

# NSW Roads and Maritime Services

## WOOLGOOLGA TO BALLINA | PACIFIC HIGHWAY UPGRADE ENVIRONMENTAL IMPACT STATEMENT

### MAIN VOLUME 1B

#### Chapter 17 – Social and economic

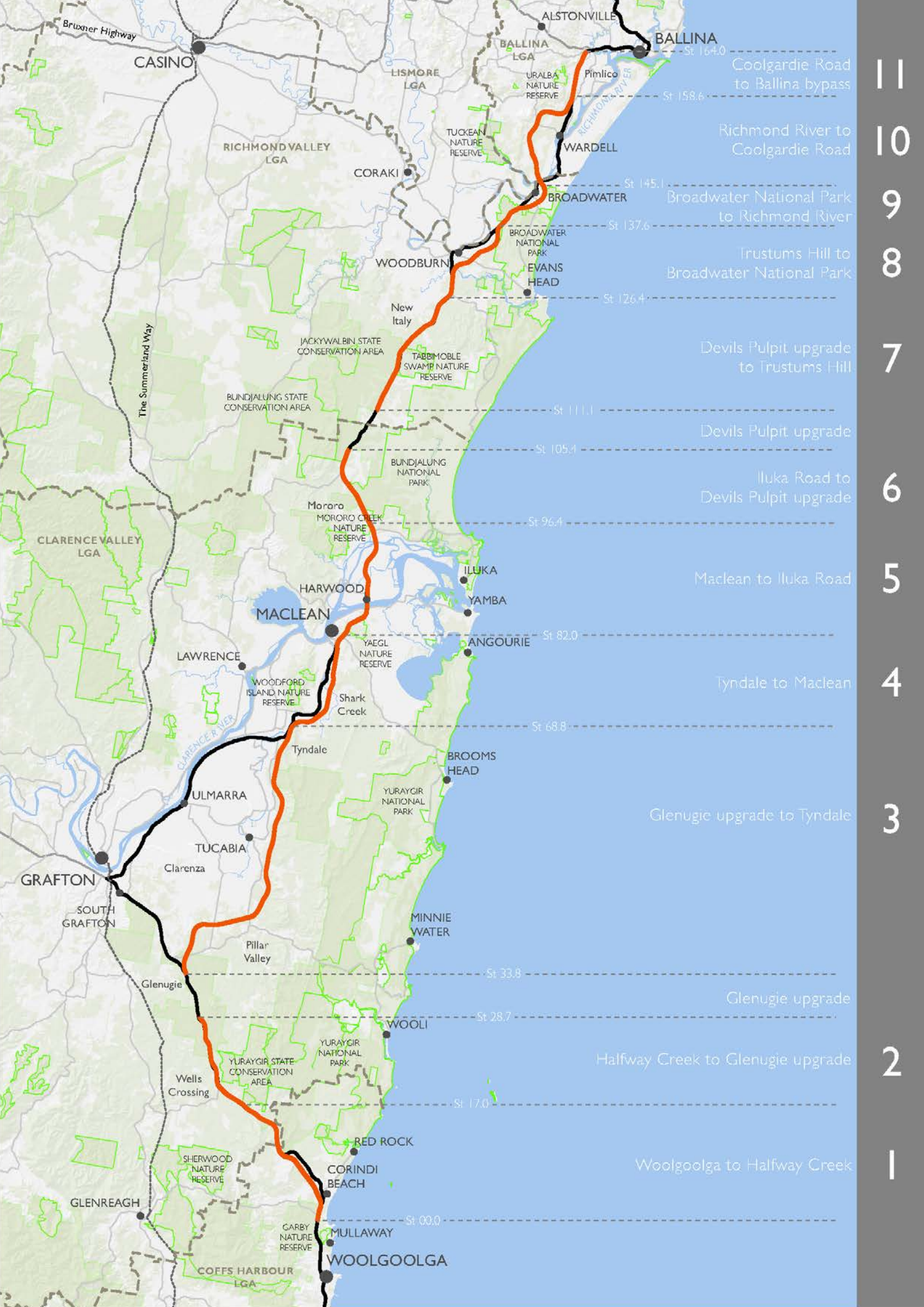
##### Chapter summary

This chapter identifies and assesses the project's socio-economic impacts on local and regional communities. Overall, the project is expected to provide a range of social and economic benefits for local and regional communities, including improved economic prosperity from increased growth and employment opportunities during construction. No planned settlement or activity clusters would be directly affected by the project.

Potential adverse impacts include:

- Potential impacts from construction traffic, noise and dust and increased hazards and travel times for local and long distance road users near road works
- Direct and indirect impact on property, highway-based businesses and agribusinesses through acquisition, access changes and bypass. This could result in a loss of highway related trade, potential impacts on the movement of cattle and farm machinery within farming properties and uncertainty about the timing of property acquisition. The project would acquire quarry land in Tucabia, Broadwater and Bagotville across seven properties
- Loss of around 954 hectares of agricultural land. Affected land uses are mainly cropping (including 319 hectares of sugarcane), grazing and horticulture. Whilst this may be significant to individual farmers, agribusinesses and the local community, less than 0.2 per cent of agricultural land in the region is required so sector impacts are minor when considered as a percentage of land available and regional economic output
- Sixteen highway-based businesses would be directly affected by the project. Impacts on highway-based and highway-related businesses would result from land acquisition, by-passes, changes in access, and reduced passing trade. Impacts on amenity of community facilities from 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 community values relating to rural character and heritage and local amenity, from moving the existing highway nearer communities around Pillar Valley, Tucabia, Coldstream and Gulmarrad.

Early and on-going consultation with affected property owners, businesses and communities is recommended throughout project delivery. Community participation in the on-going project planning, and environmental management would be important in minimising potential impacts.



CASINO

The Summerland Way

RICHMOND VALLEY LGA

CLARENCE VALLEY LGA

GRAFTON

SOUTH GRAFTON

Glenugie

GLENREAGH

TUCABIA

Clarenza

ULMARRA

MACLEAN

HARWOOD

Mororo

BUNDJALUNG STATE CONSERVATION AREA

JACKY WALBIN STATE CONSERVATION AREA

WOODBURN

New Italy

CORAKI

LISMORE LGA

WARDELL

BROADWATER

BROADWATER NATIONAL PARK

EVANS HEAD

TUCKER NATURE RESERVE

TABBIMBLE SWAMP NATURE RESERVE

BUNDJALUNG NATIONAL PARK

MORORO CREEK NATURE RESERVE

YAEGL NATURE RESERVE

Shark Creek

WOODFORD ISLAND NATURE RESERVE

LAWRENCE

ILUKA

YAMBA

ANGOURIE

BROOMS HEAD

MINNIE WATER

WOOLI

RED ROCK

CORINDI BEACH

GARBY NATURE RESERVE

WOOLGOOLGA

COFFS HARBOUR LGA

Coolgardie Road to Ballina bypass

Richmond River to Coolgardie Road

Broadwater National Park to Richmond River

Trustums Hill to Broadwater National Park

Devils Pulpit upgrade to Trustums Hill

Devils Pulpit upgrade

Iluka Road to Devils Pulpit upgrade

Maclean to Iluka Road

Tyndale to Maclean

Glenugie upgrade to Tyndale

Glenugie upgrade

Halfway Creek to Glenugie upgrade

Woolgoolga to Halfway Creek

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# 17 Social and economic

This chapter identifies and assesses the project's socio-economic impacts on local and regional communities. The full assessment is presented in the Working paper – Social and economic (SKM & Aurecon 2012).

Director-General's requirements	Where addressed
Social and economic impacts on local and regional communities (including towns and villages directly impacted by the project and those bypassed by the project)	Section 17.3.2 Section 17.3.3 Section 17.3.6 Section 17.3.7
Impact on highway-based businesses and agribusinesses from traffic, access, property, public domain and amenity related changes	Section 17.3.1 Section 17.3.4 Section 17.3.5 Section 17.3.6 Section 17.3.7 Section 17.3.8
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 17.3.9
Connectivity (including pedestrian and cycleway opportunities) and contiguity of existing and planned settlement and activity clusters	Section 17.3.10
Supplementary Director-General's requirements	Where addressed
A description of long-term and short-term economic and social considerations regarding the project.	Section 17.3 Section 17.4

## 17.1 Assessment methodology

This assessment includes:

- A baseline description of the existing socio-economic environment, including those local government areas, towns and villages that are likely to experience socio-economic changes from the construction and operation of the project
- An assessment of the socio-economic impacts on local and regional communities, both beneficial and adverse, from the construction and operation of the project
- Measures to manage or mitigate the project's adverse socio-economic impacts and to maximise its socio-economic benefits.

The study area for this assessment includes the local government areas of Coffs Harbour, Clarence Valley, Richmond Valley, Lismore and Ballina.

Because there is the potential for the project's construction and/or operation to affect nearby communities and businesses, the study area for the assessment also considers towns and villages near the project. These include Corindi Beach, Red Rock, Grafton, South Grafton, Ulmarra, Tyndale, Harwood, Woodburn, Broadwater and Wardell.

More detailed information on the project's socio-economic impacts is provided in Working paper – Social and economic.

The key steps in this assessment were to:

- Scope the range of potential socio-economic issues
- Describe the existing socio-economic environment
- Identify and assess the potential socio-economic impacts of the project
- Identify measures to manage or mitigate potential impacts and maximise benefits.

These steps are outlined below.

### **Scoping of issues**

This step involved scoping the range of potential socio-economic issues for local and regional communities. This included those issues for communities closest to the project, during both operation and construction. Issues for towns and villages bypassed by the project were also identified. The range of potential issues was informed by:

- The Director General's environmental assessment requirements
- Social and economic assessments undertaken previously for the development phases of the project
- Social and economic impact assessments undertaken for road projects elsewhere
- Previous consultation undertaken for the project.

### **Social and economic baseline**

The description of the existing socio-economic environment provides a baseline of the key characteristics and conditions from which potential impacts can be assessed. Both qualitative and quantitative analysis was undertaken. Key steps were to:

- Review existing State and local government strategies relevant to the socio-economic environment of the study area
- Analyse key population and demographic indicators based on data from the Australian Bureau of Statistics 2006 Census and other Commonwealth, State and local government agencies
- Analyse key characteristics of the local and regional economy, including gross regional product, industry, employment and income, housing costs and dwelling characteristics
- Analyse key characteristics of local and highway-based businesses. This involved visually surveying businesses adjacent to the existing highway and within towns and villages directly impacted or bypassed by the project, and identifying key changes to accessibility and traffic, visibility, operating amenity and public domain that would affect highway-based businesses
- Analyse key characteristics of the agricultural industry and agribusinesses
- Review existing social infrastructure, including services and facilities that support quality of life and wellbeing
- Identify community values relating to, for example, the natural environment, amenity, community health and safety, and local access. This step was informed by local and State government social policies, community consultation, literature reviews, data analysis and observation
- Identify tourist and recreational uses, including tourist destinations and facilities, towns and villages, national parks, State forests and waterways
- Analyse transport and access arrangements, including the local and regional road network, bus transport, and walking and cycling facilities.

The description of the existing environment is presented in Section 17.2.



Photo 1: Woolgoolga town centre and retail strip



## Identification and assessment of social and-economic impacts

The assessment of the project's socio-economic impacts involved an assessment of impacts on local and regional communities, including towns and villages directly impacted or those bypassed by the project. The assessment considered:

- Property impacts, such as property acquisition and impacts on property values
- Changes to the 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
- Changes to local amenity, including positive effects for those towns and villages bypassed by the project and adverse impacts on those communities where the highway would be realigned closer
- 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
- Impacts on highway-based businesses, with regard to the key drivers of profitability, viability, productivity and sustainability
- Impacts on agribusiness, including the impacts of loss of agricultural land
- Impacts on – and opportunities for – tourism and recreation and use of towns and villages, national parks and nature reserves, State forests and waterways due to property acquisition 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.

## Identification of mitigation measures

Measures were identified to enhance the project's benefits and avoid or reduce the impact of the project's construction on local and regional communities. The mitigation and management measures considered:

- Strategies to minimise adverse impacts on local business, industry and tourism
- Opportunities to maximise potential benefits, including for towns and villages bypassed by the project
- Measures to avoid or minimise impacts on amenity, health and wellbeing, and access and connectivity
- Measures to avoid or minimise impacts on local and regional infrastructure.



### 17.1.1 Government strategies

Government strategies relevant to the project are listed in Table 17-1 below.

**Table 17-1: Government strategies reviewed in the study**

Government strategies		Strategy description
Mid North Coast Regional Strategy		The Mid North Coast Regional Strategy (NSW Department of Planning, 2009) establishes the principles for planning and managing the future sustainable growth of the NSW Mid North Coast.
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, and is a guideline for sustainable growth in the region over the next 25 years.
Local government area strategies	Coffs Harbour City Council	The Coffs Harbour 2030 Community Vision contains council's strategy for local government area.
	Clarence Valley Council	The Valley Vision 2020 (2008) is council's corporate strategic plan and articulates the community vision for the future of the Clarence Valley and key strategies to achieve the vision.
	Richmond Valley Council	The Community Strategic Plan 2011/2024 contains council's strategy for Richmond Valley.
	Lismore City Council	The Community Strategic Plan 2008–2018 outlines council's vision for the Lismore region. It is supported by the Lismore City Council Delivery Plan 2010–2014, which outlines the steps to implement the strategic plan.
	Ballina Shire Council	The Ballina Shire <i>Council Community Strategic Plan 2010–2025</i> provides a framework for the development of a more sustainable shire between now and 2025. The <i>Ballina Shire Council Social Plan</i> was released by Council in November 2009, and identifies the issues and needs of groups within the shire and sets out actions for Council.

## 17.2 Existing environment

### 17.2.1 Key socio-economic characteristics

The key socio-economic 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 focus on the Coffs Harbour and Ballina local government areas, which are forecast to account 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 the coming years, with older people forecast to comprise about 30 per

cent or more of each local government area's population apart from the Lismore area, compared to 28 per cent in regional NSW. The higher proportion of older people is likely to contribute to higher levels of people needing assistance in one or more of the core activity areas of self-care, mobility and/or communication. There are varying levels of advantage/disadvantage and economic resources across the study area, with some rural areas displaying levels of relative disadvantage and lower levels of economic resources



**Photo 2: Communities value the natural heritage and lifestyle qualities of the area**

- Communities that value the quality of the natural environment and landscapes as well as the rural character and built and natural heritage of their area. These are key contributors to the region's lifestyle and amenity. Access to good quality road connections and road safety are also key issues for communities particularly as most residents rely on private vehicles to access regional services and facilities
- Communities with access to a wide range of local, district and regional level community services and facilities. The 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 major centres offer regional or district level services and facilities
- A range of industries. Although the study area is dominated by the 'agriculture, forestry and fishing' industry (specifically in the Clarence Valley and Richmond Valley local government areas), other major industries in the region include 'construction' and 'property and business services'. Other rural industries include the extractive and sugar industry. Hard rock quarries in the region are located to the south of Coffs Harbour, Woolgoolga and Grafton and to the north in Casino, Lismore, Ballina and Coraki. Quarries to the north of Woodburn supply basalt, argillite and dolerite rock. In addition, the sugar industry is an important contributor to the economy of the area, providing employment opportunities, up and down stream supply chain benefits, and general trade. The NSW Sugar Milling Co-operative was formed when cane growers purchased three NSW

sugar mills from their previous operator. The mills are located at Condong on the Tweed River, Broadwater on the Richmond River and Harwood on the Clarence River. The Co-operative also operates a sugar refinery which is located alongside the Harwood Mill

- A significant tourist industry. The study area features a range of regional tourist destinations and features, including towns and villages, cultural facilities, touring routes, natural attractions and lookouts. In 2007, about 3.8 million people visited the study area, spending a total of about \$857 million
- Above-average levels of unemployment, particularly in the Clarence Valley and Lismore local government areas where unemployment levels are above the study area's average. 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 working hours resulting from the project
- Household vacancy rates above the region's average in the Clarence Valley, Richmond Valley and Coffs Harbour local government areas. This suggests these areas have a greater capacity to service the demand for housing and accommodation needs of the workforce. A potential consequence of increased demand for accommodation would be higher property values and rents, reflecting growth in demand for real property from increased construction activity
- A dominance of retail businesses along the Pacific Highway. Of those businesses counted during a site inspection, retail accounted for around 43 per cent of all businesses (63 businesses were counted). This was followed by 'accommodation, café and restaurant' businesses, which accounted for around 33 per cent of businesses along the highway (52 businesses were counted). These numbers are based on a site inspection and so the estimates provide a guide only.
- 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 per cent 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.

### 17.2.2 Regional centres, 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 of Working paper – Social and economic.

#### 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**

Grafton 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 Grafton. 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. Around 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
- 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 19<sup>th</sup> century river port and is classified by the National Trust ([www.clarencetourism.com](http://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.



**Photo 3: View of Pacific Highway through Ulmarra village**

## 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.



**Photo 4: View of cane growing adjacent to Pacific Highway through Tyndale**

### **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.



**Photo 5: View of residential areas on Chatsworth Island north of Harwood**



## 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.



**Photo 6: View of Richmond River at Woodburn**

## 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

## 17.3 Assessment of impacts

The construction and operation of the project are expected to have a range of socio-economic impacts, both beneficial and adverse. These impacts are presented below.

### 17.3.1 Property

The project would directly impact, either wholly or partially, about 564 land parcels, and 381 individual land owners. In total, 64 per cent of land acquisitions have commenced (as of September 2012).

Potential socio-economic impacts would include:

- Disruption to social networks and community relationships and increased stress and anxiety associated with property acquisition and potential relocation of households
- 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.

In addition, there would be potential impacts on the movement of cattle and farm machinery between paddocks due to the realignment of sections of the highway. During consultation for the project, this was raised as a concern by some landowners. In particular, issues were raised about barriers to the movement of cattle during floods and general connectivity between agricultural land parcels. RMS is continuing to consult with property owners about potential property impacts, and opportunities to minimise impacts on future development and the use and functioning of rural properties. This is further discussed in the Chapter 16 (Land use and property).

A remnant land use strategy would be applied to parcels of surplus land left over following construction. However, negotiations between RMS and property owners are ongoing as part of the property acquisition program.

### 17.3.2 Population and demography

The project is not expected to significantly impact population and demography in the study area.

#### Construction

During construction, 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
- A temporary increase in non-resident workers to fill employment opportunities provided by construction.

#### Operation

Once the highway is operational, improvements in travel conditions and travel time may attract some people to relocate to the area, leading to population growth.

### 17.3.3 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.

#### Construction

During construction, the regional economy would benefit from:

- Economic stimulus. 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

- Employment opportunities. There would be up to about 4300 direct full-time equivalent workers required to construct the project (at peak times), depending on the project delivery staging.

## Operation

Once the highway is operational, it is expected that there would be:

- An improvement in productivity due to better mobility and connectivity along the highway. Productivity improvements would come about through better matching of people to jobs, improved access to skilled labour, and improved connectivity between suppliers and markets
- A reduction in costs associated with traffic and congestion (such as pollution, noise and vibration)
- Cost savings from reduced travel times and lower vehicle operating costs
- Safety improvements, which would reduce the costs associated with road crashes.

### 17.3.4 Agribusinesses

#### Construction

About 954 hectares of agricultural land would be affected by the project. The loss of agricultural land and agricultural properties may be significant for individual farmers directly impacted and local farming communities. However, regionally, the amount of agricultural land acquired for the project, including regionally significant farmland is considered relatively minor, comprising around 0.2 per cent of total agricultural land in the region (refer to Table 17-2).

#### KEY TERM – Agribusinesses

**Agribusinesses are businesses with a particular reliance on agriculture to sustain their operations including cropping, grazing and horticulture. The sugar cane industry is a prevalent agribusiness type located in the study area.**

The total area of agricultural land affected by the project does not include land temporarily required by ancillary construction facilities. In total, around 363 hectares of land has been identified as potentially required as ancillary sites during construction (ie as compounds, laydown areas, stockpiles, batch plants etc). Of this amount, around 130 hectares of land is within the project boundary, whilst the remaining 233 hectares is outside the project boundary. Of this, around 200 hectares is estimated to be agricultural land, used for grazing, cropping or horticulture.

Consultation with affected land owners would be required to determine the quantity of agricultural land temporarily affected during construction.

The agricultural land in the study area affected by the project (refer to Table 17-2) includes land within Coffs Harbour, Clarence Valley, Richmond Valley, and Ballina local government areas. Agricultural land lost in each of the local government areas would be as follows:

- Coffs Harbour: 54 hectares of land
- Clarence Valley: 598 hectares of land
- Richmond Valley: 161 hectares of land
- Ballina: 140 hectares of land.

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).



A review of properties directly affected by the project identified those agribusinesses likely to be affected by the project. About 148 individual land owners with agricultural interests would be directly affected by the project. These include around 57 land owners undertaking cropping activities (including sugar cane farmers), around 88 land owners with grazing land and three land owners with a mix of horticultural interests. Potential impacts relate to either property severance, demolition of farming infrastructure or changes to access. These issues are discussed in more detail in Chapter 16 (Land use and property).

The direct loss of agricultural land use by crop type from the project is expected to be minor across the study area, resulting in the following agribusiness impacts:

- A loss of around one hectare of irrigated vegetables and herb production. This equates to about 1.8 per cent in the study area
- A loss of around 2.5 hectares of aquaculture. This equates to about 0.7 per cent of area used for this 'crop'/activity in the study area
- A loss of around 320 hectares in sugarcane land use. This equates to about 0.9 per cent of total sugarcane land in the study area
- A loss of around 0.5 hectares the use of vine fruits. This equates to about two per cent of land for this crop in the study area
- A loss of around one hectare in tree nuts (eg macadamias). This equates to about 0.01 per cent of land for this crop in the study area.

Consultation for the project identified sugarcane in particular as an important industry in the study area. The sugar industry has been part of the agri-economy in northern NSW for more than one hundred years. It is a significant contributor to the economy, being one of the region's biggest employers creating around \$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 operates a sugar refinery at Harwood.

Around 320 hectares of sugarcane land are estimated to be directly affected by the project. This compares to around 35,500 hectares of total sugarcane land in the Northern Rivers region of NSW, which extends from the Queensland border to Grafton in the south (NSWSMC 2012). Whilst this is important to those agribusinesses affected and may be significant in particular cases, the amount of land is less than one per cent of the total sugarcane land available in Northern NSW. RMS would consult with affected landowners and agribusinesses as part of the ongoing property acquisition process.

Impacts on regionally significant farmland have been minimised, including where possible, by avoiding farmland and limiting construction works to the project's operational footprint. However, the project would directly affect around 386 hectares of regionally significant farmland. This represents about 0.14 per cent of land identified as regionally significant farmland in the Northern Rivers and Mid-North Coast areas. Whilst important for individual farmers, the local farming community and potentially trade partners, overall, this impact on the agricultural sector equates to a small proportion of the overall land available.

In terms of other agribusinesses, the project would affect a conveyor used by the sugar mill at Broadwater (owned by the NSW Sugar Milling Co-operative Ltd). The Berry Exchange, located at Range Road, Corindi, is a further agribusiness located near the project. This agribusiness raised concerns about potential impacts of the project's construction and operation, as well as impacts of the Berry Exchange's operations on nearby construction activities. For further information, refer to Chapter 16 (Land use and property).

The estimated loss of agricultural land as a proportion of total agricultural land and agribusiness sectors affected by the project in the study area is detailed in Table 17-2.

It should be noted that in Table 17-2, agricultural land use within the Lismore local government area is not affected by the project as the project alignment is not within the LGA boundary but adjacent to it. For the full breakdown of agricultural land impacts, refer to Working paper – Social and economic.

## Operation

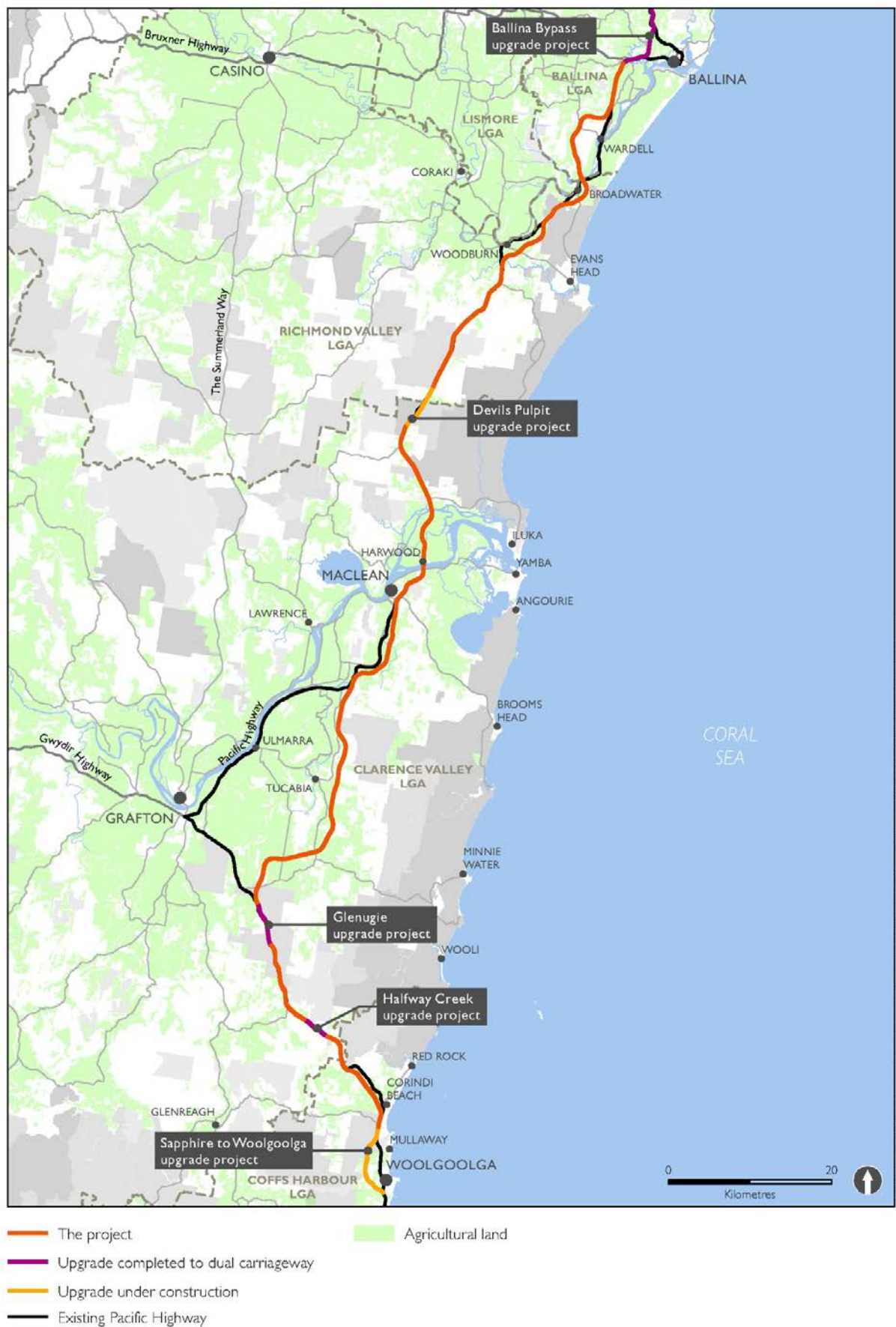
The project would increase the productivity and competitiveness of agricultural businesses that use the highway to transport agricultural produce. In particular, they would benefit from:

- Travel time savings, resulting from increased traffic speeds and/or shorter distances along the highway
- Reduced vehicle operating costs resulting from lower grades and a shorter route where applicable, as well as better road surface conditions
- Crash cost savings, resulting from the reduction in road deaths and injuries and non-injury related accidents (such as property damage).

Figure 17-1 shows agricultural land in the region and Figure 17-2 to Figure 17-12 shows agricultural land that would be directly affected by the project.

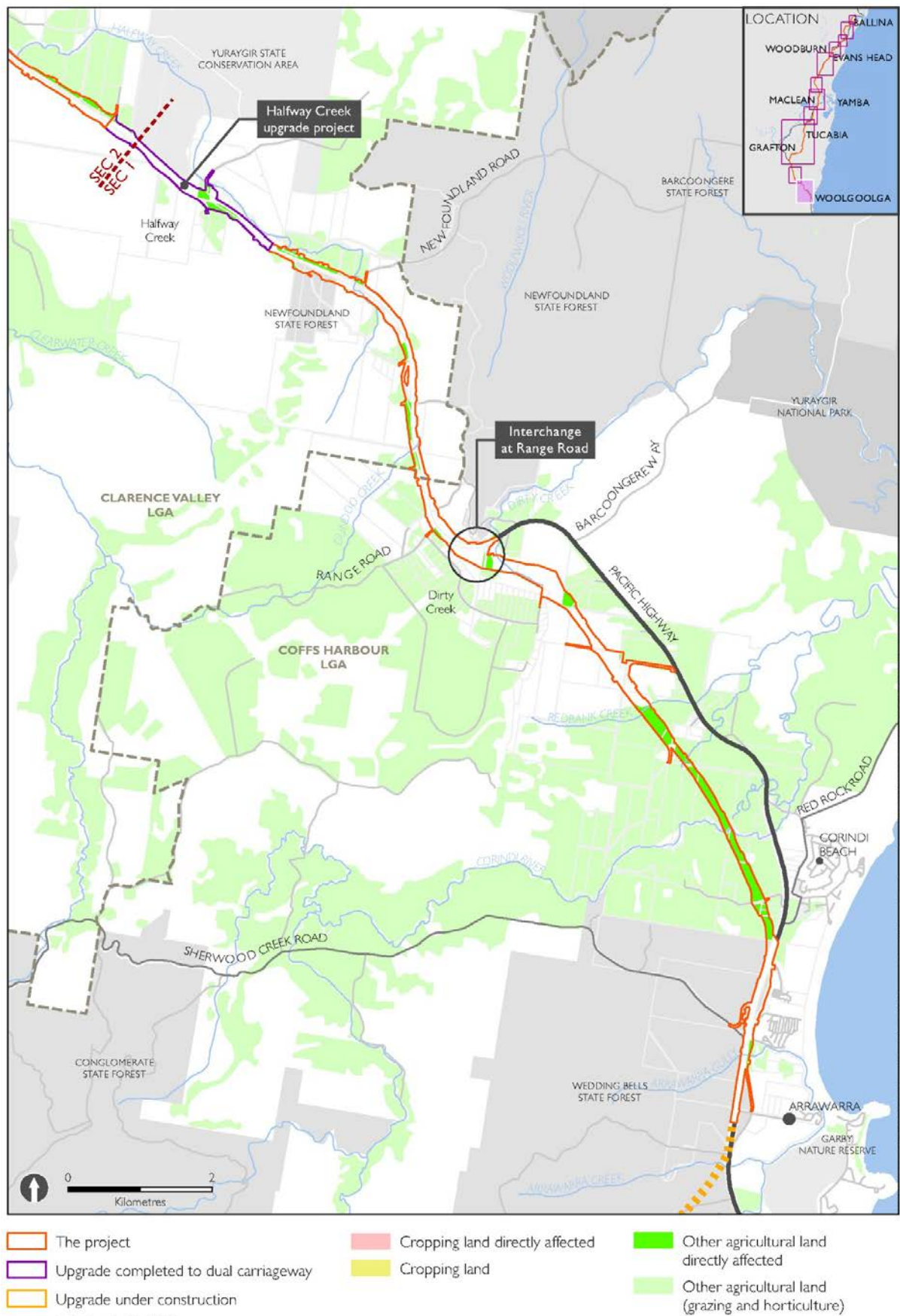
Table 17-2: Estimated loss of agricultural land affected by the project

Land use	Coffs Harbour		Clarence Valley		Richmond Valley		Lismore		Ballina		Total	
	Total area (ha)	Affected area (ha)	Total area (ha)	Affected area (ha)	Total area (ha)	Affected area (ha)	Total area (ha)	Affected area (ha)	Total area (ha)	Affected area (ha)	Total area (ha)	Affected area (ha)
Aquaculture	-	-	321	2	23	-	-	-	7	-	350	2
Hardwood production	378	-	2,711	0.5	964	-	786	-	42	-	4,882	0.5
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	0.5
Pasture mosaic	24,255	45	298,229	365	98,236	110	71,916	-	15,860	88.5	508,497	608.5
Softwood production	0.5	-	783	-	5,233	3.5	16	-	8	-	6,041	3.5
Sugar	-	-	15,637	224	3,798	45	7,970	-	8,247	50.5	35,652	319.5
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	54.5	323,785	598	119,916	161.5	88,687	-	29,519	140	591,772	954



**Figure 17-1: Existing agricultural land in the project study area**



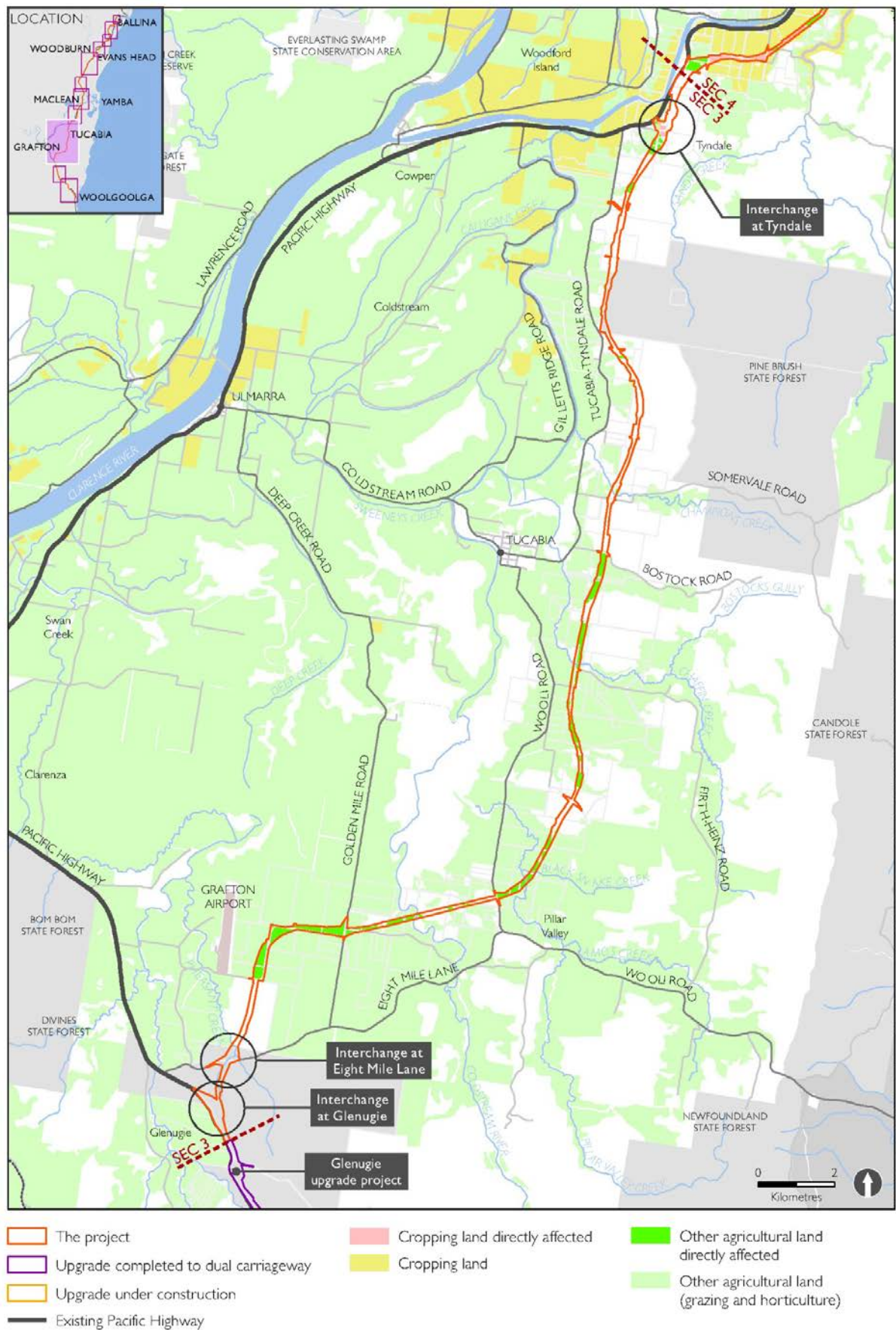


**Figure 17-2: Woolgoolga to Halfway Creek – directly affected agricultural land**

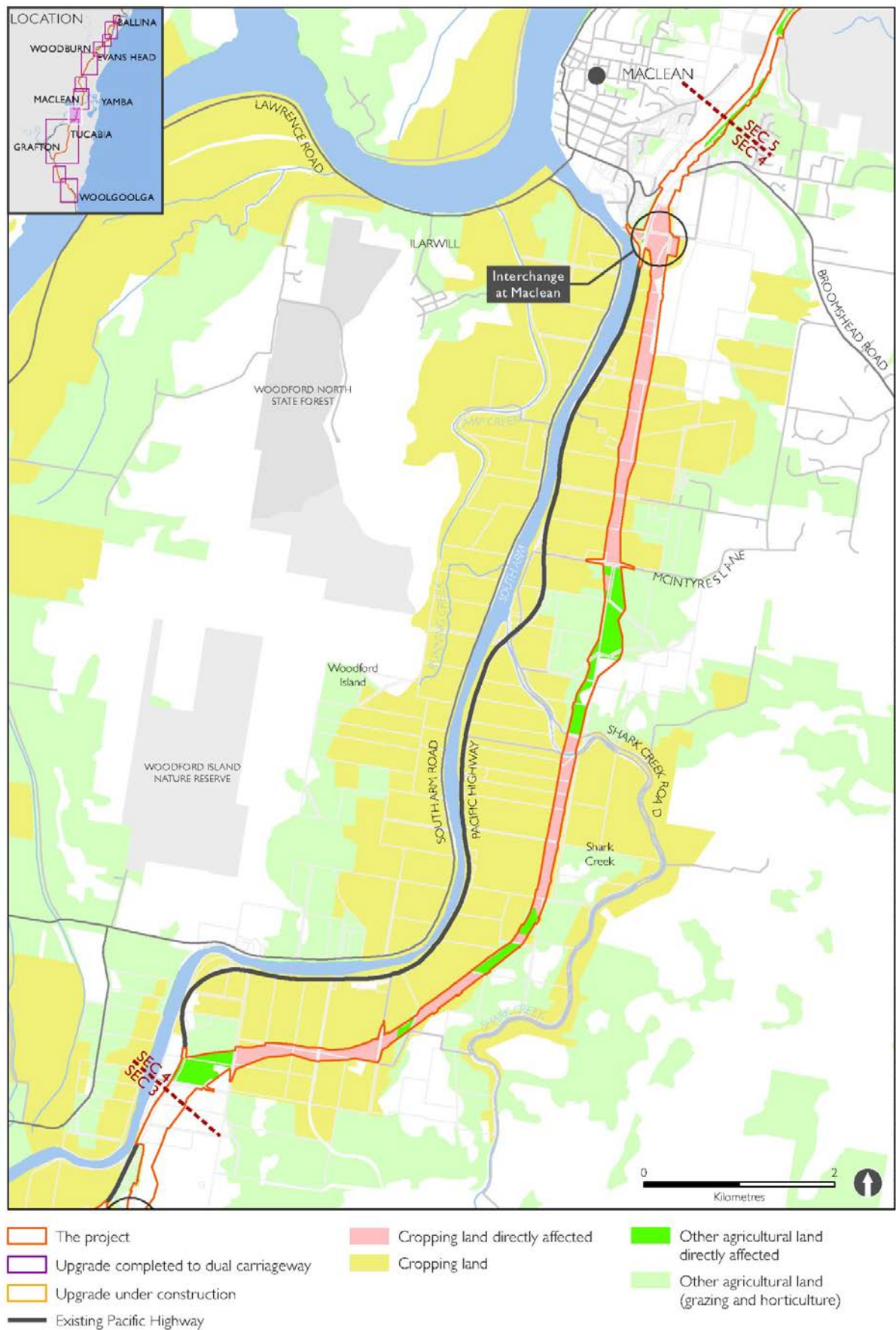


**Figure 17-3: Halfway Creek to Glenugie upgrade– directly affected agricultural land**



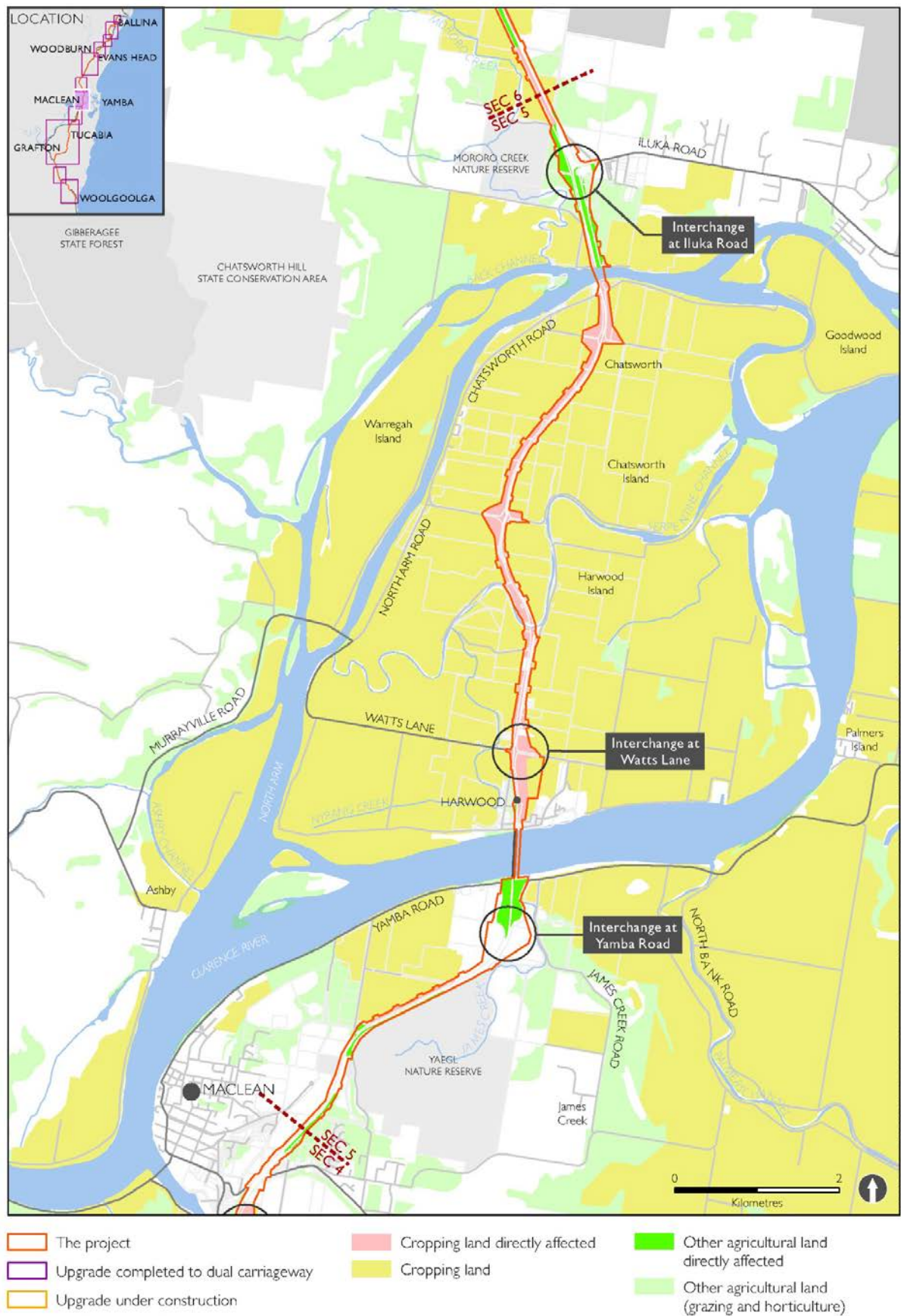


**Figure 17-4: Glenugie upgrade to Tyndale – directly affected agricultural land**



**Figure 17-5: Tyndale to Maclean – directly affected agricultural land**





**Figure 17-6: Maclean to Iluka Road – directly affected agricultural land**



Figure 17-7: Iluka Road to Devils Pulpit upgrade – directly affected agricultural land



**Figure 17-8: Devils Pulpit upgrade to Trustums Hill – directly affected agricultural land**



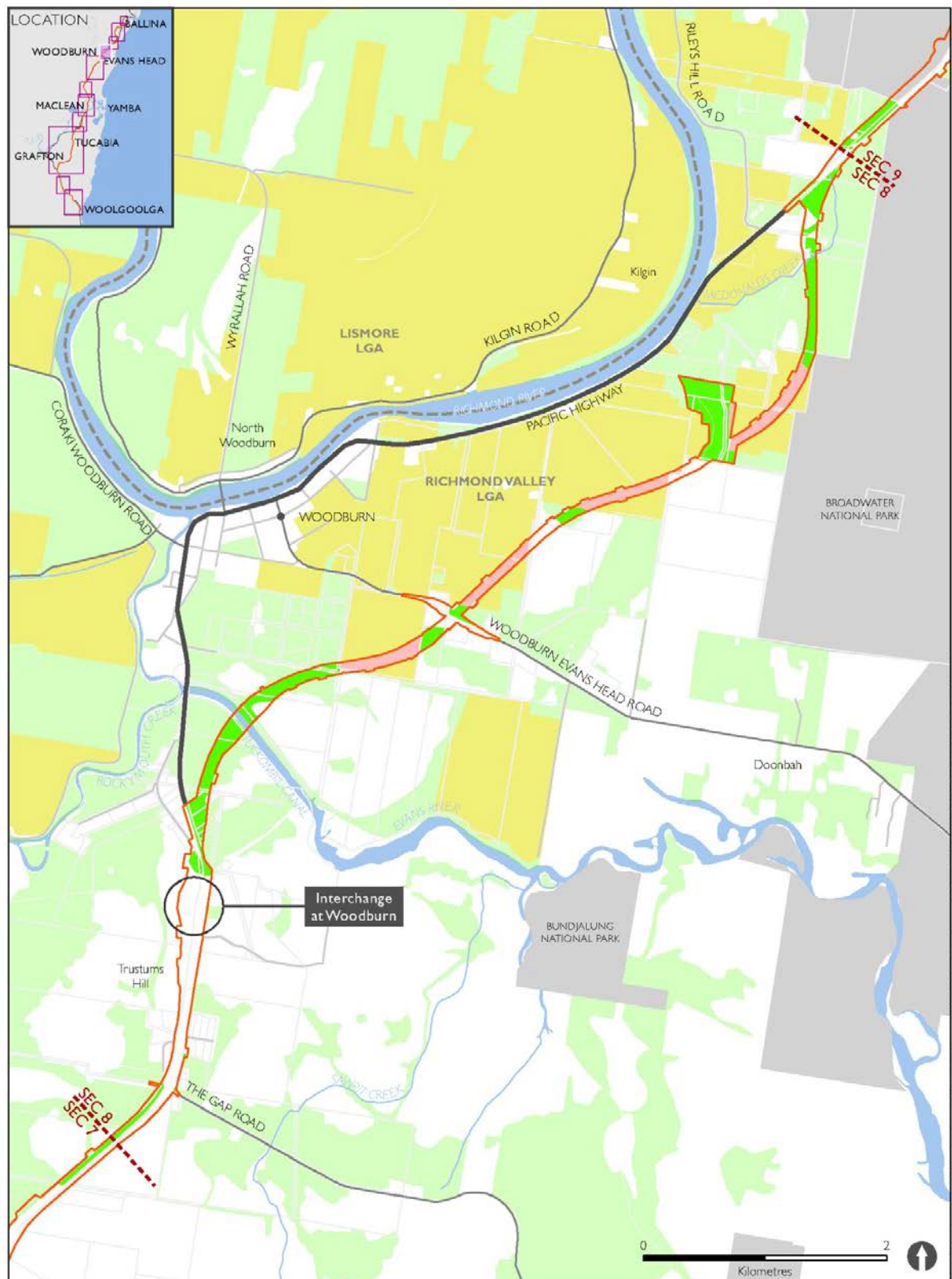
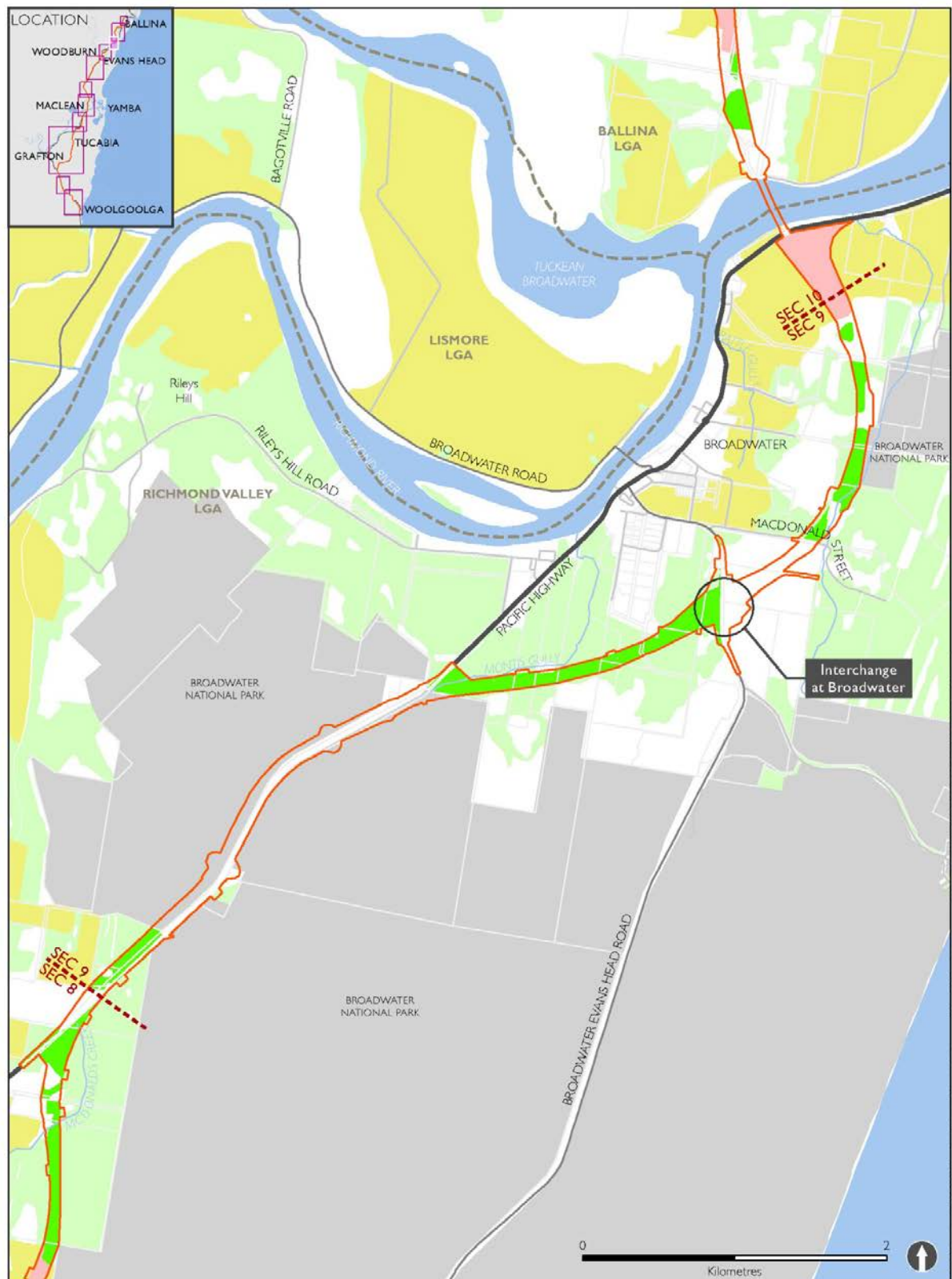


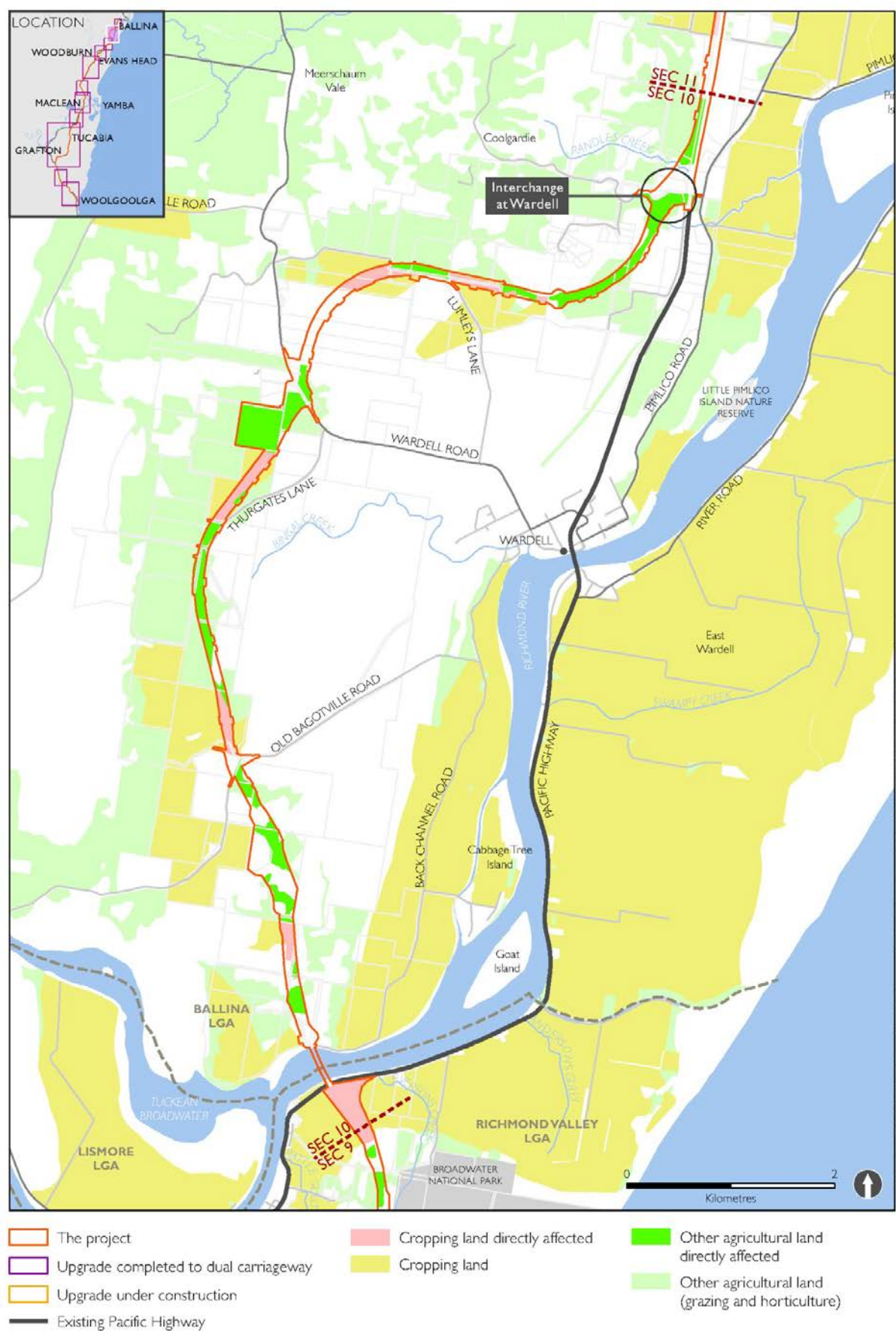
Figure 17-9: Trustums Hill to Broadwater National Park – directly affected agricultural land





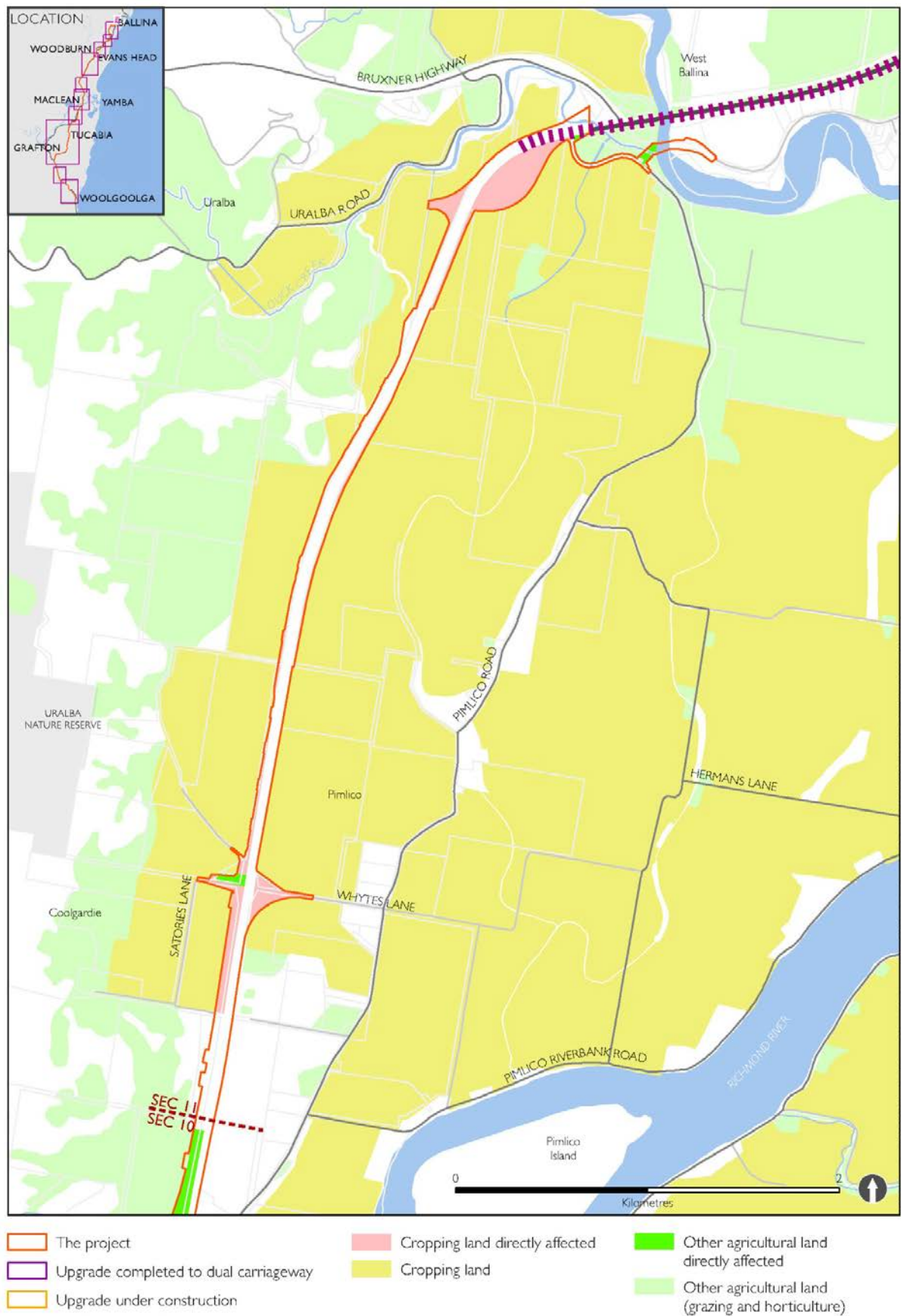
- The project
- Upgrade completed to dual carriageway
- Upgrade under construction
- Existing Pacific Highway
- Cropping land directly affected
- Cropping land
- Other agricultural land directly affected
- Other agricultural land (grazing and horticulture)

**Figure 17-10: Broadwater National Park to Richmond River – directly affected agricultural land**



**Figure 17-11: Richmond River to Coolgardie Road – directly affected agricultural land**





**Figure 17-12: Coolgardie Road to Ballina bypass – directly affected agricultural land**

### 17.3.5 Local businesses, including highway-based businesses

This section describes potential impacts on local businesses, including highway-based, and highway related businesses.

#### **KEY TERM – Highway based businesses**

**Highway-based businesses comprise businesses that are located alongside the existing highway and are dependent on passing traffic for a significant proportion of their trade (eg service stations, accommodation providers, cafes and restaurants).**

Highway related businesses operating in industries that are heavily reliant on transport may benefit from improved connectivity and travel times facilitated by the project. Examples of these industries include agriculture, fisheries, forestry, quarrying, logistics and storage, which are heavily reliant on the efficient running of transport and haulage operations. Conversely, businesses dependent on passing traffic and/or visitor trade, and therefore highway dependent, may be adversely affected by changes in access or reduced passing trade. Business types that may be affected in this manner include retail trade (eg service stations), road-side accommodation providers, cafes and restaurants.

The anticipated impacts of the project on local businesses, including highway-based businesses are described below with regard to the six key drivers of:

- Traffic and accessibility
- Visibility
- Amenity and public domain
- Town size
- Distance to larger towns
- Economic base (ie degree of dependence on highway generated trade).

Anticipated impacts of the project on businesses within each locality are described in Table 17-3. Further information on potential impacts on local businesses, including highway-based businesses, is also discussed in Section 3.5 of Working paper – Socio-economic.

#### **Traffic and accessibility**

The accessibility of a township contributes to the connectivity of shops and local businesses to customers, staff and supplying businesses. 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 as situated on the existing Pacific Highway between Woolgoolga and Ballina around 238 businesses are expected to be bypassed by the project. This comprises around 54 per cent of businesses counted during the business survey.

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 in those towns and villages bypassed by the project may experience decreased traffic flows as less highway traffic 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.

#### **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. Around 156 businesses are located along the existing highway, which comprises about 36 per cent of the total businesses counted.



## Amenity and public domain

Changes in local amenity from noise, air quality and vibration impacts 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 resulting from 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 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. For example, potential improvements in the public domain of those towns bypassed by the project (ie through reduced traffic and traffic noise) may assist in improving the business environment for local businesses in these towns.

## 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).

## Distance and proximity to larger towns

The distance to a larger centre 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. 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).

## Economic base and industry structure

The economic base of each township depends on whether businesses would be able to sustain their operations following a highway bypass. Therefore, the number of highway based businesses that are dependent on passing trade and/or highway 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)
- Highway related businesses (such as accommodation and professional services)
- Non-highway related businesses (such as agriculture and manufacturing).

For the purposes of this assessment, those businesses affected by the project have been discussed in the context of highway-based businesses, and highway-related businesses.

## Construction

During construction, the project would have both positive and adverse impacts on the profitability and viability of businesses across the region. Much of this benefit would result from the increase in employment and the influx of construction workers, who would purchase goods and services within and near the study area.

Construction would benefit local business in the following ways:

- Businesses in localities close to construction zones could be expected to benefit most in relation to increased spending from construction workers. 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 major regional centres suggests they would continue to be a destination of choice for highway and local traffic
- Local construction contractors would directly benefit most from construction activity across all locations
- Businesses likely to gain indirect benefits from construction expenditure and workforce activity include retail, accommodation, cafes and restaurants, and property and business services.



Photo 7: View of Pacific Highway at Woodburn

Construction may also have the following adverse impacts on local businesses:

- Whilst businesses along the project are expected to benefit from increased spending, they would also be most affected from the effects of reduced accessibility, increased traffic disruptions, poorer visibility and a loss in the quality of the operating environment. The localities likely to experience these effects most acutely include Wells Crossing, Harwood and New Italy. Other businesses that are not along the existing highway may also experience temporary disruptions resulting from heavy haulage trucks
- 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
- Potential impacts on fisheries in the Richmond and Clarence rivers including the estuary prawn trawl fishery, estuary general fishery, trap and line fishery, through potential changes in water quality
- It is estimated that at least 16 businesses located adjacent to the existing highway would be directly impacted through property acquisition, the potential need to relocate, severance of properties, changes to access, and demolition of buildings. The businesses and associated impacts include:
  - Two caravan parks at Arrawarra - strip acquisition of land adjacent to the existing Pacific Highway at the Lorikeet Tourist Park, and Darlington Beach Holiday Park
  - Two service stations at Halfway Creek (including one former service station) - total acquisition of service station, and potential strip acquisition of land associated with the former service station
  - Rose Farm at Halfway Creek - potential acquisition of land adjacent to the existing Pacific Highway, and associated impacts from the operation of the highway (eg traffic, noise)
  - Transport depot north of Harwood - total acquisition of transport / haulage depot
  - Commercial machinery shed off McIntyres Lane, Gulmarrad: acquisition of land including storage building
  - Museum at New Italy - strip acquisition of land adjacent to the existing Pacific Highway, and modification to highway access, and parking. Informal parking arrangement would be formalised as part of the project
  - Sugar mill infrastructure at Broadwater - land acquisition and protection works required to an over-head conveyor passing over the project.
  - Commercial quarries at Tucabia, Broadwater and Bagotville - this would require land acquisition and the cessation of quarrying activities as described below.

## Quarries

The project would require 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 due to a change in land use from quarry uses to transport corridor. However, where property acquisition affects part of the property only and the project does not impact on that area of land used for quarry operations, the quarry would continue to operate. Figure 17-15, Figure 17-16 and Figure 17-17 show the impact on quarry land near Tucabia, Broadwater and Bagotville. For the majority of these impacts, the extractive areas remain largely unaffected in places. Exceptions to this include the quarry operating to the east of Pine Tree at station 144.5 and the south-west of Montis Road at station 149.0. These properties appear to be used for sand extraction.



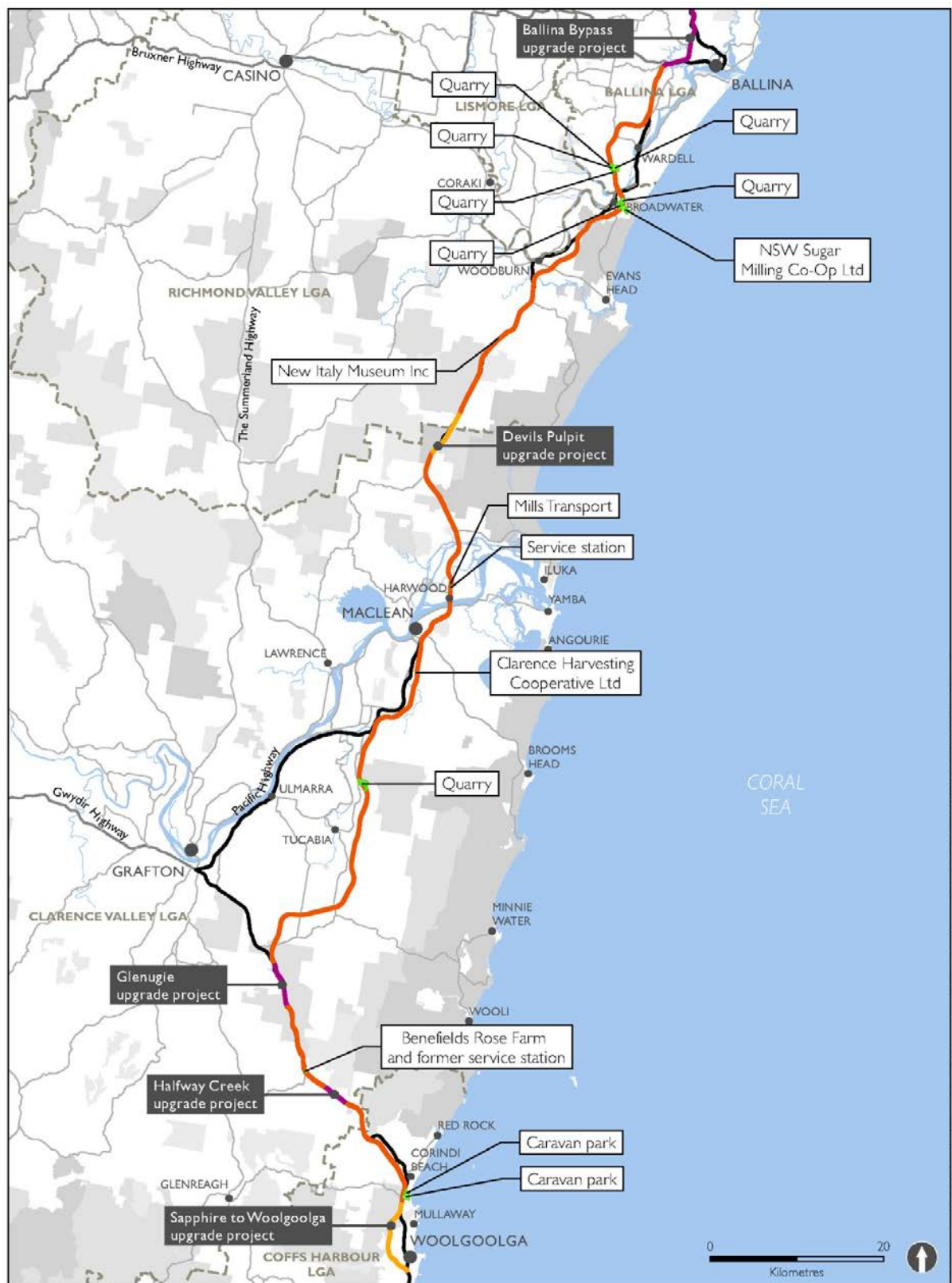
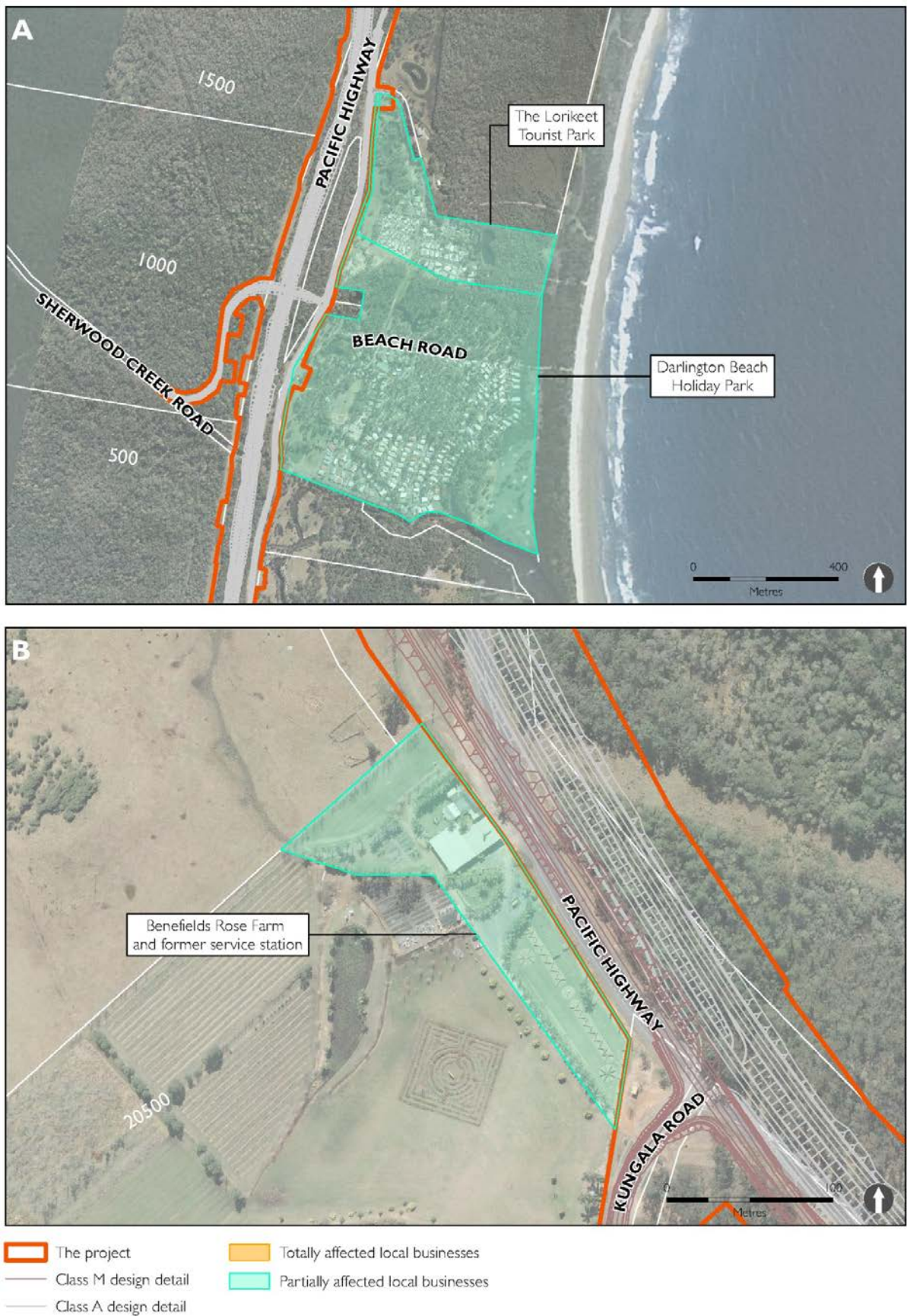


Figure 17-13: Overview of local businesses directly affected by the project





**Figure 17-14: Inset of local businesses directly affected by the project (A-B)**



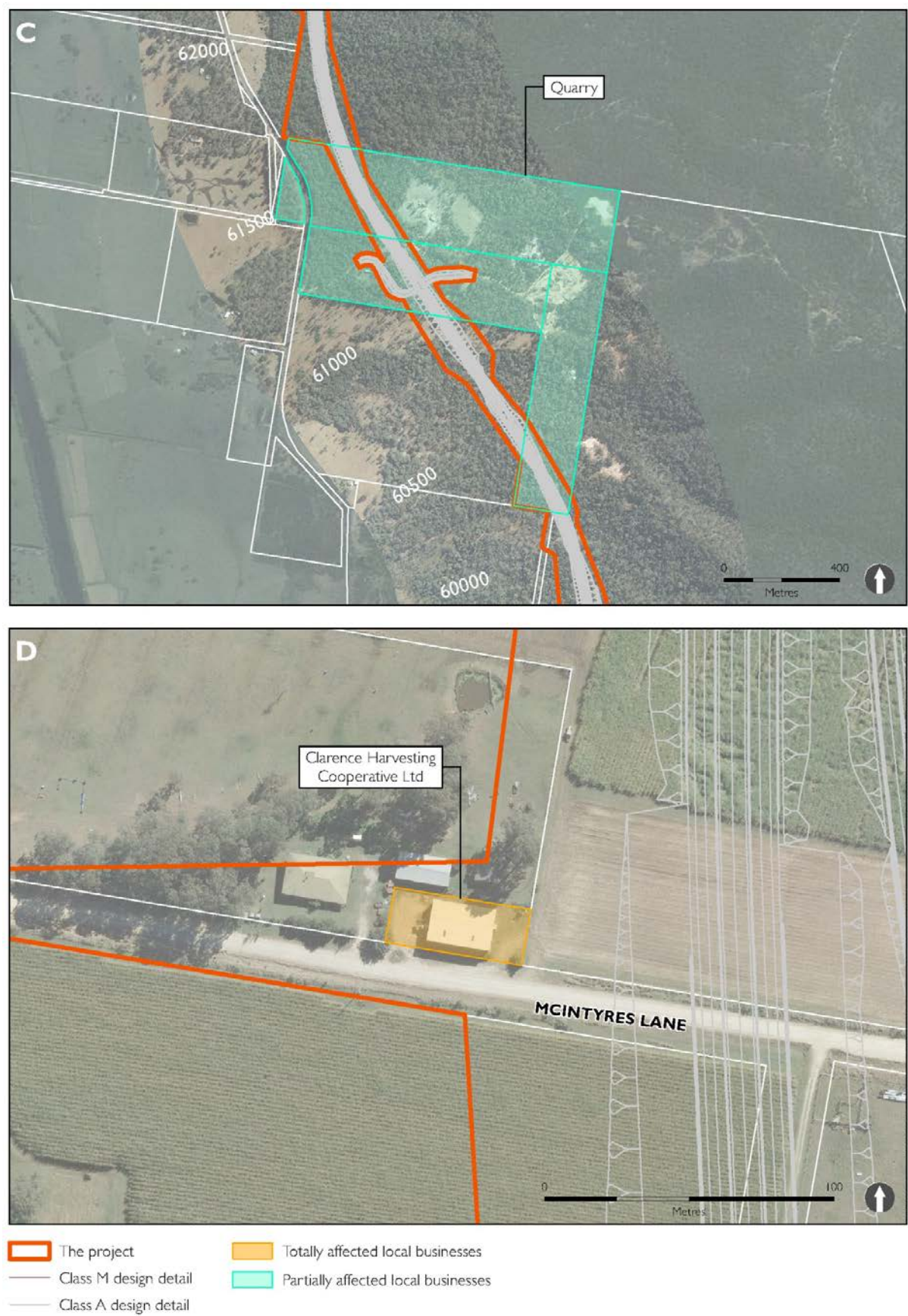
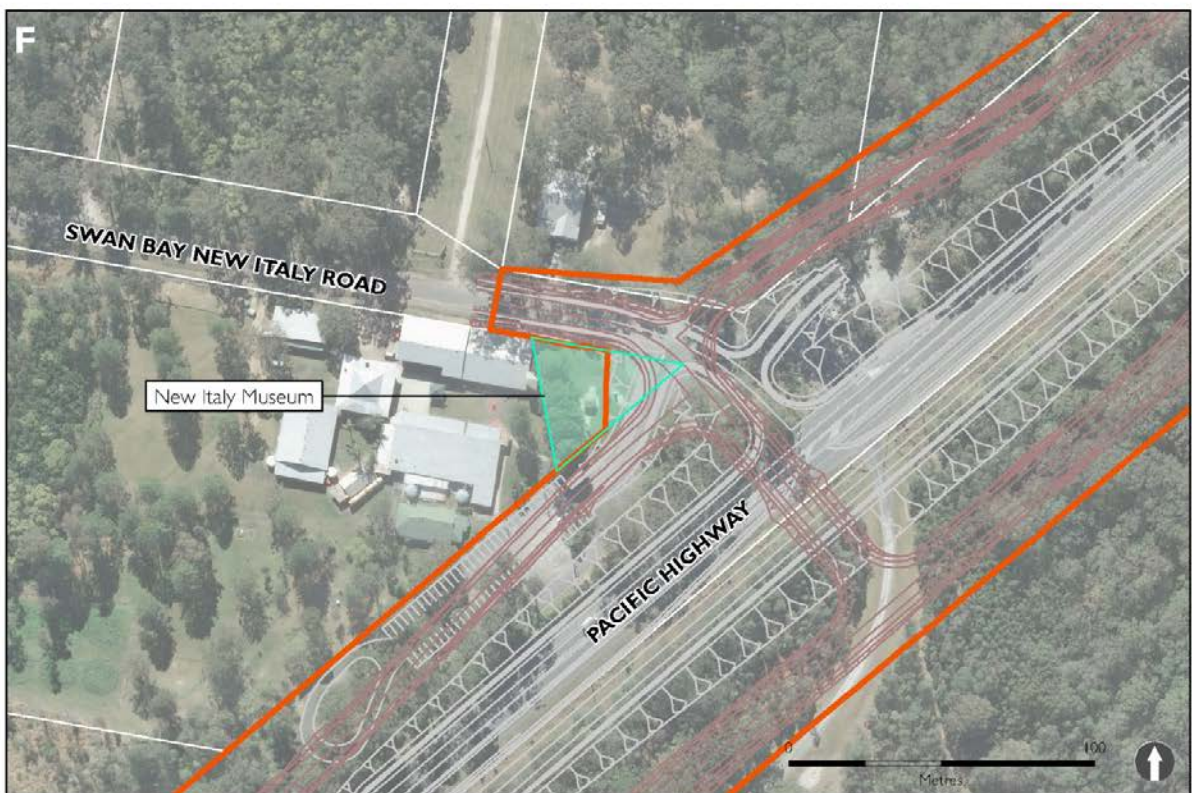
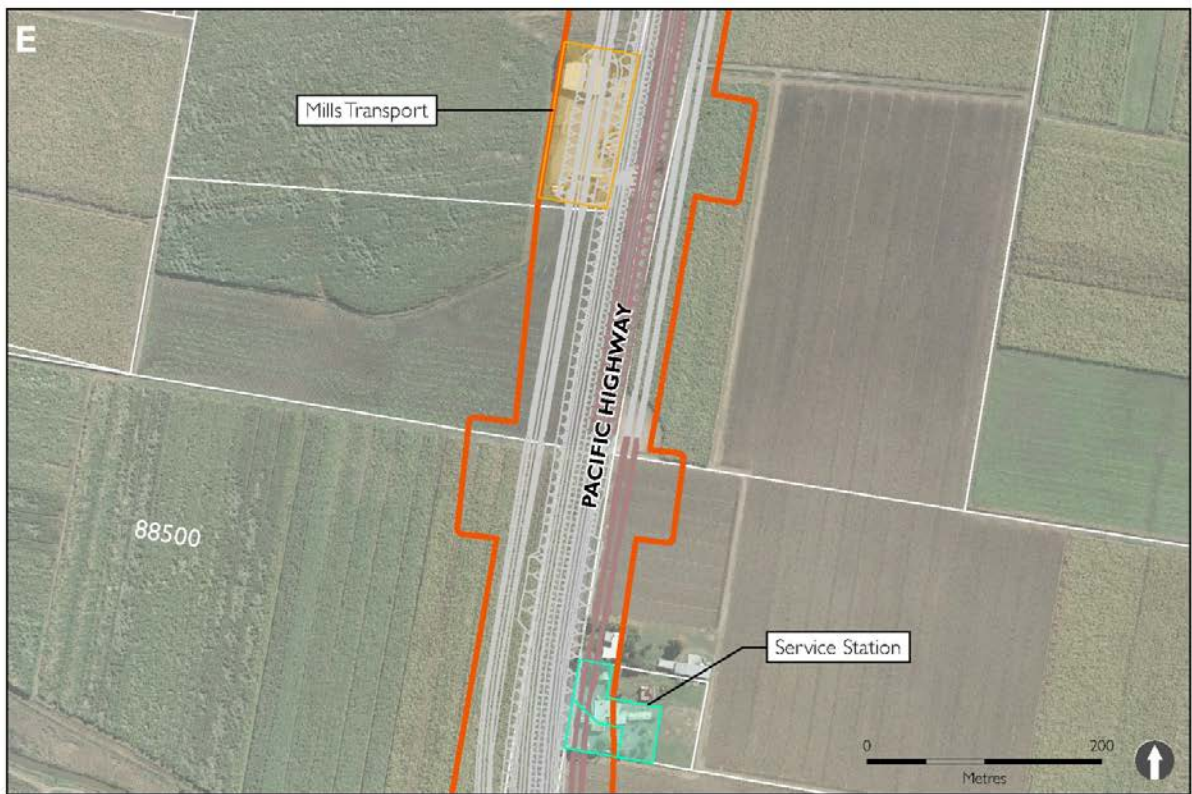


Figure 17-15: Inset of local businesses directly affected by the project (C-D)

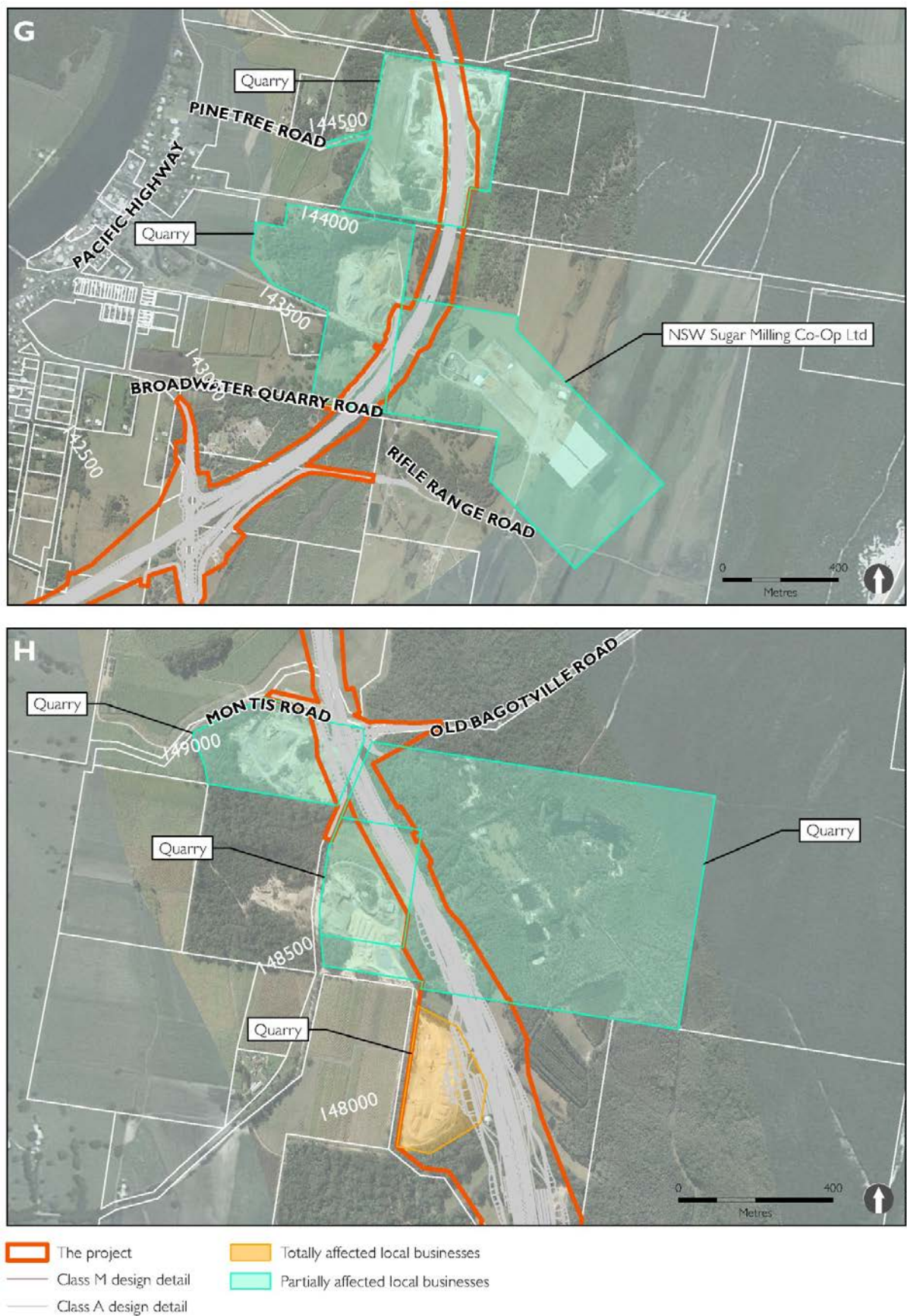




- The project
- Totally affected local businesses
- Partially affected local businesses
- Class M design detail
- Class A design detail

**Figure 17-16: Inset of local businesses directly affected by the project (E-F)**





**Figure 17-17: Inset of local businesses directly affected by the project (G-H)**

While the loss of properties used for quarry purposes is significant for directly impacted quarry operators, given the number of operational quarries across the NSW North Coast region, the impact on the overall industry from the loss of these quarries is expected to be manageable. Consultation between RMS and quarry operators would inform future access arrangements for those quarries able to continue operating. Similarly, further consultation would inform an estimate of the quantity of extractive material that would be lost or sterilised by the project. 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. For further information, refer to Working paper – Land use and property. The locations of local businesses directly or potentially affected by the project are shown in Figure 17-13 to Figure 17-17.

## Operation

The operation of the project is likely to have a number of long-term positive impacts on local businesses in the study area, including highway based businesses. 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 the local and regional economy. Locally, business in towns and villages not bypassed by the project could also be expected to benefit from improved journey times of passing travellers as their willingness to stop and purchase goods and services may improve.

Business localities bypassed by the realigned highway include Grafton, South Grafton, Ulmarra, Woodburn, Broadwater and Wardell. The operation of the upgraded highway is expected to generate negative impacts for some business due to the diversion of traffic volumes away from these localities. In particular:

- The loss in passing trade to businesses in locations bypassed by the realigned highway 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
- Highway based businesses 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.

Impacts from the project on highway-based businesses, highway related businesses and non-highway based businesses are further described in Table 17-3.





**Photo 8: View of Pacific Highway into Broadwater**



**Table 17-3: Impacts on local businesses including highway based business**

Location	Local businesses	Summary of impacts
Corindi Beach	Accommodation, cafes and restaurants Agriculture, forestry and fishing Retail trade	<p>With the upgrade, Corindi Beach would be further from the highway alignment. Businesses may be affected by a loss of trade due to a decline in passing traffic. However, the amenity for residents and businesses may potentially improve due to a decline in passing traffic and associated traffic noise and vibration, which may improve the business environment of this location.</p> <p>Corindi Beach is relatively close to Coffs Harbour (35 km away), so customers from Coffs Harbour could continue to frequent cafes, restaurants and retail outlets at Corindi Beach.</p> <p>About 29% of businesses surveyed are traffic dependent, 28% are highway related and 43% are non-highway related.</p> <p>Non-highway based businesses would not be directly impacted, as they would continue to service patrons needing their goods and services.</p> <p>Highway based businesses 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.</p> <p>Overall, businesses at Corindi Beach are expected to continue servicing residents. However, those businesses reliant on traffic for trade may experience minor reductions in demand.</p>
Corindi Beach and South Grafton (representing existing highway in the Wells Crossing area)	Construction Wholesale trade Personal and other services Manufacturing Retail trade Accommodation, cafes and restaurants	<p>The accessibility, visibility and amenity of businesses at Wells Crossing is not expected to change significantly due to the project.</p> <p>It is expected that highway-based businesses at Wells Crossing on the existing Pacific Highway, such as service stations and eateries (Hungry Jacks, McDonalds and motels), would continue to service a similar level of passing traffic .</p> <p>About 29% of businesses surveyed are traffic dependent, 50% are highway related and 21% are non-highway related. These businesses are likely to experience minimal effects given the project alignment would not detract passing traffic.</p>

Location	Local businesses	Summary of impacts
South Grafton	Retail trade Manufacturing Accommodation, cafes and restaurants Finance and insurance Health and community services Transport and storage Personal and other services	<p>Customer accessibility and through traffic is likely to decline due to South Grafton being directly bypassed. This would impact on highway-based businesses such as service stations and café related eateries.</p> <p>About 30% of businesses surveyed are traffic dependent, 56% are highway related and 14% are non-highway related.</p> <p>Traffic-related businesses (eg retail stores and food eateries) and non-traffic-related businesses (eg finance, health and community industries) are not expected to be affected by the project, as they will continue to provide goods and services to the community.</p> <p>The operating amenity of businesses adjacent to the existing highway would improve as a result of reduced traffic and associated noise and vibrations from heavy vehicles. Those businesses unrelated to traffic are expected to be largely unaffected as they would continue to provide goods and services to the local community.</p> <p>The population base is expected to be large enough to maintain trade as the expected decline in passing trade would be partially offset by the large customer base living in the community (ie 5932 people).</p> <p>Overall, the close proximity of South Grafton to the major town centre of Grafton (2.6 kilometres away) 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.</p>
Grafton	Retail trade Accommodation, cafes and restaurants Finance and insurance Property and business services Health and community services Cultural and recreational services Personal and other services	<p>Access to Grafton for traffic using the realigned Pacific Highway would potentially be reduced. This may 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.</p> <p>The reduction in accessibility would benefit Grafton as a whole due to reduced vehicle congestion, noise, air pollution and vibration. This would improve amenity for the local community and businesses such as outdoor cafes.</p> <p>Grafton is already bypassed by the existing highway. Combined with a large population (9955 people) to support the commerce and activity of local businesses, and the town's large proportion of non-traffic-related businesses, it is not expected that the project would have a notable impact on businesses.</p> <p>Overall, the impact of the project at Grafton is expected to be confined to highway-based businesses. However, the economic welfare of these businesses is likely to be sustained by demand from the large town population, as well as the continued use of the existing highway as a service road.</p>

Location	Local businesses	Summary of impacts
Ulmarra	Accommodation, cafes and restaurants Retail trade Agriculture, forestry and fishing Health and community services Education	<p>The proximity of the town to Grafton is expected to help minimise impacts on those highway-based businesses dependent on passing trade and highway access. It could be expected that a proportion of visitors would continue to travel to and from Grafton, and continue to use services at Ulmarra.</p> <p>The reduced number of passing vehicles would assist businesses in terms of improved amenity. Businesses such as cafes and bed-and-breakfast outlets would benefit from a more serene environment.</p> <p>Traffic-dependent businesses stand to be adversely impacted by the project. It is possible some of these businesses may relocate to new premises and/or establish similar businesses within the region.</p> <p>On the whole, the majority of businesses at Ulmarra would continue to serve local residents in addition to visitors from Grafton. However, businesses that primarily depend on passing traffic for commerce are likely to experience potential losses of trade due to the realignment of the highway.</p>
Tucabia	Agriculture, forestry and fishing Retail trade	<p>The project would not change access to Tucabia; residents and visitors would continue to access Tucabia via the existing highway.</p> <p>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.</p> <p>The project is not expected to adversely impact either of the two businesses in Tucabia. One business is a farm, which would continue to be operational. The other is a service station, which is likely to service local residents.</p>
Tyndale	Accommodation, cafes and restaurants Retail trade	<p>Accessibility to and from Tyndale is expected to be unchanged, with similar levels of access under the existing and new highway arrangements.</p> <p>The visibility of the locality would also be similar to the existing situation, while the operating amenity for businesses at Tyndale would be unaffected.</p> <p>Tyndale is relatively close to Grafton (31 kilometres) suggesting existing patrons will 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 businesses (eg the motel/caravan park) are not expected to be affected by the project.</p> <p>Overall, it is likely that neither of the two businesses at Tyndale would be adversely affected as a result of the project's operation.</p>



Location	Local businesses	Summary of impacts
Maclean	Agriculture, forestry and fishing Wholesale trade Retail trade ( Accommodation, cafes and restaurants Transport and storage Communication services Finance and insurance Property and business services Health and community services Cultural and recreational services Personal and other services	<p>Maclean is currently bypassed by the existing highway, so it is unlikely that accessibility, visibility and the quality of the operating amenity within the town centre would be affected by the project, given the current and proposed alignments are similar.</p> <p>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 highway related (65%) and would continue to serve local customers.</p> <p>Traffic-dependent businesses comprise only 3% of total businesses. Of these, 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% of businesses, are expected to be unaffected and would continue to serve local customers.</p> <p>Overall, it is expected that local businesses in Maclean would largely continue to operate on a business-as-usual basis.</p>
Harwood	Agriculture, forestry and fishing Wholesale trade Manufacturing Retail trade Accommodation, cafes and restaurants Transport and storage	<p>Access to Harwood for passing traffic is likely to be 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.</p> <p>Businesses in Harwood are likely to depend on highway traffic as the primary source of their business. The survey of local businesses identified 14 per cent of businesses are highway-based. However, they should remain viable through the continued movement of traffic throughout Harwood.</p> <p>The project would directly impact the United service station located north of the Harwood interchange, with the business being acquired for the project.</p> <p>Traffic-related businesses comprise about 29% of businesses in Harwood and are likely to continue providing goods and services to the local community. The remaining non-traffic-related businesses (57%) would continue to operate on a business-as-usual basis.</p> <p>Overall, it is unlikely that the project would have adverse effects on businesses at Harwood, and the viability and sustainability of these businesses would continue to be maintained.</p>

Location	Local businesses	Summary of impacts
New Italy	Retail trade Accommodation, cafes and restaurants Health and community services	<p>Accessibility to New Italy would not change under the arterial upgrade, with access provided via the intersection of the Pacific Highway with New-Italy Swan Bay Road. The visibility and operating amenity of local businesses are unlikely to be affected under this arrangement.</p> <p>However, under the motorway standard upgrade, entry to and from New Italy would be via a service road 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.</p> <p>No businesses at New Italy are categorised as traffic dependent, although 83% are highway related. These businesses would continue to service visitors to the museum complex, which is primarily a tourist destination. Overall, businesses of New Italy are expected to continue to cater for tourist-related traffic, rather than interstate traffic. The implementation of the arterial highway is likely to cause minimal disruptions for visitors. When upgraded to a motorway standard highway, businesses are likely to experience a reduction in passing trade, but would continue to service their tourist-focused customer base.</p>
Woodburn	Construction Retail trade Accommodation, cafes and restaurants Transport and storage Communication services Finance and insurance Health and community services Cultural and recreational services Personal and other services	<p>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. At the same time, the project would assist in improving the operating amenity of the township, through reduced noise, vibration and disturbance from heavy vehicles. This would have potential benefits for non-traffic-related businesses, as well as traffic-dependent businesses due to a more serene environment.</p> <p>Because of Woodburn's size (618 people), and its close proximity to the major regional centre of Ballina (36 km away) it is likely that traffic-related businesses (73% of businesses), would continue to sustain their trade by servicing local residents.</p> <p>Traffic-dependent businesses (4% of businesses), are expected to experience a reduction in interstate trade. Non-traffic-related businesses (23%) are also expected to continue operations irrespective of the project and would provide services to local residents independently of the project's operation.</p> <p>Overall, traffic-dependent and traffic-related businesses 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 community.</p>

Location	Local businesses	Summary of impacts
Broadwater	Mining Wholesale trade Retail trade Accommodation, cafes and restaurants Transport and storage Cultural and recreational services Personal and other services	<p>It is expected that the project would reduce accessibility and visibility, which would decrease passing traffic to the detriment of traffic-dependent businesses. However, it is expected that the operating amenity of businesses would improve</p> <p>Broadwater has two service stations, which are traffic dependent. Both businesses are likely to experience a reduction in trade. The remaining businesses within Broadwater are highway related (56%) and non-highway related (32%).</p> <p>The sugar mill is not expected to be affected by the project. All else being equal, sugar mill operations would continue to provide local residents and supporting industries with an industrial base for commerce and economic activity</p> <p>Although two traffic-dependent businesses are expected to be adversely affected, the close proximity of Ballina (25 km away) and the size of the local population provide a basis for sustained demand for goods and services.</p>
Wardell	Wholesale trade Accommodation, cafes and restaurants Transport and storage Education Health and community services Retail trade	<p>Wardell is directly bypassed as a result of the project, reducing accessibility for customers and visitors</p> <p>Non-highway related businesses (46 per cent) and highway related businesses (46 per cent) are expected to benefit from improved operating amenity, particularly cafes and restaurants</p> <p>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 use other services that can lead to commerce within Wardell</p> <p>Highway related businesses comprising accommodation and eateries and non-highway related businesses would continue to service the population irrespective of the new alignment</p> <p>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.</p>



### 17.3.6 Community values

#### Construction

During construction, the project would have the following impacts on community values:

- The widening or realignment of the highway and construction of new bridge crossings over the Clarence and Richmond rivers would cause loss of vegetation and loss or fragmentation of habitat for fauna species
- Changes in local access and connectivity during construction would result in disruptions and delays for motorists and other road users.

#### Operation

Once operating, the project would have the following effects on community values:

- The project would improve the health and safety of pedestrians and road users in towns bypassed by the project
- There is potential for both beneficial and adverse effects on 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 (for example within Section 3 between Glenugie and Tyndale). However, the project is likely to improve the amenity and character of bypassed towns.

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.

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.

### 17.3.7 Local amenity and public domain

#### Construction

During construction, there may be potential impacts on the amenity of communities near construction works due to:

- Construction noise and dust
- Changes to local character
- Noise and dust associated with the haulage of materials and equipment away from construction work sites.

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.

#### Operation

During operation, potential changes to local amenity would result from realigning the highway either further from or closer to local communities, houses or businesses. Where the project bypasses towns or localities, the reduced traffic volumes would help to improve local amenity by reducing traffic noise, improving air quality and enhancing pedestrian amenity and safety. Conversely, where the project moves closer to individual properties or communities, local amenity would be adversely impacted by increased road traffic noise and changes in visual amenity.

The effect of the project on local amenity is detailed in Table 17-4.



**Photo 9: Pacific Highway routing through Woodburn town**

Table 17-4: Impacts on local amenity

Project section	Summary of impacts
1	<p>In Section 1, the upgrade would involve realigning the highway between Eggins Close, south of Corindi Beach, and Dirty Creek. This is likely to:</p> <ul style="list-style-type: none"> <li>Improve local amenity at communities and properties located adjacent to the existing highway, including at Corindi and Corindi Beach</li> <li>Potentially affect the amenity of residents located west of the existing highway, due to movement of the highway closer to their houses (some houses would be located within about 100–200 m of the proposed highway). Overall, this impact is expected to be limited given the sparse settlement pattern</li> <li>Have a minimal effect on a small number of houses near the proposed interchange at Range Road (near Dirty Creek). Existing vegetation would provide a buffer between the interchange and the nearest houses, which would help to minimise potential impacts of lighting on night-time amenity</li> <li>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 proximity of the hall to the existing highway</li> </ul> <p>North of the proposed interchange at Range Road, near Corindi, the proposed highway would generally follow the existing highway alignment, with widening west of the existing highway. This would result in a number of houses being located closer to the proposed highway. This may impact on the amenity of residents, but impacts are likely to be minimal given their current location in relation to the highway.</p>
2	<p>In Section 2, the upgrade would involve duplicating the existing highway, with a deviation to the east from the existing alignment within the Newfoundland State Forest to Franklin Road</p> <p>This 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. The project would have a minimal effect on the amenity of residents of these houses</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 or amenity of this facility.</p>
3	<p>Section 3 involves a new highway alignment east of the existing highway between the Glenugie upgrade and Tyndale. This is a 35 km stretch of realigned 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 help to improve pedestrian amenity and safety within these towns and villages. The realignment of the highway away from facilities such as the schools would help to enhance safety and amenity for students</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, from 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 night-time amenity may occur at these houses due to an increase in lighting of the interchange as well as noise from vehicles accessing or exiting the highway</p> <p>The realignment 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>



Project section	Summary of impacts
4	<p>In Section 4, the upgrade would involve realigning the highway east of its existing alignment. This would:</p> <ul style="list-style-type: none"> <li>• Improve environmental and visual amenity for residents adjacent to the existing highway by decreasing noise, improving air quality and improving visual amenity</li> <li>• Potentially affect the amenity at some houses that would be located closer to the highway or other major roads. This includes a number of rural residential properties near Gulmarrad.</li> </ul>
5	<p>In Section 5, the upgrade involves duplication and widening the highway, generally following the existing alignment, including through the village of Harwood. This section includes a new bridge over the Clarence River at Harwood</p> <p>Widening 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 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</p> <p>The bridge over the Clarence River at Harwood would have a vertical clearance over the water of about 30 metres. The road level would be about 12 metres below the top of the towers on the existing bridge. This is likely to change the visual outlook from properties in Harwood and the surrounding area, particularly those located in the eastern part of Harwood, adjacent to the river. There are likely to be disruption and potential amenity impacts during construction of the bridge due to its size, build duration and the proximity of the required construction compound to the village and school. The proposed bridge over the Clarence River would be located near Harwood Island 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> <p>Widening the highway may also have impacts on amenity at houses near the highway in other parts of this section. This includes houses south of the Yamba Road interchange and south of the interchange at Iluka Road. However, amenity at these properties is currently affected by the highway and any changes to existing amenity as a result of the upgrade are expected to be minimal</p> <p>Impacts on amenity may also be experienced at houses near the proposed interchanges at Watts Lane and Iluka Road, including from increased lighting and noise from vehicles accelerating and decelerating.</p>
6	<p>Section 6 generally involves duplication of the existing highway.</p> <p>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 at these properties is currently affected by the highway and any changes to existing amenity as a result of the upgrade are expected to be minimal.</p>
7	<p>In Section 7, the upgrade involves duplication of the highway, generally to the west.</p> <p>This area mainly comprises State forest and national park land 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. Widening of the highway would directly impact on a small portion of land currently accommodating the New Italy Museum.</p> <p>The project may have amenity impacts on residents and communities where the highway would be widened. However, the amenity at these properties is currently affected by the highway and any changes to existing amenity are expected to be minimal.</p>

Project section	Summary of impacts
8	<p>Section 8 involves realigning the highway east to bypass Woodburn.</p> <p>Bypassing 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>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 affect the amenity of 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 interchange at Woodburn would be located away from residences, which would help to minimise potential impacts on amenity.</p>
9	<p>Section 9 involves duplicating the existing highway through the Broadwater National Park and then realigning the highway east of Broadwater. 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 from increased traffic noise, particularly at night-time when existing background 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 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	<p>Section 10 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 would be constructed 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>Realigning the highway would result in the highway being located closer to houses on rural properties at Wardell Road, Tuckombil Mountain Road and Bagotville Road at Meerschaum Vale as well as houses at Coolgardie, where properties are currently unaffected by the highway. This would impact on the amenity of these residents due to increased traffic noise from the highway, particularly at night 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 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 15 metres to 20 metres high. Its vertical clearance over the water would be about 15 metres. This may impact on the visual amenity from nearby properties, particularly those adjacent to the river near the existing bridge.</p>
11	<p>Section 11 generally involves duplicating 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>

### 17.3.8 Social infrastructure

#### Construction

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 to access.

#### Operation

The project would:

- Improve access to regional centres
- Improve access to regional and district-level community services and facilities for local residents and visitors
- 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 to access and/or amenity. However, these facilities would be able to continue to operate.

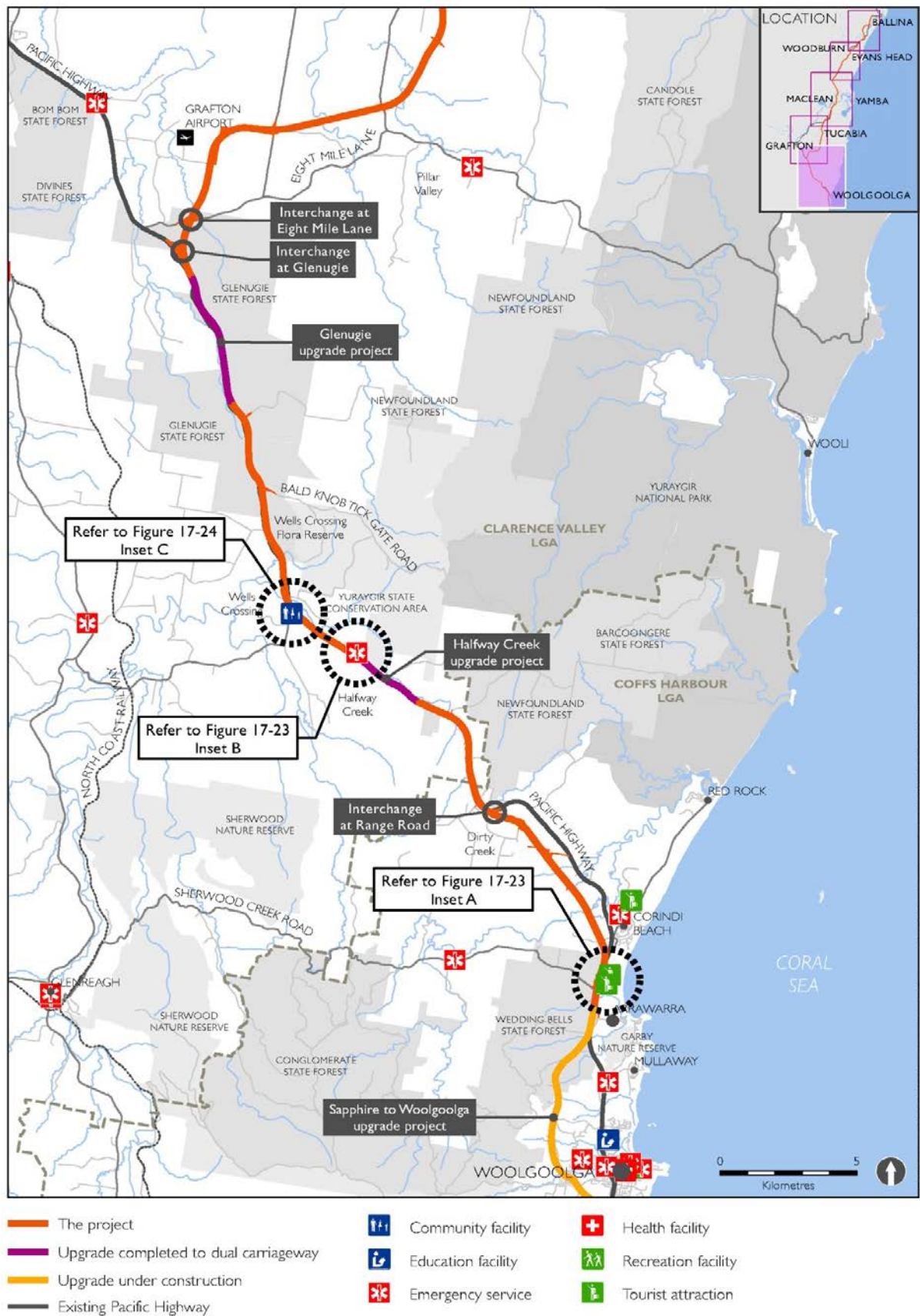
There are no known social housing properties directly impacted by the project.

Figure 17-18 to Figure 17-26 show social infrastructure and facilities within and near the project. An overview of impacts on social infrastructure along the route is presented in Table 17-5.

#### KEY TERM 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, including services and facilities that support quality of life and well-being local. They include local, district and regional level community services and facilities.**





**Figure 17-18: Overview of social infrastructure and facilities (Woolgoolga to Glenugie)**

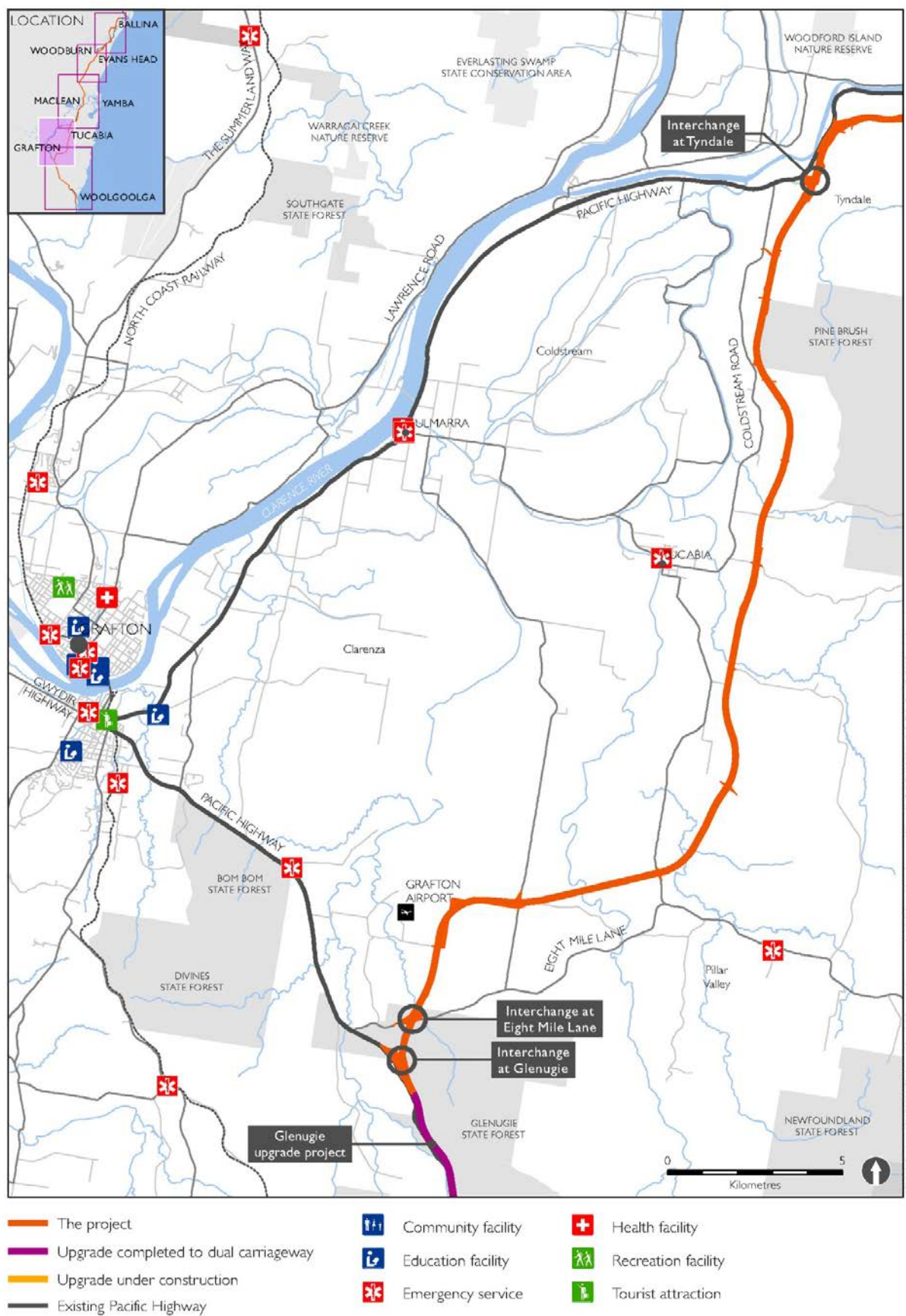
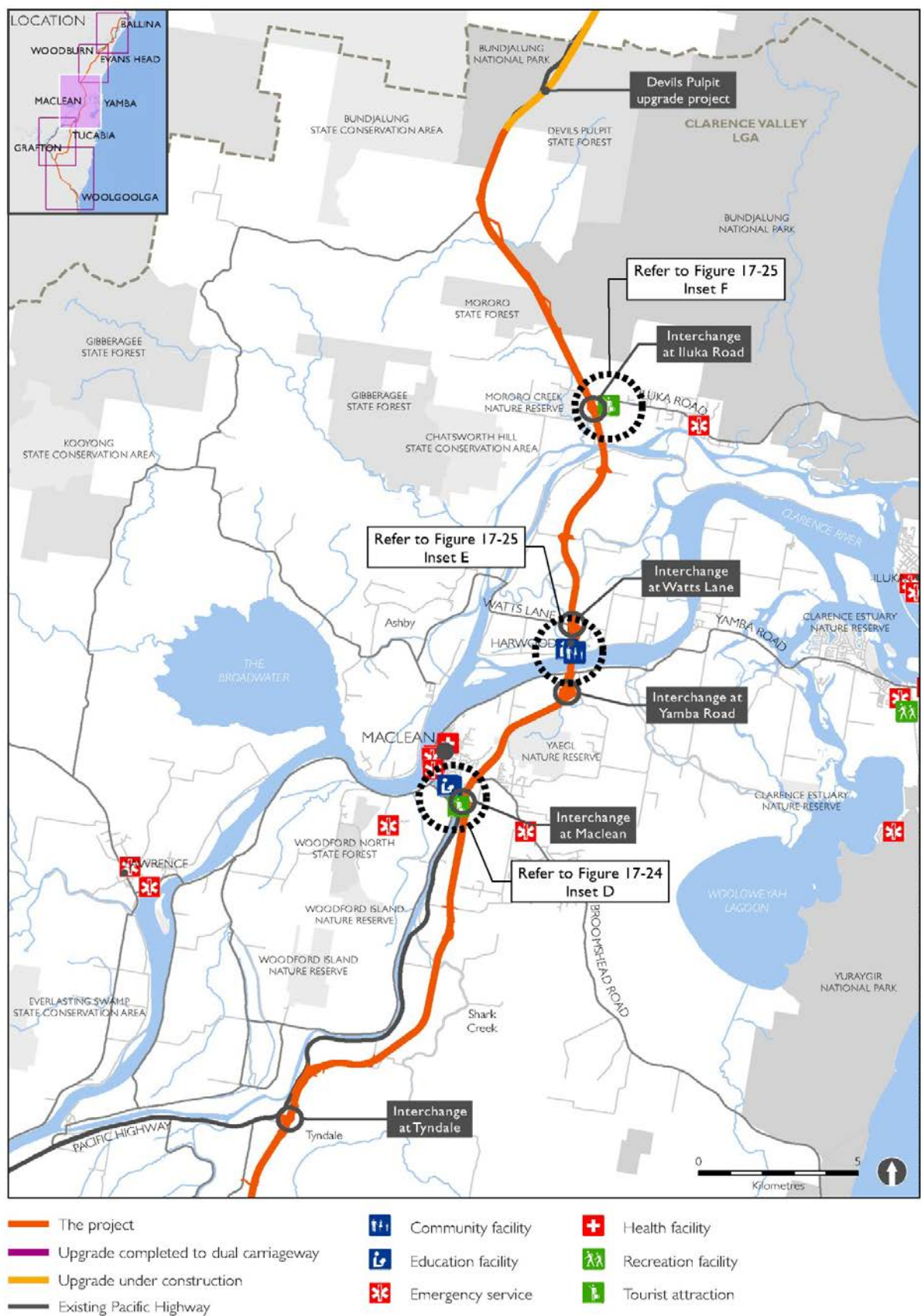


Figure 17-19: Overview of social infrastructure and facilities (Glenugie to Tyndale)



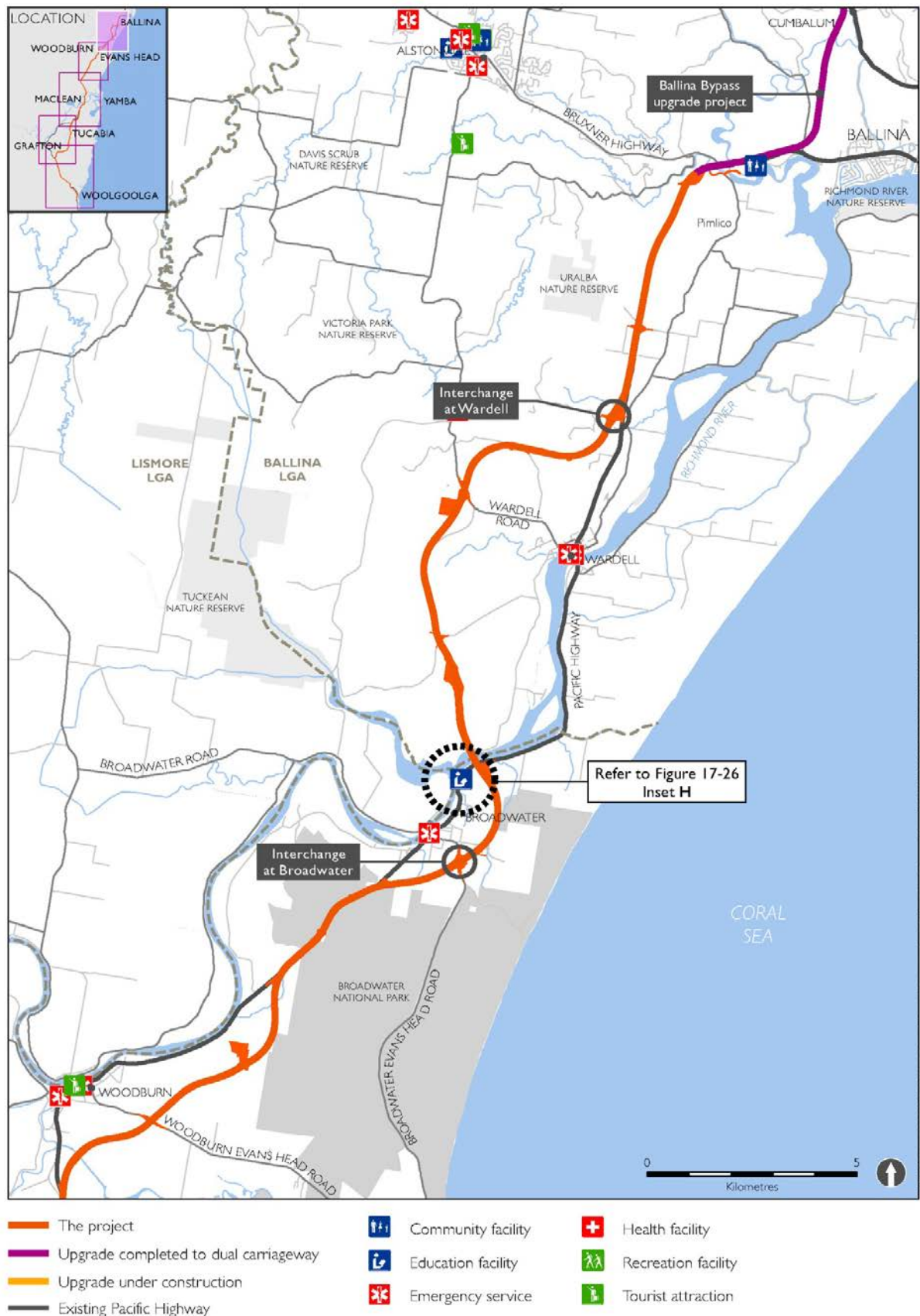


**Figure 17-20: Overview of social infrastructure and facilities (Tyndale to Devils Pulpit)**



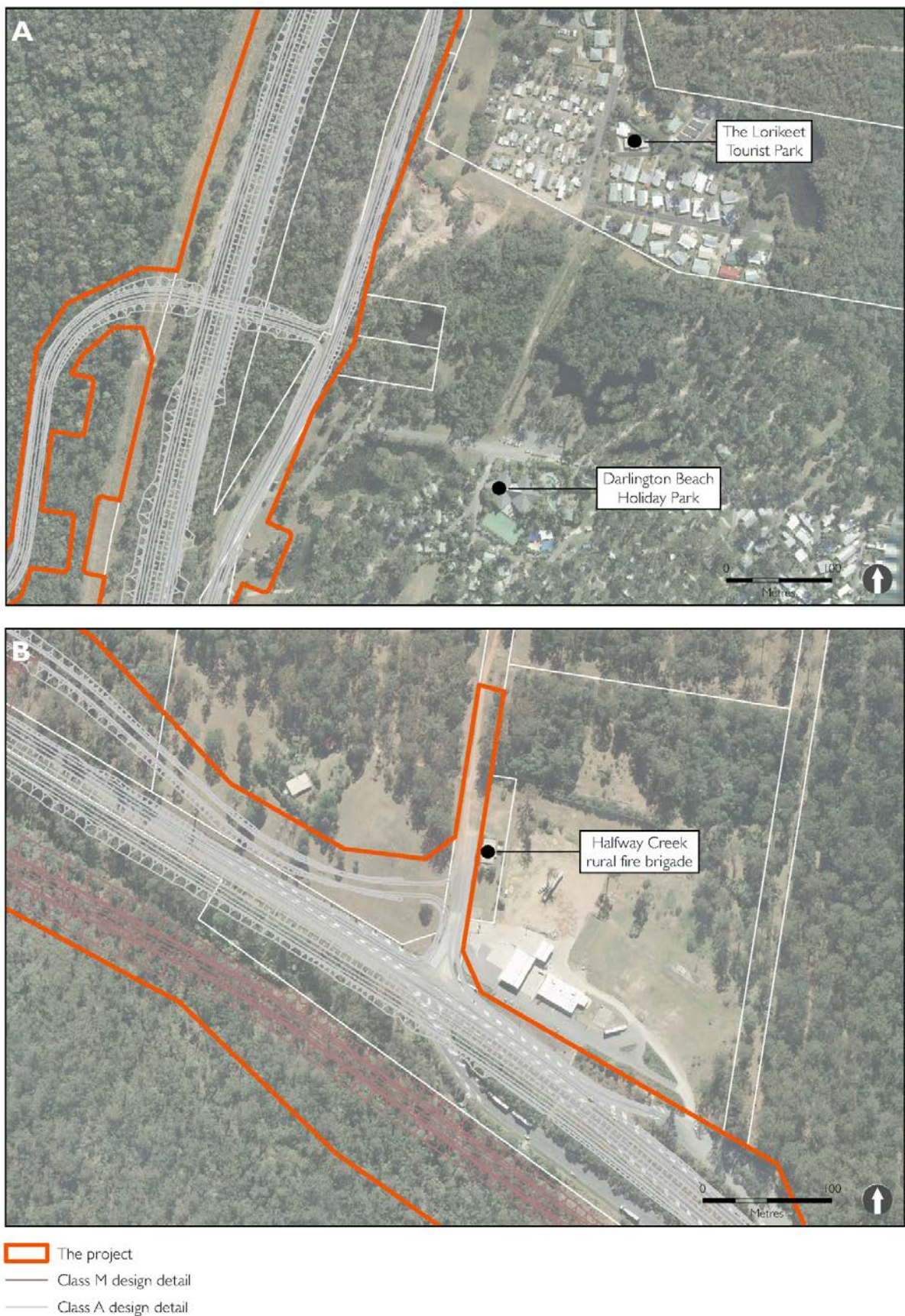


Figure 17-21: Overview of social infrastructure and facilities (Devils Pulpit to Woodburn)



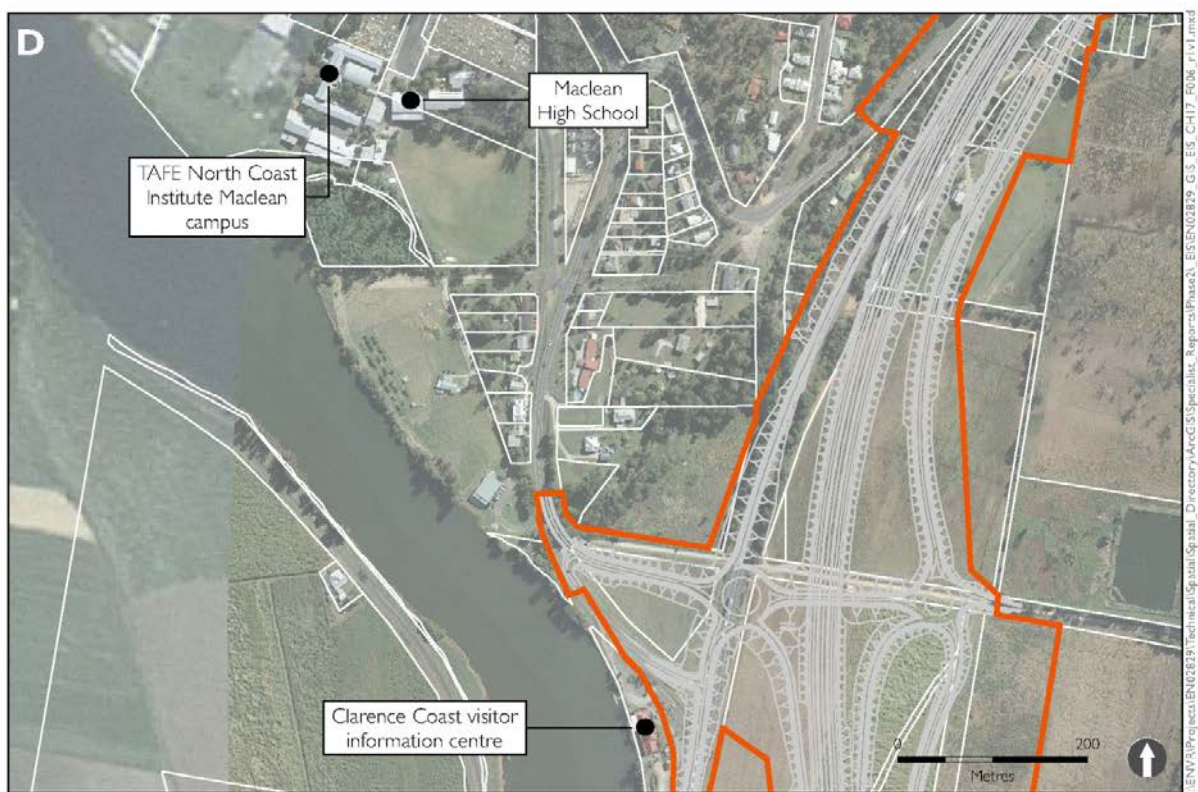
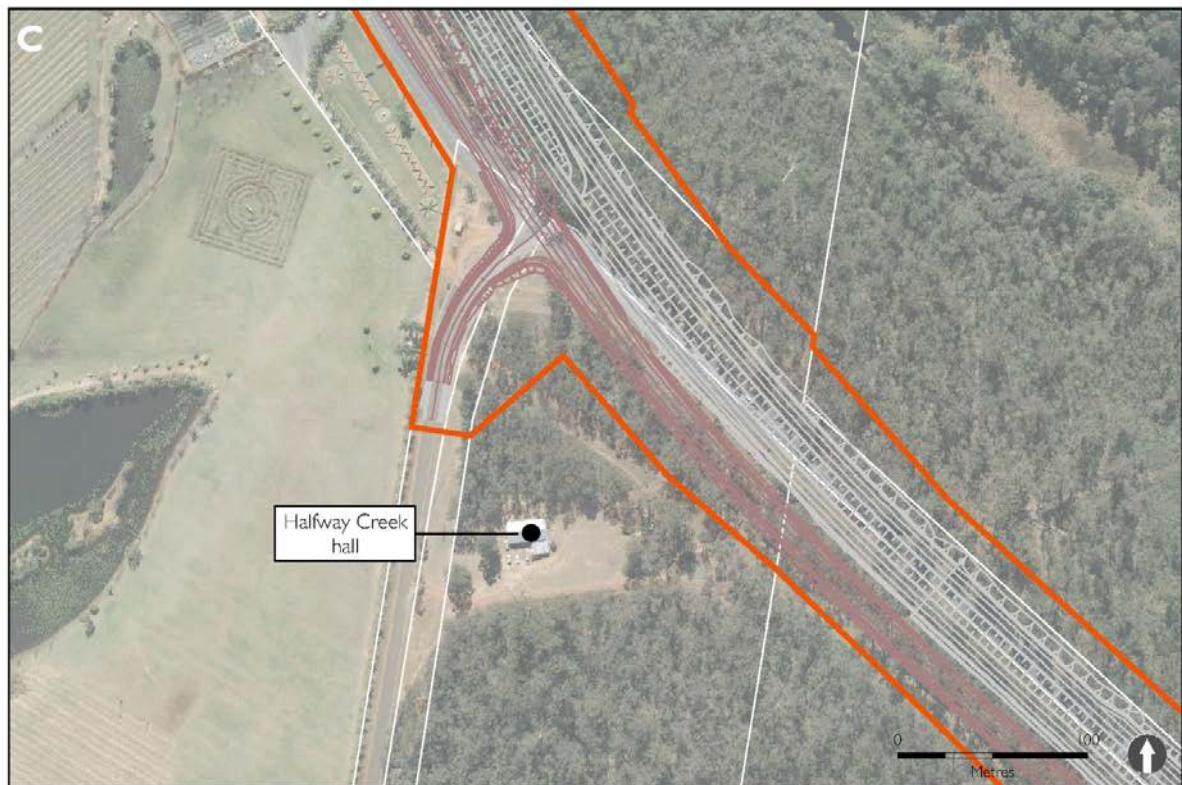
**Figure 17-22: Overview of social infrastructure and facilities (Woodburn to Ballina bypass)**





**Figure 17-23 Inset of social infrastructure and facilities near the project boundary (A-B)**

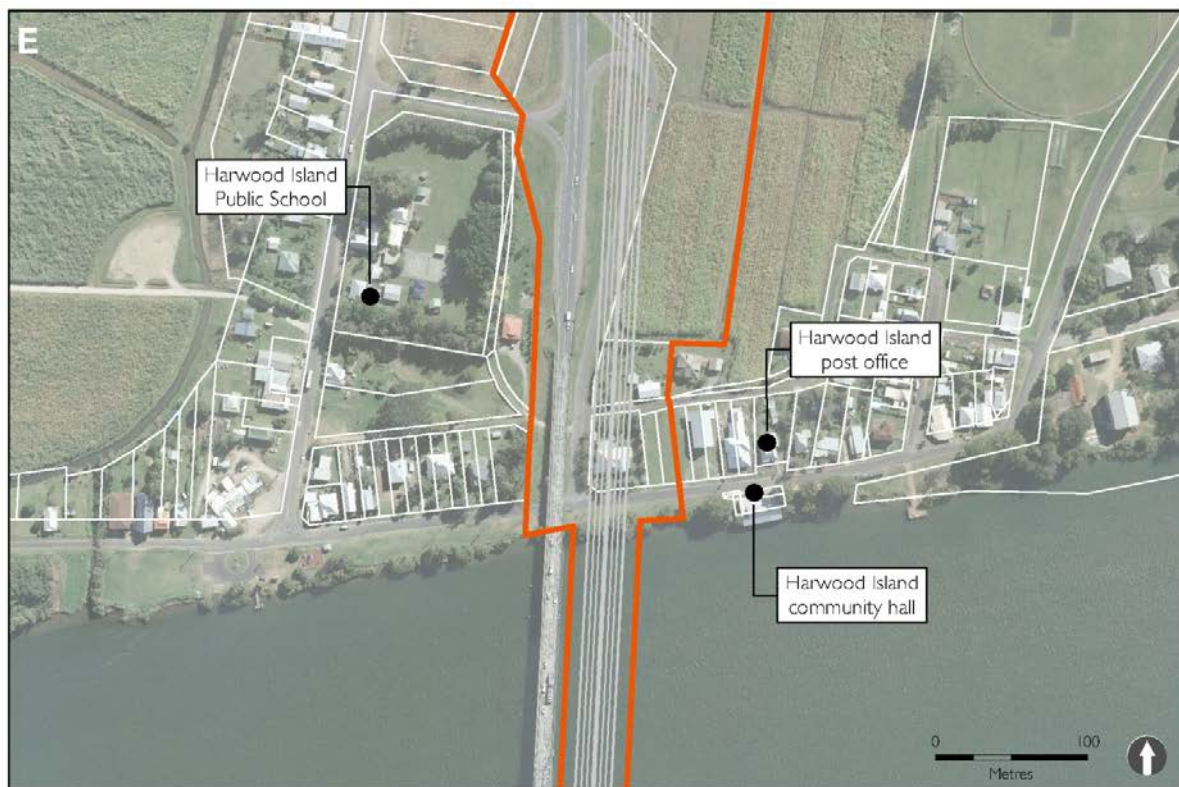




- The project
- Class M design detail
- Class A design detail

**Figure 17-24 Inset of social infrastructure and facilities near the project boundary (C-D)**

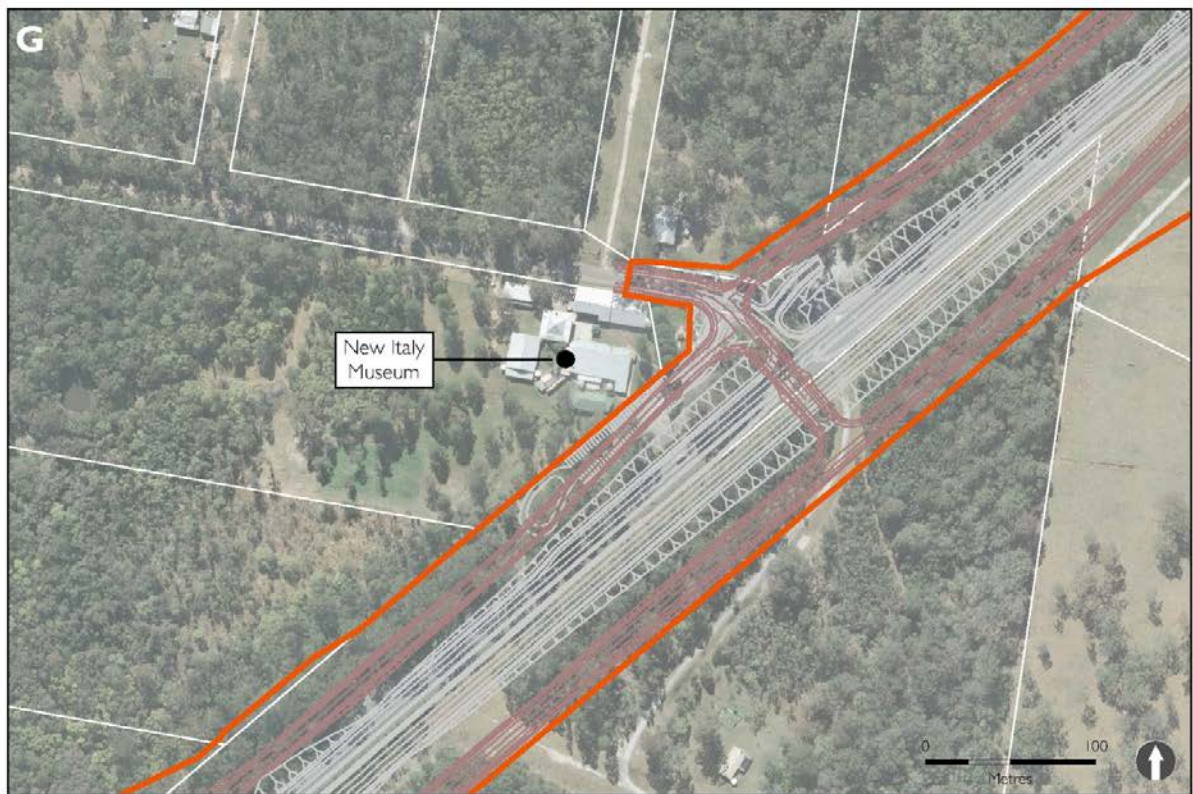




- The project
- Class M design detail
- Class A design detail

**Figure 17-25 Inset of social infrastructure and facilities near the project boundary (E-F)**





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

**Figure 17-26 Inset of social infrastructure and facilities near the project boundary (G-H)**



**Table 17-5: Impacts on social infrastructure**

Project section	Summary of impacts
1	The project would change access to community services and facilities at Corindi Beach and other towns and villages in this area.
2	<ul style="list-style-type: none"> <li>Under the arterial upgrade, access from The Halfway Creek rural fire brigade (on Lemon Tree Road, Halfway Creek) to the highway would be maintained via Lemon Tree Road. Under the motorway standard upgrade, access from Lemon Tree Road to the highway would be restricted and would be via the interchange at either Range Road or Glenugie</li> <li>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 motorway standard upgrade. This is not expected to impact on use of the hall</li> <li>Under the arterial upgrade, access to the highway would be maintained from Kungala Road. Under the motorway standard upgrade, access to the highway would be via the interchange at either Range Road or Glenugie.</li> </ul>
3	<p>There is no social infrastructure located near 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 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. Access to these facilities would be maintained to the existing highway. The project would have the following effects:</p> <ul style="list-style-type: none"> <li>Changed access for other facilities such as emergency services may impact on response times for these services to some locations in the region.</li> </ul>
4	<p>The project would have the following impacts on the Clarence Coast visitor information centre (adjacent to the Pacific Highway at Cameron Street, Maclean):</p> <ul style="list-style-type: none"> <li>Access to the centre would be maintained from Cameron Street, but access to Cameron Street would be via a new interchange at Maclean, requiring motorists to exit the highway over 1 km north of the visitor centre or about 500 m south of the centre</li> <li>There may be impacts on the amenity of the centre due to increased traffic noise from the highway and the interchange.</li> </ul>
5	<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. The project would have the following impacts:</p> <ul style="list-style-type: none"> <li>The highway would be realigned east of the existing highway, which would increase the separation distance to Harwood Island Public School. The school has advised RMS that this would benefit the school, due to a potential reduction in traffic noise. The project is not expected to significantly impact on access to the school – access to the school from communities south of the Clarence River would continue to be via the existing highway to the interchange at Yamba Road, and access to communities north of Harwood would continue to be via the existing highway and a new interchange at Watts Lane.</li> <li>The Woombah Woods Caravan Park is located at Iluka Road, near Mororo. The project is not expected to impact 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.</li> </ul>
6	The project is located adjacent to Bundjalung National Park. Access to the national park would be maintained.

Project section	Summary of impacts
7	<p>The project would have impacts on the New Italy Museum, which is located adjacent to the existing Pacific Highway at the intersection with Swan Bay New Italy Road. The project would directly impact a small portion of the property and require the reconfiguration of the existing car park. This is not expected to impact on the use or function of the museum. However, there would be following impacts on access:</p> <ul style="list-style-type: none"> <li>• Under the arterial upgrade, access would be provided to the museum directly from the highway via Swan Bay New Italy Road. However, under the motorway standard upgrade, access from the highway would be via a local service road on the western side of the highway connecting to the interchange at Iluka Road or via a local service road on the eastern side of the highway connecting to the interchange at Woodburn.</li> <li>• Bypassing the New Italy Museum would impact access to the 'driver revival' area located adjacent to the museum as well as to the New Italy Museum itself. This is likely to be a concern for this community. Ongoing consultation would be required with the New Italy Museum about potential impacts and possible mitigation measures.</li> </ul> <p>The project would not affect access to Tabbimoble State Forest and Doubleduke State Forest.</p>
8	<p>Access to the Broadwater National Park would be maintained.</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 the Woodburn visitor information centre, Woodburn Public School and emergency services. Access to these facilities would be maintained to the existing highway, but the following impacts are expected:</p> <ul style="list-style-type: none"> <li>• The realignment of the highway away from facilities such as the school would help to enhance safety and amenity for students.</li> <li>• Changed access for other facilities such as emergency services may impact on response times for these services to some locations in the region.</li> </ul>
9	<p>Access to Broadwater National Park would be maintained.</p>
10	<p>The bypass of Broadwater would improve amenity and access for community facilities within the town, including the Broadwater Public School, which is located adjacent to the Pacific Highway. This would also improve safety for school students.</p>
11	<p>There is no social infrastructure located near the project in this section.</p>

### 17.3.9 Tourism and recreation uses

#### Construction

During construction, the project would have potential impacts on tourism and recreation activities at facilities closest to the project. Impacts would result from changes to 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 and managers of recreation facilities would help to ensure demands are appropriately managed.

#### Operation

During operation, the project would support regional tourism by improving access to regional tourist attractions and destinations (refer to Table 17-6). A reduction in through traffic in towns bypassed by the project would also enhance 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. It could strengthen the community's environmental and recreational values associated with these features.

A small number of tourism and recreation uses would be adversely affected by partial property acquisition or changes to local access, but they would be able to continue operating.



**Table 17-6: Tourism and recreation impacts**

Project section	Summary of impacts
1	<p>The project would require the acquisition of a minor section of the Darlington Beach Holiday Park, but 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	There are no tourism or recreation uses near the project in this section.
3	<p>There are no tourism or recreation uses located near the project in this section. However, a number of tourism 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 visitor accommodation such as motels at South Grafton.</p> <p>The bypass of South Grafton and Grafton may impact on tourist related businesses. However, due to the size of Grafton, it is expected that the adverse effects from a loss of highway trade would be minimal. In particular, the bypass of South Grafton would improve the amenity of businesses located on the existing highway.</p>
4	The Clarence Coast visitor information centre is located adjacent to the Pacific Highway at Cameron Street, Maclean. Access to the visitor information centre would be maintained during operation.
5	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	The project is located adjacent to Bundjalung National Park. Access to the national park would be maintained.
7	<p>The New Italy Museum is located adjacent to the existing Pacific Highway at the intersection with Swan Bay and New Italy Road.</p> <p>Access to Tabbimoble State Forest and Doubleduke State Forest would be maintained.</p>
8	There are no tourism or recreation facilities near the project in this section.
9	Access to Broadwater National Park would be maintained.
10	There are no tourism or recreation facilities near the project in this section.
11	There are no tourism or recreation facilities near the project in this section.



**Photo 10: Wardell bridge over Richmond River**

### 17.3.10 Access and connectivity

This section provides an assessment of potential impacts on access and connectivity, including across the region, locally and for properties. This includes assessment of potential impacts on connectivity and contiguity of existing and planned settlement and activity clusters.

#### Construction

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 resulting from increased construction traffic and increased hazards near construction works
- Potential delays to school buses and safety issues for pedestrians at school bus stops resulting from increased construction traffic and increased hazards near construction works.

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.

#### Operation

The project would improve access and connectivity within the region and to destinations in surrounding regions such as south-east Queensland and central NSW by improving highway conditions and road safety, and reducing travel times.

Locally, the project would change access and connectivity for residents from rural areas to towns and villages, as well as property access for some properties.

In particular, with the motorway standard upgrade, access to the highway would be provided via interchanges accessed by local service roads. This may result in changed trip patterns and increased trip lengths for some local residents, but access would be safer and easier from properties as access would be provided to a service road, rather than directly to the highway.

In particular, the concept design would continue to be refined during the detailed design phases of the project, as follows:

- Access arrangements between Bondi Hill and Byron Lane, and north towards Gallaghers Lane, would be reviewed in consultation with affected property owners and the cane industry
- Access arrangements east and north of Watts Lane would be reviewed at the detailed design stage to facilitate delivery as part of the initial upgrade to arterial standard
- Access to Broadwater mill land between MacDonalds Street and River Road would be reviewed
- The access arrangements for local traffic at Whytes Lane and the tie in to the Ballina bypass upgrade would be reviewed together with any potential boundary refinements.

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

In terms of access to existing and planned settlement and activity clusters, areas identified for future development along the project length include Clarenza, Junction Hill, West Yamba and Gulmarrad.



The project would not directly affect these planned settlements or activity clusters. The project would support the future development of these areas through improved access to major regional centres and clusters such as Coffs Harbour and Ballina and areas outside of the region such as south east Queensland.

However, the project would also have some adverse impacts on local access and connectivity, including:

- The potential impacts on the Berry Exchange from the project's proximity to farmland used for raspberry and blueberry growing: The Berry Exchange, located at Range Road, Corindi, has raised concerns about potential impacts of the project's construction and operation, as well as impacts of the Berry Exchange's operations on nearby construction activities (eg pesticide use). For example, there would be a requirement for appropriate access to and from the Berry Exchange for workers during the peak berry picking season, during construction of the project
- Potential restrictions on the movement of farm equipment and livestock between different areas of farming properties, engaging in sugar cane activities during the peak harvesting season. For example, in Section 4, McIntyres Lane would be closed either side of the project, with no direct access to the highway. This would increase travel time for vehicles seeking access to the Pacific Highway, and neighbouring fields. However, appropriate access arrangements to and from Gulmarrad, including the provision of a highway overbridge at McIntyres Lane would be considered at the detailed design stage in consultation with Clarence Valley Council
- Potential changes for vehicles travelling to and from the industrial estate north of Townsend in terms of access and travel time. Access arrangements between the interchange at Maclean and Townsend via Jubilee Street would be reviewed. This would take into consideration the current heavy vehicle movements to the industrial estate at Townsend from the existing Pacific Highway
- Removal of direct access to the New Italy Museum from the highway under the motorway standard upgrade. 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. In particular, access into Swan Bay-New Italy Road and the New Italy museum would be investigated at the detailed design stage.

The access benefits and impacts of the project are presented in Table 17-7.

Table 17-7: Impacts on access and connectivity

Project section	Summary of impacts
1	<p>The section between Woolgoolga and Range Road would be upgraded to motorway standard while the section between Range Road and Halfway Creek would initially be upgraded to arterial 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 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	<p>This section would initially be upgraded to arterial standard. The alignment would follow the existing highway in this section and is not expected to impact on local access or connectivity.</p>
3	<p>This section would be initially upgraded to motorway standard. A section of the existing highway would become redundant but would be maintained as local access for communities (ie Grafton, South Grafton, Ulmarra). The redundant section of highway would experience a reduction in 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 walking and cycling 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	<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>Under the motorway standard, the project would remove direct property access to the Pacific Highway. Highway intersections would also be removed, with access to the upgraded highway being via a proposed service road or the local road network to the nearest interchange. This could result in potential restrictions on the movement of farm equipment and livestock., appropriate alternatives would be considered at the detailed design stage (eg McIntyres Lane).</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	<p>This section would initially be upgraded to arterial 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	<p>This section would initially be upgraded to arterial 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	<p>This section would initially be upgraded to arterial standard, 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 motorway standard upgrade, 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 km to the north, or the Iluka Road interchange, about 23 km to the south.</p> <p>Maintaining access to the New Italy Museum and New Italy township was identified as important during consultation. 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>

Project section	Summary of impacts
8	<p>This section would be initially upgraded to motorway 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	<p>This section would be initially upgraded to motorway 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	<p>This section would be initially upgraded to motorway 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	<p>This section would be initially upgraded to motorway 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>

## 17.4 Management of impacts

Implementing management measures during construction and operation would help to avoid or mitigate potential socio-economic impacts, and maximise project benefits.

For this reason, the project includes early and ongoing consultation with affected property owners, businesses and communities, as well as community participation in the ongoing planning, construction, environmental management and monitoring of the project.

During construction and operation, property access would be subject to ongoing consultation with landowners.

Mitigation specific to socio-economic impacts are included in Table 17-8. Other environmental management measures relating to noise, vibration and dust management, are presented in Chapter 15 (Noise and vibration) and Chapter 18 (Other issues).



Table 17-8: Social and economic mitigation measures

Issue	Mitigation ID no.	Mitigation measure	Timing	Relevant section
Consultation with local business, community facilities and residents	SE1	<ul style="list-style-type: none"> <li>Ongoing communication and consultation with local business owners, industry and tourism operators directly affected by construction and located closest to construction works. The focus would be on the timing, duration and likely impact of construction activities, and to identify appropriate measures to manage potential impacts</li> </ul>	Pre-construction and during construction	All
	SE2	<ul style="list-style-type: none"> <li>Ongoing communication and consultation with managers of community services and facilities near the proposed construction works, to ensure that potential impacts are appropriately managed</li> </ul>	Pre-construction and during construction	All
	SE3	<ul style="list-style-type: none"> <li>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.</li> </ul>	Pre-construction and during construction	All
Strategy for by-passed towns, local government areas and amenity	SE4	<ul style="list-style-type: none"> <li>Implementation of effective signage for bypassed towns in accordance with RMS signage guidelines. Signage on the project would identify bypassed townships (Ulmarra, Wardell, Broadwater and Woodburn) as places for 'stopovers' for fuel, supplies and short term accommodation, to support demand for goods and services within these townships</li> </ul>	During construction, and operation	All
	SE5	<ul style="list-style-type: none"> <li>RMS would work with Councils affected by the upgrade. Where relevant, support strategies by local councils and/or chamber of commerce and industry to promote townships and villages as stopovers for tourist activities with the aim of bringing increased business to nearby townships and villages.</li> </ul>	During construction, and operation	All
Access and connectivity	SE6	<ul style="list-style-type: none"> <li>Maintain access to properties near to the project during construction, including, where required, for the movement of farm equipment and livestock between properties, and for access to the Berry Exchange and other affected agribusinesses</li> </ul>	During construction	All
	SE7	<ul style="list-style-type: none"> <li>Where temporary changes to property access are required during construction, alternative access should be determined in consultation with affected property owners and tenants</li> </ul>	During construction	All
	SE8	<ul style="list-style-type: none"> <li>Undertake consultation with the New Italy community about proposed access changes for the New Italy Museum, including potential impacts and recommended</li> </ul>	Pre-construction	All

Issue	Mitigation ID no.	Mitigation measure	Timing	Relevant section
		mitigation measures. In particular, access into Swan Bay-New Italy Road and the New Italy museum would be investigated at the detailed design stage		
	SE9	<ul style="list-style-type: none"> <li>Undertake consultation with the Harwood Island Public School and other community facilities located adjacent to the project about proposed changes to local access</li> </ul>	During operation	All
	SE10	<ul style="list-style-type: none"> <li>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</li> </ul>	During operation	All
	SE11	<ul style="list-style-type: none"> <li>Appropriate access arrangements to and from Gulmarrad, including the provision of a highway overbridge at McIntyres Lane would be considered at the detailed design stage in consultation with Clarence Valley Council</li> </ul>	Pre-construction	Section 4
	SE12	<ul style="list-style-type: none"> <li>Access arrangements between Bondi Hill and Byron Lane, and north towards Gallaghers Lane, would be reviewed at the detailed design stage in consultation with affected property owners and the cane industry</li> </ul>	Pre-construction	Section 4
	SE13	<ul style="list-style-type: none"> <li>Access arrangements east and north of Watts Lane would be reviewed at the detailed design stage to facilitate delivery as part of the initial upgrade to arterial standard</li> </ul>	Pre-construction	Section 5
	SE14	<ul style="list-style-type: none"> <li>Access to Broadwater mill land between MacDonalds Street and River Road would be reviewed at the detailed design stage</li> </ul>	Pre-construction	Section 9
	SE15	<ul style="list-style-type: none"> <li>The access arrangements for local traffic at Whytes Lane and the tie into the Ballina bypass upgrade would be reviewed together with any potential boundary refinements at the detailed design stage.</li> </ul>	Pre-construction	Section 11
River access	SE16	<ul style="list-style-type: none"> <li>Maintain access to the Clarence and Richmond rivers near construction activities, including for industry, tourism, fishing (general and prawn trawl) and recreation users.</li> </ul>	During construction	Sections 5 and 10
	SE17	<ul style="list-style-type: none"> <li>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.</li> </ul>	During construction	Sections 5 and 10

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