	Town/Village centre
13	Well Crossings (between Corindi Beach and South Grafton)	Grafton Truck / Trailer Repairs	Non-bypassed	Town/Village centre
14	Well Crossings (between Corindi Beach and South Grafton)	Liberty Service Station	Non-bypassed	Along existing highway
15	Well Crossings (between Corindi Beach and South Grafton)	J. Notaras & Sous Pty Ltd (Saw millers & timber merchants)	Non-bypassed	Along existing highway
16	Well Crossings (between Corindi Beach and South Grafton)	United Service Station 1	Non-bypassed	Along existing highway
17	Well Crossings (between Corindi Beach and South Grafton)	United Service Station 2	Non-bypassed	Along existing highway

Count	Location	Name or Type of Business	Bypassed?	Position
18	Well Crossings (between Corindi Beach and South Grafton)	Glenwood Tourist Park Cabins Motel	Non-bypassed	Along existing highway
19	Well Crossings (between Corindi Beach and South Grafton)	United Quick Shop Café / Restaurant	Non-bypassed	Along existing highway
20	Well Crossings (between Corindi Beach and South Grafton)	Escapana Hotel	Non-bypassed	Along existing highway
21	Well Crossings (between Corindi Beach and South Grafton)	Raven Smash Repairs	Non-bypassed	Along existing highway
22	Well Crossings (between Corindi Beach and South Grafton)	Grafton Lodge Motel	Non-bypassed	Along existing highway
23	Well Crossings (between Corindi Beach and South Grafton)	Skyline Car Wash / Car Care	Non-bypassed	Along existing highway
24	Well Crossings (between Corindi Beach and South Grafton)	Hi-Way Motel	Non-bypassed	Along existing highway
25	Well Crossings (between Corindi Beach and South Grafton)	Caltex Service Station	Non-bypassed	Along existing highway
26	Well Crossings (between Corindi Beach and South Grafton_)	Hungry Jack	Non-bypassed	Along existing highway
27	Well Crossings (between Corindi Beach and South Grafton)	McDonald's	Non-bypassed	Along existing highway
28	Well Crossings (between Corindi Beach and South Grafton)	Bunnings	Non-bypassed	Along existing highway
29	Well Crossings (between Corindi Beach and South Grafton)	Caravan Sales / Dealers	Non-bypassed	Along existing highway
30	Well Crossings (between Corindi Beach and South Grafton)	TOYOTA Dealers	Non-bypassed	Along existing highway
31	Well Crossings (between Corindi Beach and South Grafton)	SUZUKI Dealers	Non-bypassed	Along existing highway
32	Well Crossings (between Corindi Beach and South Grafton)	Michelin Service Centre Repairs	Non-bypassed	Town/Village centre
33	South Grafton	Shell Service Station	Bypassed	Town/Village centre

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Count	Location	Name or Type of Business	Bypassed?	Position
34	South Grafton	Big River Glass & Aluminium	Bypassed	Town/Village centre
35	South Grafton	Windscreen Crack Repairs	Bypassed	Town/Village centre
36	South Grafton	Grafton Car Wash	Bypassed	Town/Village centre
37	South Grafton	Leslie Farm & Gardening Machinery	Bypassed	Town/Village centre
38	South Grafton	Blues on Bent Food Takeaway	Bypassed	Town/Village centre
39	South Grafton	Civic Video	Bypassed	Town/Village centre
40	South Grafton	Bi-Lo	Bypassed	Town/Village centre
41	South Grafton	Holiday Coast Meat Butcher	Bypassed	Town/Village centre
42	South Grafton	Kebab King Takeaway	Bypassed	Town/Village centre
42	South Grafton	Pharmacy	Bypassed	Town/Village centre
43	South Grafton	Yummy Noodle Shop	Bypassed	Town/Village centre
44	South Grafton	BCU Banking	Bypassed	Town/Village centre
45	South Grafton	Pathology	Bypassed	Town/Village centre
46	South Grafton	Grafton One Camping	Bypassed	Town/Village centre
47	South Grafton	South Grafton Shopping Centre	Bypassed	Town/Village centre
48	South Grafton	Eagle Boys Pizzas Takeaway	Bypassed	Town/Village centre
49	South Grafton	Bottle Shop	Bypassed	Town/Village centre
50	South Grafton	Battery Barn (Auto motor Shop)	Bypassed	Town/Village centre
51	South Grafton	Terry Moulds Smash Repairs	Bypassed	Town/Village centre
52	South Grafton	Tiles Power	Bypassed	Town/Village centre
53	South Grafton	Bent Street Motor Inn	Bypassed	Town/Village centre
54	South Grafton	Australian Hotel	Bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
55	South Grafton	Animal Hospital	Bypassed	Town/Village centre
56	South Grafton	Bowling Club RSL	Bypassed	Town/Village centre
57	South Grafton	Riverview Asian Restaurant	Bypassed	Town/Village centre
58	South Grafton	Doctors Services/Clinic	Bypassed	Town/Village centre
59	South Grafton	South Grafton Big River Bar	Bypassed	Town/Village centre
60	South Grafton	BP Service Station	Bypassed	Town/Village centre
61	South Grafton	Chicken at Sundown	Bypassed	Town/Village centre
62	South Grafton	Automotive Services & Repairs	Bypassed	Town/Village centre
63	South Grafton	Art of the Clarence	Bypassed	Town/Village centre
64	South Grafton	Computer Store	Bypassed	Town/Village centre
65	South Grafton	Hairdresser 1	Bypassed	Town/Village centre
66	South Grafton	Hairdresser 2	Bypassed	Town/Village centre
67	South Grafton	Hairdresser 3	Bypassed	Town/Village centre
68	South Grafton	Photography	Bypassed	Town/Village centre
69	South Grafton	Emporium Café	Bypassed	Town/Village centre
70	South Grafton	Hardware Store	Bypassed	Town/Village centre
71	South Grafton	Naked Bean Café	Bypassed	Town/Village centre
72	South Grafton	Grafton Textiles	Bypassed	Town/Village centre
73	South Grafton	Local Art & Gallery	Bypassed	Town/Village centre
74	South Grafton	Newsagency	Bypassed	Town/Village centre
75	South Grafton	Butcher	Bypassed	Town/Village centre
76	South Grafton	Baits & Tackle	Bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
77	South Grafton	Farmer on the South (Grocery Shop)	Bypassed	Town/Village centre
78	South Grafton	Saddlery Shop	Bypassed	Town/Village centre
79	South Grafton	Post Office Hotel	Bypassed	Town/Village centre
80	South Grafton	Repco	Bypassed	Town/Village centre
81	South Grafton	Resco	Bypassed	Town/Village centre
82	South Grafton	Great Northern Hotel	Bypassed	Town/Village centre
83	South Grafton	Craft Shop	Bypassed	Town/Village centre
84	South Grafton	Clothing Shop 1	Bypassed	Town/Village centre
85	South Grafton	Clothing Shop 2	Bypassed	Town/Village centre
86	South Grafton	Clothing Shop 3	Bypassed	Town/Village centre
87	South Grafton	Clothing Shop 4	Bypassed	Town/Village centre
88	South Grafton	Clarence Valley Funerals	Bypassed	Town/Village centre
89	South Grafton	Radiator Repairs	Bypassed	Town/Village centre
90	South Grafton	Bendigo Bank	Bypassed	Town/Village centre
91	South Grafton	Karrasaki Automotive Dealer	Bypassed	Town/Village centre
92	South Grafton	Post Office	Bypassed	Town/Village centre
93	South Grafton	DKM GP Financial Services	Bypassed	Town/Village centre
94	South Grafton	Clarence Valley Rural & Industrial Suppliers	Bypassed	Town/Village centre
95	South Grafton	Book / Toy Shop	Bypassed	Town/Village centre
96	Grafton	Crown Hotel	Bypassed	Town/Village centre
97	Grafton	Cranes Community Social Services	Bypassed	Town/Village centre
98	Grafton	Civic Centre (Town Hall)	Bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
99	Grafton	Clarence Valley Council	Bypassed	Town/Village centre
100	Grafton	Grafton Financial Services	Bypassed	Town/Village centre
101	Grafton	Bank 1	Bypassed	Town/Village centre
102	Grafton	Bank 2	Bypassed	Town/Village centre
103	Grafton	Bank 3	Bypassed	Town/Village centre
104	Grafton	Bank 4	Bypassed	Town/Village centre
105	Grafton	Bank 5	Bypassed	Town/Village centre
106	Grafton	Bank 6	Bypassed	Town/Village centre
107	Grafton	Bank 7	Bypassed	Town/Village centre
108	Grafton	Bank 8	Bypassed	Town/Village centre
109	Grafton	Country Energy (Essential Energy)	Bypassed	Town/Village centre
110	Grafton	Real Estate Agency 1	Bypassed	Town/Village centre
111	Grafton	Real Estate Agency 2	Bypassed	Town/Village centre
112	Grafton	Real Estate Agency 3	Bypassed	Town/Village centre
113	Grafton	Real Estate Agency 4	Bypassed	Town/Village centre
114	Grafton	Clothing Store 1	Bypassed	Town/Village centre
115	Grafton	Clothing Store 2	Bypassed	Town/Village centre
116	Grafton	Clothing Store 3	Bypassed	Town/Village centre
117	Grafton	Clothing Store 4	Bypassed	Town/Village centre
118	Grafton	Clothing Store 5	Bypassed	Town/Village centre
119	Grafton	Clothing Store 6	Bypassed	Town/Village centre
120	Grafton	Clothing Store 7	Bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
121	Grafton	Clothing Store 8	Bypassed	Town/Village centre
122	Grafton	Clothing Store 9	Bypassed	Town/Village centre
123	Grafton	Clothing Store 10	Bypassed	Town/Village centre
124	Grafton	Pharmacy 1	Bypassed	Town/Village centre
125	Grafton	Pharmacy 2	Bypassed	Town/Village centre
126	Grafton	Pharmacy 3	Bypassed	Town/Village centre
127	Grafton	Grafton Lawyer Services	Bypassed	Town/Village centre
128	Grafton	Travel Agency	Bypassed	Town/Village centre
129	Grafton	Dentist	Bypassed	Town/Village centre
130	Grafton	Valley Harward Restaurant Bar	Bypassed	Town/Village centre
131	Grafton	Computer Store	Bypassed	Town/Village centre
132	Grafton	Chemist 1	Bypassed	Town/Village centre
133	Grafton	Chemist 2	Bypassed	Town/Village centre
134	Grafton	Dick Smith	Bypassed	Town/Village centre
135	Grafton	Bakery 1	Bypassed	Town/Village centre
136	Grafton	Bakery 2	Bypassed	Town/Village centre
137	Grafton	Book Store	Bypassed	Town/Village centre
138	Grafton	Healthy Food	Bypassed	Town/Village centre
139	Grafton	Café	Bypassed	Town/Village centre
140	Grafton	Aquarium	Bypassed	Town/Village centre
141	Grafton	Ice Cream Shop	Bypassed	Town/Village centre
142	Grafton	The Clocktown Hotel	Bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
143	Grafton	Saraton Theatre	Bypassed	Town/Village centre
144	Grafton	Harvey Norman	Bypassed	Town/Village centre
145	Grafton	ALDI Food Store	Bypassed	Town/Village centre
146	Grafton	Caltex Service Station	Bypassed	Town/Village centre
147	Grafton	Holly's Café & Restaurant	Bypassed	Town/Village centre
148	Grafton	Pizzas Takeaway	Bypassed	Town/Village centre
149	Grafton	Newsagency	Bypassed	Town/Village centre
150	Grafton	Hairdresser 1	Bypassed	Town/Village centre
151	Grafton	Hairdresser 2	Bypassed	Town/Village centre
152	Grafton	Hairdresser 3	Bypassed	Town/Village centre
153	Grafton	Hairdresser 4	Bypassed	Town/Village centre
154	Grafton	Hairdresser 5	Bypassed	Town/Village centre
155	Grafton	Real Estate agency	Bypassed	Town/Village centre
156	Grafton	Grafton Hotel	Bypassed	Town/Village centre
157	Grafton	Hairdressers	Bypassed	Town/Village centre
158	Grafton	Caltex Service Station	Bypassed	Town/Village centre
159	Grafton	Retail Shop 1	Bypassed	Town/Village centre
160	Grafton	Grafton Shopping World (BigW / Coles / Woolworths / McDonald's/KFC/Subway/Dan Murphy's)	Bypassed	Town/Village centre
161	Grafton	BP Service Station	Bypassed	Town/Village centre
162	Grafton	Quality Inn Motel	Bypassed	Town/Village centre
163	Grafton	KFC	Bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
164	Grafton	Key Lodge Motel	Bypassed	Town/Village centre
165	Grafton	Fitzroy Motel Inn	Bypassed	Town/Village centre
166	Grafton	The ABBY Motel	Bypassed	Town/Village centre
167	Grafton	Roches Farming Hotel	Bypassed	Town/Village centre
168	Grafton	Dental Care	Bypassed	Town/Village centre
169	Grafton	Funeral Services	Bypassed	Town/Village centre
170	Grafton	Solicitors	Bypassed	Town/Village centre
171	Grafton	Post Office Hotel	Bypassed	Town/Village centre
172	Grafton	Financial Services	Bypassed	Town/Village centre
173	Grafton	Jacaranda Hotel	Bypassed	Town/Village centre
174	Grafton	Vet Clinic	Bypassed	Town/Village centre
175	Grafton	Grafton Mall	Bypassed	Town/Village centre
176	Grafton	BP Service Station	Bypassed	Along existing highway
177	Grafton	BP Quick Stop Restaurant	Bypassed	Along existing highway
178	Grafton	Jacaea Motor Lodge	Bypassed	Along existing highway
179	Grafton	Riverport Tourist Park	Bypassed	Along existing highway
180	Ulmarra	Ulmarra Hotel	Bypassed	Town/Village centre
181	Ulmarra	Lulu's B&B	Bypassed	Town/Village centre
182	Ulmarra	Newsagency	Bypassed	Town/Village centre
183	Ulmarra	Café Clarence	Bypassed	Town/Village centre
184	Ulmarra	Old Kent Road Motel	Bypassed	Town/Village centre
185	Ulmarra	Clothing Store 1	Bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
186	Ulmorra	Clothing Store 2	Bypassed	Town/Village centre
187	Ulmorra	Local Gallery	Bypassed	Town/Village centre
188	Ulmorra	Book Store	Bypassed	Town/Village centre
189	Ulmorra	Wide River Café	Bypassed	Town/Village centre
190	Ulmorra	Caltex Service Station	Bypassed	Town/Village centre
191	Ulmorra	Cattle Farms	Bypassed	Town/Village centre
192	Tucabia	Public School	Bypassed	Town/Village centre
193	Tucabia	Local Farms	Bypassed	Town/Village centre
194	Ulmorra	Riverview Service Station	Bypassed	Along existing highway
195	Ulmorra	Cane Farm	Bypassed	Along existing highway
196	Ulmorra	Antique Shop	Bypassed	Along existing highway
197	Ulmorra	Old Waves Collection	Bypassed	Along existing highway
198	Ulmorra	Caravan Park	Bypassed	Town/Village centre
199	Ulmorra	Church	Bypassed	Town/Village centre
200	Ulmorra	Public School	Bypassed	Town/Village centre
201	Ulmorra	Tourist Park (Northbound)	Bypassed	Along existing highway
202	Ulmorra	B&B (Northbound)	Bypassed	Along existing highway
203	Ulmorra	Plantation Motel	Bypassed	Along existing highway
204	Ulmorra	Newagency	Bypassed	Along existing highway
205	Ulmorra	Caravan Park	Bypassed	Along existing highway
206	Ulmorra	Tourist Park Fuel Shop	Bypassed	Along existing highway
207	Ulmorra	Tourist Park Food Shop	Bypassed	Along existing highway

Count	Location	Name or Type of Business	Bypassed?	Position
208	Ulmarra	BP Service Station	Bypassed	Along existing highway
209	MacLean	Ferry Park Restaurant	Non-bypassed	Along existing highway
210	MacLean	Hospital	Non-bypassed	Town/Village centre
211	MacLean	Motor Maclean	Non-bypassed	Town/Village centre
212	MacLean	Witziy Gallery	Non-bypassed	Town/Village centre
213	MacLean	Church	Non-bypassed	Town/Village centre
214	MacLean	Fresh Market Grocery	Non-bypassed	Town/Village centre
215	MacLean	Mechanic Motor	Non-bypassed	Town/Village centre
216	MacLean	Chemist	Non-bypassed	Town/Village centre
217	MacLean	Auto Electric	Non-bypassed	Town/Village centre
218	MacLean	Accountant Services 1	Non-bypassed	Town/Village centre
219	MacLean	Accountant Services 2	Non-bypassed	Town/Village centre
220	MacLean	Accountant Services 3	Non-bypassed	Town/Village centre
221	MacLean	Medical Services 1	Non-bypassed	Town/Village centre
222	MacLean	Medical Services 2	Non-bypassed	Town/Village centre
223	MacLean	Post Office	Non-bypassed	Town/Village centre
224	MacLean	Home Timber / Hardware	Non-bypassed	Town/Village centre
225	MacLean	Real estate agency 1	Non-bypassed	Town/Village centre
226	MacLean	Real estate agency 2	Non-bypassed	Town/Village centre
227	MacLean	Real estate agency 3	Non-bypassed	Town/Village centre
228	MacLean	Real estate agency 4	Non-bypassed	Town/Village centre
229	MacLean	Real estate agency 5	Non-bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
230	MacLean	Real estate agency 6	Non-bypassed	Town/Village centre
231	MacLean	Clothing Store 1	Non-bypassed	Town/Village centre
232	MacLean	Clothing Store 2	Non-bypassed	Town/Village centre
233	MacLean	Clothing Store 3	Non-bypassed	Town/Village centre
234	MacLean	Clothing Store 4	Non-bypassed	Town/Village centre
235	MacLean	Clothing Store 5	Non-bypassed	Town/Village centre
236	MacLean	Solicitors 1	Non-bypassed	Town/Village centre
237	MacLean	Solicitors 2	Non-bypassed	Town/Village centre
238	MacLean	MacLean Hotel	Non-bypassed	Town/Village centre
239	MacLean	Coffee Art Coffee Café	Non-bypassed	Town/Village centre
240	MacLean	Barber / Beauty Shop 1	Non-bypassed	Town/Village centre
241	MacLean	Barber / Beauty Shop 2	Non-bypassed	Town/Village centre
242	MacLean	Barber / Beauty Shop 3	Non-bypassed	Town/Village centre
243	MacLean	Barber / Beauty Shop 4	Non-bypassed	Town/Village centre
244	MacLean	Barber / Beauty Shop 5	Non-bypassed	Town/Village centre
245	MacLean	Book store	Non-bypassed	Town/Village centre
246	MacLean	Bank 1	Non-bypassed	Town/Village centre
247	MacLean	Bank 2	Non-bypassed	Town/Village centre
248	MacLean	Bank 3	Non-bypassed	Town/Village centre
249	MacLean	Bank 4	Non-bypassed	Town/Village centre
250	MacLean	Grocery Shop	Non-bypassed	Town/Village centre
251	MacLean	Butcher 1	Non-bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
252	MacLean	Butcher 2	Non-bypassed	Town/Village centre
253	MacLean	Newsagency	Non-bypassed	Town/Village centre
254	MacLean	Baits & Tackle	Non-bypassed	Town/Village centre
255	MacLean	Argyle Hotel	Non-bypassed	Town/Village centre
256	MacLean	Pot Belly Pie Food Shop	Non-bypassed	Town/Village centre
257	MacLean	Computer Store	Non-bypassed	Town/Village centre
258	MacLean	Flourist	Non-bypassed	Town/Village centre
259	MacLean	Fresh Food Takeaway	Non-bypassed	Town/Village centre
260	MacLean	SPAR Local Supermarket	Non-bypassed	Town/Village centre
261	MacLean	Clarence Hotel Restaurant	Non-bypassed	Town/Village centre
262	MacLean	Holden Car Dealer	Non-bypassed	Town/Village centre
263	MacLean	MacLean Motors	Non-bypassed	Town/Village centre
264	MacLean	Chinese Restaurant 1	Non-bypassed	Town/Village centre
265	MacLean	Chinese Restaurant 2	Non-bypassed	Town/Village centre
266	MacLean	Travel Agency	Non-bypassed	Town/Village centre
267	MacLean	MacLean Cellars	Non-bypassed	Town/Village centre
268	MacLean	Gift Shop 1	Non-bypassed	Town/Village centre
269	MacLean	Gift Shop 2	Non-bypassed	Town/Village centre
270	MacLean	Gift Shop 3	Non-bypassed	Town/Village centre
271	MacLean	MacLean Pictures / Frames	Non-bypassed	Town/Village centre
272	MacLean	IT Management Services	Non-bypassed	Town/Village centre
273	MacLean	Nursery	Non-bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
274	MacLean	Harvey Norman	Non-bypassed	Town/Village centre
275	MacLean	On the Bite (Café)	Non-bypassed	Town/Village centre
276	MacLean	Toy World	Non-bypassed	Town/Village centre
277	MacLean	Cottage Takeaway Shop	Non-bypassed	Town/Village centre
278	MacLean	The Chocolate Box	Non-bypassed	Town/Village centre
279	MacLean	River Café	Non-bypassed	Town/Village centre
280	MacLean	Hot Bread	Non-bypassed	Town/Village centre
281	MacLean	Internet Café	Non-bypassed	Town/Village centre
282	MacLean	Gourmet Kitchen	Non-bypassed	Town/Village centre
283	MacLean	Newsagency	Non-bypassed	Town/Village centre
284	MacLean	Craft Shop	Non-bypassed	Town/Village centre
285	MacLean	MacLean Cane Growers (Westfarmers / Federation / Insurance)	Non-bypassed	Town/Village centre
286	MacLean	Skype Café Lounge	Non-bypassed	Town/Village centre
287	MacLean	Movie Rentals	Non-bypassed	Town/Village centre
288	MacLean	Optometrists	Non-bypassed	Town/Village centre
289	MacLean	Shoes Shop	Non-bypassed	Town/Village centre
290	MacLean	Home & Equipment	Non-bypassed	Town/Village centre
291	MacLean	Pharmacy	Non-bypassed	Town/Village centre
292	MacLean	Vet Clinic	Non-bypassed	Town/Village centre
293	MacLean	Outdoors Gear Shop	Non-bypassed	Town/Village centre
294	MacLean	Dentist	Non-bypassed	Town/Village centre

Count	Location	Name or Type of Business	Bypassed?	Position
295	MacLean	Johnn's Shape Motors	Non-bypassed	Town/Village centre
296	MacLean	Library	Non-bypassed	Town/Village centre
297	MacLean	Home Care Services	Non-bypassed	Town/Village centre
298	MacLean	MacLean Hotel Restaurant	Non-bypassed	Town/Village centre
299	MacLean	Maclean Bowls Club	Non-bypassed	Town/Village centre
300	MacLean	Waterview Motel	Non-bypassed	Town/Village centre
301	MacLean	BP Service Station	Non-bypassed	Town/Village centre
302	MacLean	MacLean Riverside Caravan Park	Non-bypassed	Town/Village centre
303	MacLean	Local Petrol Station	Non-bypassed	Town/Village centre
304	MacLean	Sugar Cane Farm	Non-bypassed	Town/Village centre
305	MacLean	Clarence Coast Resort	Non-bypassed	Town/Village centre
306	Harwood	Shannon Bros Agriculture Construction Co.	Non-bypassed	Town/Village centre
307	Harwood	Public School	Non-bypassed	Town/Village centre
308	Harwood	Rural Buying Services (Fertilisers)	Non-bypassed	Town/Village centre
309	Harwood	Convenient Store / Café	Non-bypassed	Town/Village centre
310	Harwood	Harwood Hotel	Non-bypassed	Town/Village centre
311	Harwood	Antique Shop	Non-bypassed	Town/Village centre
312	Harwood	Post Office	Non-bypassed	Town/Village centre
313	Harwood	Manildra Harwood Sugars (Harwood Mill and Refinery)	Non-bypassed	Town/Village centre
314	Harwood	Sugar Cane Farm	Non-bypassed	Town/Village centre
315	Harwood	United Service Station	Non-bypassed	Along existing highway
316	Harwood	Island Restaurant	Non-bypassed	Along existing highway

Upgrading the Pacific Highway – Woolgoolga to Ballina Upgrade

Count	Location	Name or Type of Business	Bypassed?	Position
317	New Italy	Taste of New Italy Caffè	Non-bypassed	Along existing highway
318	New Italy	Rhode Roberts Aboriginal Gallery	Non-bypassed	Along existing highway
319	New Italy	Italy Museum Complex (Merlo Coffee/Gift Shop etc)	Non-bypassed	Along existing highway
320	New Italy	Osterin Veneta Bar-Restaurant	Non-bypassed	Along existing highway
321	New Italy	Glass Art Workshop & Gallery	Non-bypassed	Along existing highway
322	New Italy	Italian Pavilion	Non-bypassed	Along existing highway
323	Woodburn	Caltex Service Station	Bypassed	Along existing highway
324	Woodburn	IGA	Bypassed	Along existing highway
325	Woodburn	Bakery	Bypassed	Along existing highway
326	Woodburn	Butcher	Bypassed	Along existing highway
327	Woodburn	Pharmacy	Bypassed	Along existing highway
328	Woodburn	Medical Surgery	Bypassed	Along existing highway
329	Woodburn	Pot Belly Pies	Bypassed	Along existing highway
330	Woodburn	Hairdressers	Bypassed	Along existing highway
331	Woodburn	Laundry	Bypassed	Along existing highway
332	Woodburn	Newsagency	Bypassed	Along existing highway
333	Woodburn	Bendigo Bank	Bypassed	Along existing highway
334	Woodburn	Riverview Café	Bypassed	Along existing highway
335	Woodburn	Bottleshop	Bypassed	Along existing highway
336	Woodburn	Rod n Reed Hotel	Bypassed	Along existing highway
337	Woodburn	Rocky Mowh Repairs	Bypassed	Along existing highway
338	Woodburn	Parkside Café	Bypassed	Along existing highway

Upgrading the Pacific Highway – Woolgoolga to Ballina Upgrade

Count	Location	Name or Type of Business	Bypassed?	Position
339	Woodburn	Parkside Gift Shop	Bypassed	Along existing highway
340	Woodburn	Clothing and Furniture Retail Shop	Bypassed	Along existing highway
341	Woodburn	Post office	Bypassed	Along existing highway
342	Woodburn	Amature Bowling Club & Fitness Centre	Bypassed	Along existing highway
343	Woodburn	Woodburn Mowers & Repairs	Bypassed	Along existing highway
344	Woodburn	Antique Shop	Bypassed	Along existing highway
345	Woodburn	Information Centre (Internet/Computers/Printing/Copying/Fax)	Bypassed	Along existing highway
346	Woodburn	Woodburn Motel	Bypassed	Along existing highway
347	Woodburn	McGregory Earthmoving	Bypassed	Along existing highway
348	Woodburn	Pet Resort	Bypassed	Along existing highway
349	Broadwater	Caravan Park	Bypassed	Along existing highway
350	Broadwater	Liberty Service Station	Bypassed	Along existing highway
351	Broadwater	Post Office	Bypassed	Along existing highway
352	Broadwater	Motel A	Bypassed	Along existing highway
353	Broadwater	Sunrise Tourist Park	Bypassed	Along existing highway
354	Broadwater	Sunshine Sugar Broadwater Mill	Bypassed	Along existing highway
355	Broadwater	Antique and Collections	Bypassed	Along existing highway
356	Broadwater	Melbo's Veranda Restaurant	Bypassed	Along existing highway
357	Broadwater	BP Service Station	Bypassed	Along existing highway
358	Broadwater	Commercial Hotel	Bypassed	Along existing highway
359	Broadwater	Sugar Town Service Centre	Bypassed	Along existing highway

Count	Location	Name or Type of Business	Bypassed?	Position
360	Broadwater	NRMA Mechanic	Bypassed	Along existing highway
361	Broadwater	Broadwater Motel	Bypassed	Along existing highway
362	Broadwater	Broadwater Bowling Club	Bypassed	Along existing highway
363	Broadwater	Noel Graham Farm Machinery	Bypassed	Along existing highway
364	Broadwater	Pottery / Gift Shop	Bypassed	Along existing highway
365	Wardell	Mayley House Restaurant	Bypassed	Town/Village centre
366	Wardell	Wardell on the River Hotel	Bypassed	Town/Village centre
367	Wardell	Pie Shop	Bypassed	Town/Village centre
368	Wardell	Café / Grocery / Takeaway	Bypassed	Town/Village centre
369	Wardell	Post Office	Bypassed	Town/Village centre
370	Wardell	War Memorial Hall	Bypassed	Town/Village centre
371	Wardell	Public School	Bypassed	Town/Village centre
372	Wardell	Caravan Park	Bypassed	Town/Village centre
373	Wardell	Cane Growers Services Ltd	Bypassed	Town/Village centre
374	Wardell	Pre School	Bypassed	Town/Village centre
375	Wardell	BP Service Station	Bypassed	Along existing highway
376	Wardell	No visible business impact	Bypassed	Along existing highway
377	West Ballina	Sam's Warehouse	Bypassed	Along existing highway
378	West Ballina	Ballina West Shopping Centre	Bypassed	Along existing highway
379	West Ballina	Butcher	Bypassed	Along existing highway
380	West Ballina	SPAR Local Supermarket	Bypassed	Along existing highway
381	West Ballina	Baits & Tackle	Bypassed	Along existing highway

Upgrading the Pacific Highway – Woolgoolga to Ballina Upgrade

Count	Location	Name or Type of Business	Bypassed?	Position
382	West Ballina	Rug Shop	Bypassed	Along existing highway
383	West Ballina	BWS Bottle Shop	Bypassed	Along existing highway
384	West Ballina	Coffee Shop	Non-bypassed	Along existing highway
385	West Ballina	Motor Registry	Non-bypassed	Along existing highway
386	West Ballina	Hairdressers	Non-bypassed	Along existing highway
387	West Ballina	Newsagency	Non-bypassed	Along existing highway
388	West Ballina	Chemist	Non-bypassed	Along existing highway
389	West Ballina	Book Store	Non-bypassed	Along existing highway
390	West Ballina	Hardware Shop	Non-bypassed	Along existing highway
391	West Ballina	Medical Services	Non-bypassed	Along existing highway
392	West Ballina	Bakery	Non-bypassed	Along existing highway
393	West Ballina	Thai Restaurant	Non-bypassed	Along existing highway
394	West Ballina	Westower Tavan Restaurant	Non-bypassed	Along existing highway
395	West Ballina	Dan Murphy's	Non-bypassed	Along existing highway
396	West Ballina	Hibiscus Gardens Caravan Park	Non-bypassed	Along existing highway
397	West Ballina	Perry Homes	Non-bypassed	Along existing highway
398	West Ballina	Private Car Dealer 1	Non-bypassed	Along existing highway
399	West Ballina	Toyoto Dealer	Non-bypassed	Along existing highway
400	West Ballina	Chapparal Motel	Non-bypassed	Along existing highway
401	West Ballina	Childcare Centre	Non-bypassed	Along existing highway
402	West Ballina	BP Service Station	Non-bypassed	Along existing highway
403	West Ballina	Ford Car Dealer	Non-bypassed	Along existing highway

Upgrading the Pacific Highway – Woolgoolga to Ballina Upgrade

Count	Location	Name or Type of Business	Bypassed?	Position
404	West Ballina	Great Wall Dealer	Non-bypassed	Along existing highway
405	West Ballina	Fun and Sun Motel	Non-bypassed	Along existing highway
406	West Ballina	Luxury Paint Shop	Non-bypassed	Along existing highway
407	West Ballina	Ballina Island Motor Inn	Non-bypassed	Along existing highway
408	West Ballina	SUBARA Dealer	Non-bypassed	Along existing highway
409	West Ballina	Holden Dealer	Non-bypassed	Along existing highway
410	West Ballina	Garden Nursery	Non-bypassed	Along existing highway
411	West Ballina	Used Car Dealer 1	Non-bypassed	Along existing highway
412	West Ballina	Cedas Caravan Park	Non-bypassed	Along existing highway
413	West Ballina	KIA Car Dealer	Non-bypassed	Along existing highway
414	West Ballina	Nissan Car Dealer	Non-bypassed	Along existing highway
415	West Ballina	The Good Guys	Non-bypassed	Along existing highway
416	West Ballina	Fishermen Co-Op / Food Shop	Non-bypassed	Along existing highway
417	West Ballina	McDonald's	Non-bypassed	Along existing highway
418	West Ballina	Ballina Motel	Non-bypassed	Along existing highway
419	West Ballina	RTA	Non-bypassed	Along existing highway
420	West Ballina	Almare Tourist Motel	Non-bypassed	Along existing highway
421	West Ballina	Mobil Service Station	Non-bypassed	Along existing highway
422	West Ballina	Ballina Byron Motor Inn	Non-bypassed	Along existing highway
423	West Ballina	Good Year Auto Centre	Non-bypassed	Along existing highway
424	West Ballina	Tiles Shop 1	Non-bypassed	Along existing highway
425	West Ballina	Private Car Dealer 2	Non-bypassed	Along existing highway

Count	Location	Name or Type of Business	Bypassed?	Position
426	West Ballina	Eggins Prestige Homes	Non-bypassed	Along existing highway
427	West Ballina	GHD Office Consultancy	Non-bypassed	Along existing highway
428	West Ballina	Accountant Services	Non-bypassed	Along existing highway
429	West Ballina	Chinese Restaurant	Non-bypassed	Along existing highway
430	West Ballina	Motor Mechanics	Non-bypassed	Along existing highway
431	West Ballina	Coastal Inn Motel	Non-bypassed	Along existing highway
432	West Ballina	Comfort Inn	Non-bypassed	Along existing highway
433	West Ballina	Fleurs Restaurant	Non-bypassed	Along existing highway
434	West Ballina	Hi-Craft Motel	Non-bypassed	Along existing highway
435	West Ballina	Campervan Sales / Dealer	Non-bypassed	Along existing highway
436	West Ballina	Shoes Shop	Non-bypassed	Along existing highway
437	West Ballina	IT Services	Non-bypassed	Along existing highway
438	West Ballina	Ballina Centre Point Hotel	Non-bypassed	Along existing highway
439	West Ballina	Shell Service Station	Non-bypassed	Along existing highway
440	West Ballina	Sundowner Motor Inn	Non-bypassed	Along existing highway