# Roads and Traffic Authority of NSW

## Oxley Highway to Kempsey
## Upgrading the Pacific Highway

# Environmental Assessment

MAIN VOLUME

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GHD Pty Ltd
ABN 39 008 488 373

Level 3, GHD Tower
24 Honeysuckle Drive
NEWCASTLE NSW 2300

Phone: +61 2 4979 9999
Fax: +61 2 4979 9988
Email: ntlmail@ghd.com

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# 3. Proposal need, objectives and alternatives

This chapter presents the need for the Proposal, the objectives of the Proposal and discusses the alternatives considered in the route development and selection processes. For each of the alternatives, the environmental, property and engineering impacts have been considered. A summary of the environmental costs and benefits of the Proposal in comparison to the alternatives is also provided.

The Director-General's environmental assessment requirements identify a number of key issues to be addressed in relation to the justification of the Proposal. **Table 3-1** indicates where the aspects of the Director-General's environmental assessment requirements that relate to justification of the Proposal are addressed, either in this chapter or in other chapters (in *italics*).

**Table 3-1 Proposal justification**

| Environmental assessment requirements | Where addressed |
|---|---|
| **Strategic Justification and Project** - outline the strategic outcomes for the Pacific Highway Upgrade Program (PHUP), including with respect to strategic need and justification, the aims and objectives of relevant State planning policies, the principles of Ecologically Sustainable Development, and cumulative and synergistic impacts associated with the Program as a whole. Identify how the project fits within these strategic outcomes and how impacts associated with the project will be considered and managed to achieve acceptable environmental planning outcomes across the PHUP. | *Chapter 2 Strategic need for the Proposal*<br>**Sections 3.1**, **3.2** and **3.4**<br>*Chapter 10 Land use and property*<br>*Chapter 21 Principles of ecologically sustainable development*<br>*Chapter 22 Strategic and Proposal justification* |
| **Project Justification** - describe the need for and objectives of the project; alternatives considered (including an assessment of the environmental costs and benefits of the project relative to alternatives), and provide justification for the preferred project taking into consideration the objects of the *Environmental Planning and Assessment Act 1979.* | *Chapter 2 Strategic need for the Proposal*<br>**Sections 3.1**, **3.2**, **3.3** and **3.4**<br>*Chapter 22 Strategic and Proposal justification* |

## 3.1 Need for the Proposal

The Oxley Highway to Kempsey section of the Pacific Highway is a key link in the overall framework of the transport corridor between Sydney and Brisbane. In the local area, this section of the existing Pacific Highway connects the region's two largest urban settlements, Port Macquarie and Kempsey.

The Proposal is required to improve the efficiency and safety of the section of the Pacific Highway linking these two settlements. The Proposal has been developed within the context of the broader Pacific Highway Upgrade Program and its objectives described in **Section 2.1**. The upgrading of the highway aims to reduce the incidence of crashes through a separation of local and through traffic, as well as improve the overall condition of the road pavement, travel time and alignment of the Pacific Highway.

### 3.1.1 Existing highway condition

The existing Pacific Highway in the area of the Proposal comprises a road reserve that varies in width considerably along its length, with a nominal width of 100 metres. Currently the existing highway has sections of single lane in each direction, with overtaking lanes at intermittent locations.

Investigations of the existing highway in the Proposed area indicate that it does not meet current Pacific Highway design objectives. Examples include:

- The existing highway contains horizontal and vertical curves that do not meet the Pacific Highway desirable design standards for 110 kilometres per hour.
- The existing alignment does not achieve desirable clear zone requirements.
- A number of intersections do not comply with 100 kilometres per hour visibility standards and do not perform satisfactorily in respect of vehicle movements.
- The speed limit of the existing highway in the vicinity of Hastings River Drive has been reduced to 80 kilometres per hour due to the crash history.
- Many of the existing bridges would not comply with new loading requirements.
- There are numerous access points (private and otherwise) that join the existing highway. Each access point represents a safety risk.

### 3.1.2 Traffic characteristics

The annual average daily traffic range for the existing highway is between approximately 12,300 and 14,900 vehicles per day. Heavy vehicles comprise approximately 20 per cent of the highway traffic and make up 13 per cent of traffic during the day and 43 per cent during the night. Traffic volumes are greatest between Hastings River Drive and Telegraph Point.

The traffic conditions of major roads and intersections can be described in terms of their operating level of service. The *Guide to Traffic Engineering Practice* (Austroads 1988) assigns a level of service using qualitative measures of features including speed, travel time, traffic interruptions, freedom to manoeuvre, safety, driving comfort, convenience and operating costs. The existing highway between Oxley Highway and Kempsey is currently operating at level of service D, which is defined as "*approaching unstable flow with delays common but tolerable*". One of the Proposal objectives (**Section 3.2**) is to achieve a level of service C 20 years after opening. Further information on levels of service is provided in **Chapter 18 Traffic and transport**.

The *Mid North Coast Regional Strategy* (Department of Planning 2009a) has identified that the population of the area is predicted to increase significantly over the next 25 years. As the local population increases, the conflict between local traffic and through traffic on this section of the Pacific Highway would increase. This would result in reduced traffic efficiency and increased safety concerns.

Access for logging trucks and associated forestry vehicles is an important issue due to the large number of state forests within the study area and proposed schedules for logging these areas. There is currently no defined highway access strategy for forestry vehicles, which often pose a safety issue when entering and exiting the existing highway.

### 3.1.3 Traffic hierarchy

The traffic data indicates that a mix of local, regional and interstate traffic uses the existing highway in this area. This traffic mix reduces the capacity of the existing highway, especially during holiday periods when traffic volumes increase significantly.

Investigations indicate that approximately 18 per cent of northbound traffic on the existing highway at Port Macquarie continues on and travels through the study area. Approximately 26 per cent of the southbound vehicles from Kempsey continue on and travel through the study area. The percentage of through traffic increases substantially at night as a result of the increase in heavy vehicle movements (refer to **Chapter 18 Traffic and transport** for more details). The volume of traffic will increase as the population along the Proposal increases, resulting in more frequent car crashes and road congestion.

### 3.1.4 Crash history

A comparison with the objectives of the *Road Design Guide* (RTA 1988) for crash rates per 100 million vehicle kilometres indicates this section of the Pacific Highway has a higher than average fatal crash rate. In particular, crashes are concentrated around the Hastings River Drive intersection, Telegraph Point and in the vicinity of Kundabung.

The crash target rate for the Pacific Highway Upgrade Program is 15 crashes per 100 million vehicle kilometres. The Oxley Highway to Kempsey section of the Pacific Highway had a crash rate of 22.3 per 100 million vehicle kilometres in 2006. A total of 129 crashes have occurred in the Proposal area between 2002 and 2006 including seven fatalities. The majority of crashes occur within the vicinity of Telegraph Point, Kundabung and the Hastings River Drive intersection.

## 3.2 Proposal objectives

The Proposal objectives that have guided the route options development and preferred route phases are:

- Develop a dual carriageway road with potential to reduce crash rates to 15 crashes per 100 million vehicle kilometres over the project length.
- Develop a refined design that meets or exceeds B-double requirements, including at intersections, where required.
- Maximise the use of the existing road reserve, where possible.
- Integrate input from local communities into the development of the project through the implementation of a comprehensive program of community consultation and participation.
- Satisfy the technical and procedural requirements of the RTA with respect to the design of the project.
- Provide for transport developments that are complementary with land use.
- Allow for all connections, modifications and improvements necessary to upgrade the existing highway where it is retained as part of the project.
- Consider delay management strategies to minimise disruption to local and through traffic and maintain access to affected properties and land during construction.
- Provide flood immunity on at least one carriageway for a 1 in 100 year flood event and for all carriageways for a 1 in 20 year flood event.

- Provide intersections designed to achieve at least a level of service C 20 years post-completion to accommodate the 100th highest hourly volume.
- Develop solutions that address community expectations for access to the new highway.
- Retain or replace existing rest areas within the Proposal area.
- Develop a refined design generally meeting the criteria for a 110 kilometres per hour design speed for the vertical alignment and horizontal alignment.
- Ensure the project outcomes achieve value for money.
- Provide a strategy for future upgrades to be easily integrated into the project from both engineering and environmental perspectives.
- Minimise the need to modify the preferred route option and refined design during subsequent project phases.

## 3.3 Alternatives considered

### 3.3.1 'Do nothing' option

The Pacific Highway will continue to play an important role as a major local, intra and inter-regional road transport link and a main link between Sydney and Brisbane.

Two key objectives of the Proposal relate to the level of service and potential to reduce crash rates. If the 'do nothing' option was selected it is estimated that by 2016:

- The existing highway south of Yarrabee Road would be operating at level of service D (approaching unstable flow with delays common but tolerable) and north of Yarrabee Road at level of service E (unstable flow with traffic stream congested and with intolerable delays).
- The number of crashes on this section of the Pacific Highway would be expected to continue or even increase.

The consequences of not undertaking the Proposal would include a steady reduction in safety and local amenity due to the conflict between local and through traffic. An increasing local population along with increased highway traffic would further worsen existing highway conditions. Freight travel times and costs would increase, and highway users would experience increased traffic volumes and congestion on the existing highway at peak holiday times. There would be a consequent increase in community severance and isolation as existing highway access and functionality worsened.

Having regard to the need for the Proposal as set out above, the 'do nothing' option was therefore not considered to be a viable option and the route options development process commenced.

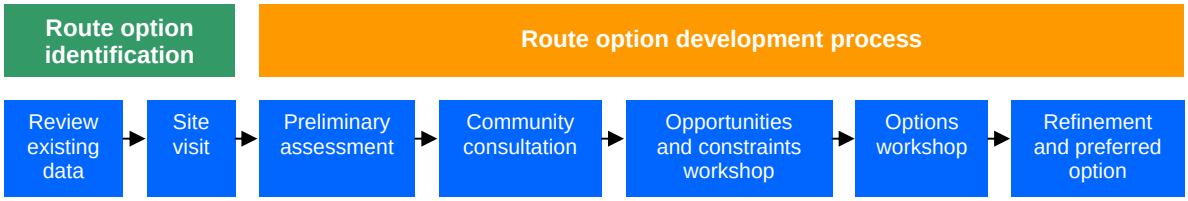
### 3.3.2 Route options identification

A 3 kilometre wide corridor around the existing highway was initially investigated, including a community request to provide a solution to the east of Telegraph Point. Route identification was undertaken as an iterative process with initial investigations involving a multi-criteria modelling geographic information system program. This modelling was used to investigate a range of possible alignments within the investigation corridor.

From this modelling a preferred group of four alignments was identified. Site visits were undertaken to ground-truth the alignments and findings. A preliminary assessment of these options was undertaken using the multi-criteria analysis tool. Consultation was then undertaken with the community to refine the options, and a series of workshops held to incorporate findings from the consultation process. For more information on the route option identification process, refer to the *Oxley Highway to Kempsey Route Options Development Report* (RTA 2005f) available on the RTA website at **www.pacifichighwayupgrade.com.au**.

The route options development process is outlined in **Figure 3-1.**

**Figure 3-1 Route options development**




The investigation corridor was divided into four sections as follows:

- Section A covers the area from 700 metres north of Oxley Highway to Blackmans Point Road. It crosses the Hastings River and Fernbank Creek. The section traverses a mixture of forested and agricultural land.
- Section B covers the area from Blackmans Point Road to Cooperabung Drive. It crosses the Wilson River and Cooperabung Creek. The section traverses forested land, some agricultural land and the North Coast Railway Line and includes the village of Telegraph Point.
- Section C runs from Cooperabung Drive to Mingaletta Road, traversing Cooperabung Creek Nature Reserve and Ballengarra State Forest.
- Section D commences at Mingaletta Road and runs north to Stumpy Creek, approximately 8 kilometres south of Kempsey. This section crosses Maria River, Smiths, Pipers and Stumpy creeks, passes through Maria River State Forest and includes the village of Kundabung. At the northern end of the Proposal, the eastern service road would extend approximately 320 metres further to the north of Stumpy Creek to tie in with the southern interchange of the proposed Kempsey to Eungai Pacific Highway upgrade. It should be noted that during the route selection and preferred route phases the original northern limit was at Maria River, but has been extended due to design refinements.

### 3.3.3 Route options

The route option identification process identified four feasible route options. The route options development process included the following stages:

- Preliminary environmental, cultural, engineering, economic and social investigations of the study area to identify constraints and opportunities.
- A comprehensive program of community and stakeholder consultation.
- Identification of feasible route options, together with a preliminary design for these options.
- Targeted investigations to identify potential impacts and key characteristics of the feasible route options.

Four feasible route options (referred to as Blue, Green, Purple and Orange) were placed on public display between 21 October 2005 and 2 December 2005. **Figure 3-2** shows the four route options. **Figure 3-3** illustrates the four sections (A, B, C and D) in which the different options were assessed to identify a preferred route.

### 3.3.4 Preferred Route Corridor

When deciding on the Preferred Route Corridor, a thorough assessment process was completed in partnership with the community and in recognition of the principles of ecologically sustainable development. This was done to ensure that the Preferred Route Corridor achieved the best balance between social, environmental, engineering and economic constraints and opportunities.

Elements of the Preferred Route Corridor selection process were:

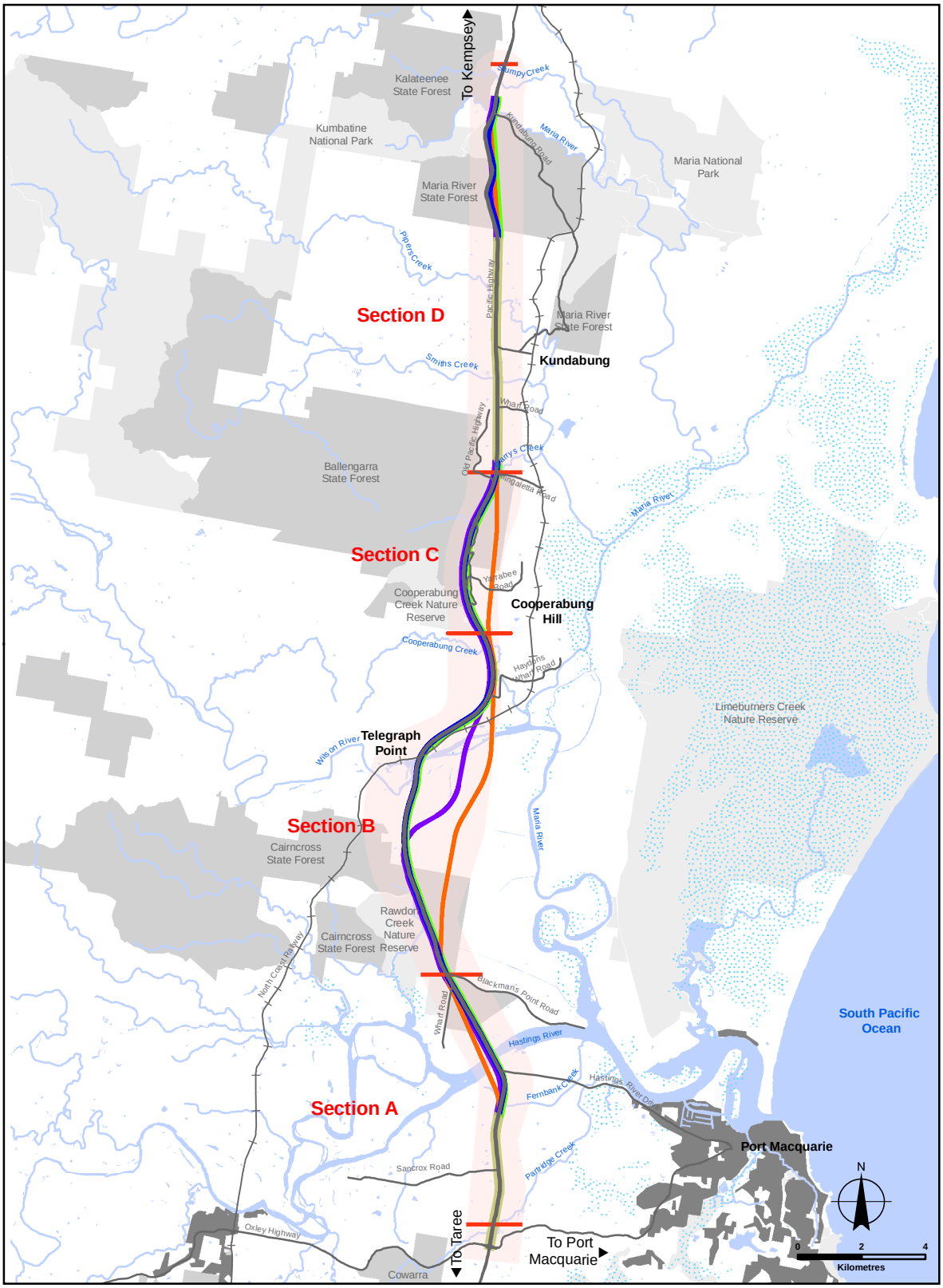
- Consideration of submissions raised by the community and other stakeholders during the route options display.
- Meetings with affected landowners and stakeholders.
- Consideration of preliminary reports and ongoing field investigations.
- Environmental cost benefit analysis.
- Value management workshop.
- Targeted investigations and option refinement.
- Project team route selection workshop.
- Consideration of the Preferred Route Corridor by the NSW Minister for Roads.

The Preferred Route Corridor for the Proposal was announced by the NSW Minister for Roads on 28 August 2006 and was placed on exhibition until 13 October 2006. The Preferred Route Corridor generally comprised a 150 metre wide corridor; however a wider corridor (up to 800 metre in width) was adopted through Cairncross State Forest, in the Bill Hill Road area. This wider corridor allowed for further investigations so as to minimise impact on koala habitat, productive forestry within Cairncross State Forest, productive agricultural land, private property and utilities. Public submissions were also sought on the wider corridor.

Following consideration of public submissions, conduct of further investigations in the wider corridor and a route selection workshop, a refined Preferred Route Corridor was selected as shown in **Figure 3-4**. Detailed documentation supporting the selection of the Preferred Route Corridor, including information on the environmental cost-benefit analysis undertaken, can be found in the *Oxley Highway to Kempsey Route Options Development Report* (RTA 2005f), *Oxley Highway to Kempsey Preferred Route Report* (RTA 2006e), *Oxley Highway to Kempsey Preferred Route Report – Bill Hill Road Area* (RTA 2007d) and *Oxley Highway to Kempsey Project Application Report* (RTA 2007c). The reports are available on the RTA website at **www.pacifichighwayupgrade.com.au**.

On balance, the Proposal would provide a net benefit to the community. **Table 3-2** provides a summary of the environmental costs and benefits of the Preferred Route Corridor compared to the alternative route options. It should be noted that the constraints and benefits identified at the preferred route selection phase and shown in **Table 3-2** could have changed due to design refinements in the concept design and environmental assessment phases. A further description of the benefits that the Proposal would deliver and a justification for the Proposal can be found in **Chapter 22 Strategic and Proposal justification**.

## Figure 3-2 Route options




Route_Options_20100224
- Blue option
- Green option
- Orange option
- Purple option
- Common corridor for all routes

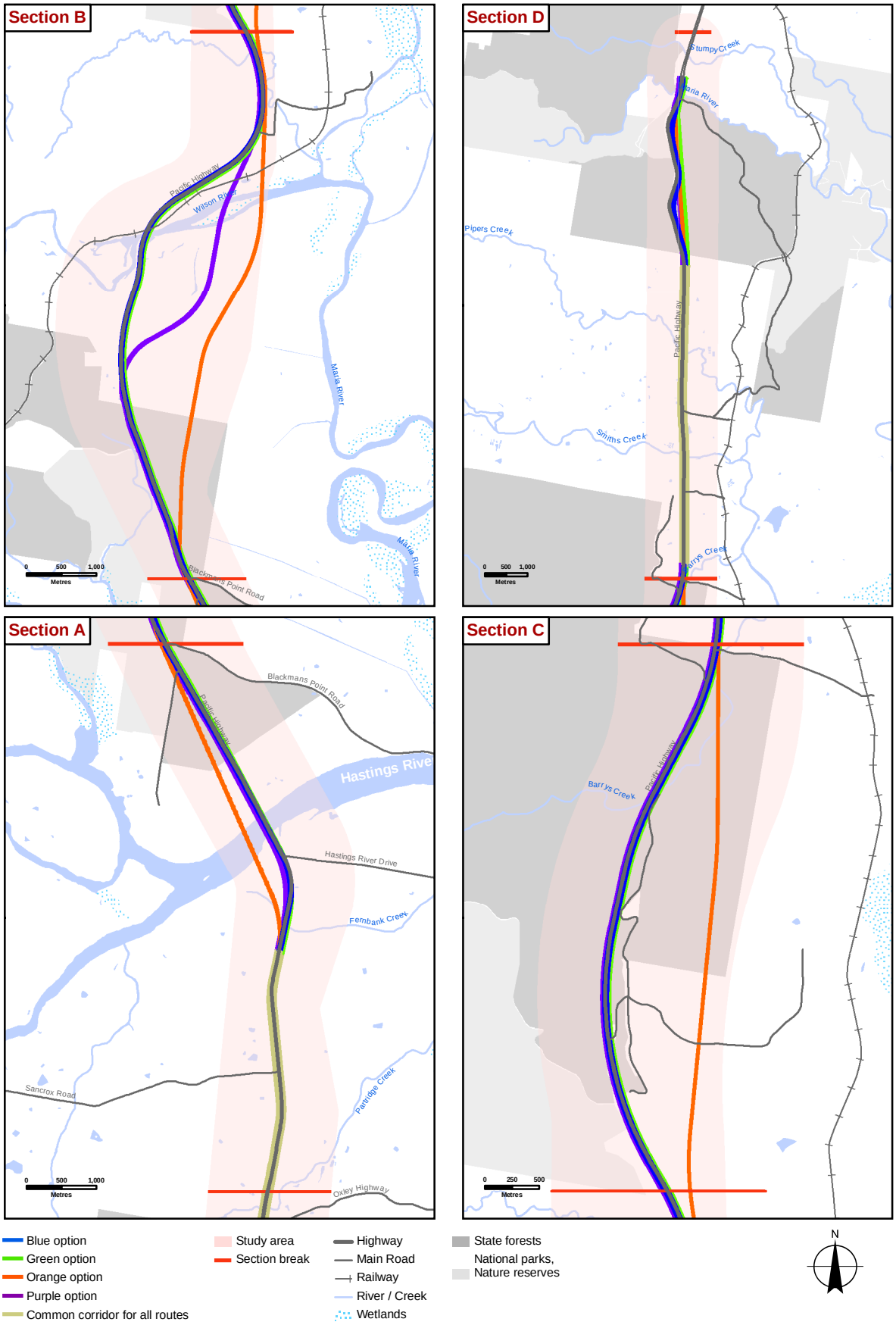
- Study area
- Section break

- Main Road
- Railway
- River / Creek
- Wetlands
- River / Ocean

- State forests
- National parks, Nature reserves
- Bulit-up urban areas

Refer to Figure 3.3 for further details showing route options per section break

## Figure 3-3 Route options by section



## Figure 3-4 Preferred Route Corridor

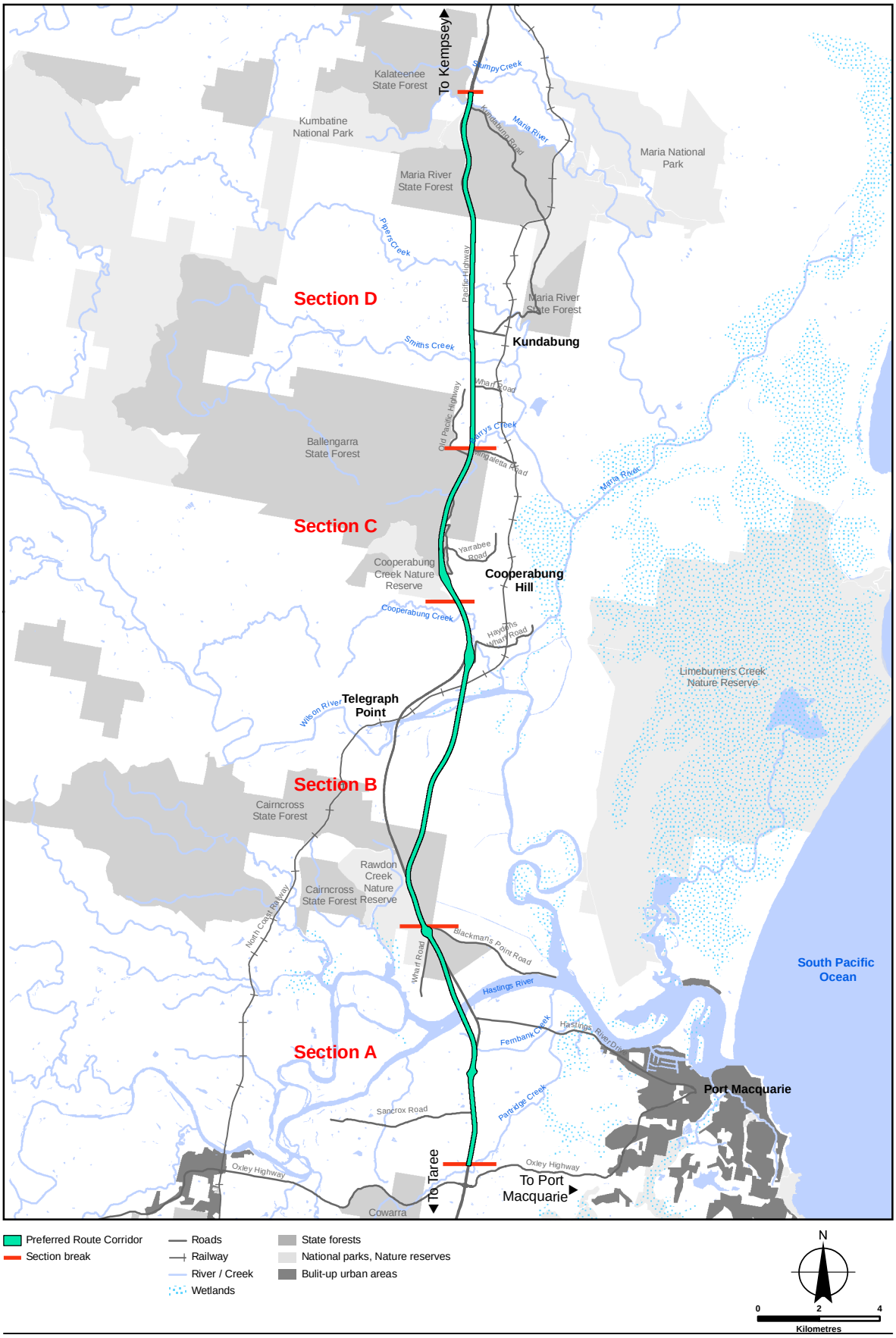


**Table 3-2 Route option comparison**

| Criteria | Preferred Route Corridor | Alternatives |
|---|---|---|
| **Section A** | **Orange option** | **Green, purple and blue options** |
| Environmental impacts | • Clearing up to 45 hectares of vegetation, including:<br>o Up to 10 hectares of endangered ecological communities.<br>o Up to 10 hectares of high conservation value vegetation.<br>• Passes through floodplain wetland habitats.<br>• Requires construction of a new alignment for two carriageways.<br>• New noise impacts introduced to private properties on Glen Ewan Road and properties on the northern bank of the Hastings River.<br>• Visual impacts from the construction of twin bridges upstream of the existing Hastings River crossing.<br>• Cost approximately $260 million for motorway construction. | • Clearing up to 25 hectares of vegetation, including:<br>o Up to 8 hectares of endangered ecological communities.<br>o Up to 13 hectares of high conservation value vegetation.<br>• All pass through floodplain wetland habitats.<br>• Requires widening of the existing corridor.<br>• Existing noise impacts to private properties on Glen Ewan Road would be exacerbated.<br>• Visual impacts through the construction of a new bridge adjacent to the existing Hastings River crossing.<br>• Costs between $260-280 million for motorway construction. |
| Property impacts | • Requires the acquisition of agricultural land on both the southern and northern banks of the Hastings River.<br>• 45 properties affected.<br>• Minor severance of Cairncross State Forest. | • Requires acquisition of agricultural land fronting the existing highway.<br>• 43 properties affected.<br>• Strip acquisition from Cairncross State Forest. |
| Impacts on engineering performance and the Pacific Highway Upgrade Program objectives | • New carriageways created and the existing highway retained for use as a service road.<br>• New twin bridges over Fernbank Creek and the Hastings River.<br>• Route avoids the proposed marine precinct adjacent to Dennis Bridge.<br>• Traffic delays minimised during construction.<br>• Minimises impacts to rural properties in Glen Ewan Road.<br>• Route length is 8.2 km long. | • Existing design shortcomings of the current alignment would be retained by the duplication of the existing highway alignment. For example two horizontal curves and six vertical curves do not meet current design standards.<br>• Requires the construction of one new watercourse crossing over the Hastings River. The existing Dennis Bridge would be retained but it does not meet minimum carriageway widths of 10.5 m.<br>• Route lengths are all 8.4 km long. |

| Criteria | Preferred Route Corridor | Alternatives |
|---|---|---|
| **Section B** | **Modified refined orange option** | **Green, purple and blue options** |
| Environmental impacts | • Clearing up to 43 hectares of vegetation, including:<br>o Up to 4 hectares of endangered ecological communities.<br>o Up to 10 hectares of high conservation value vegetation.<br>• Minor impact on Rawdon Creek Nature Reserve.<br>• New noise sources introduced to residents at eastern end of Moorside Drive.<br>• Improved noise conditions for Telegraph Point.<br>• Has the least overall noise impact on communities.<br>• Would impact on small areas of State-listed wetland on Dalhunty Island and the northern bank of the Wilson River.<br>• Visual impacts from new carriageway crossing the Wilson River floodplain, and new twin bridges crossing the Wilson River. | • Clearing up to 33 hectares of vegetation for the purple option and 15 hectares for the green and blue options, including:<br>o Up to 19 hectares of endangered ecological communities for the purple option and zero for the green and blue options.<br>o Up to 20 hectares of high conservation value vegetation for the purple option and 11 hectares for the green and blue options.<br>• Minor impact on Rawdon Creek Nature Reserve.<br>• Noise conditions in Telegraph Point would remain similar to existing.<br>• The blue option would impact on a small area of State significant wetland on Dalhunty Island.<br>• Visual impacts from duplication of the Wilson River crossing. |
| Property impacts | • Requires acquisition of agricultural land on the Wilson River floodplain, and rural-residential land on the northern banks of the Wilson River.<br>• Affects the least number of privately owned properties (28 properties).<br>• Severance of Cairncross State Forest.<br>• Minimises the impacts to Cairncross State Forest, flora and fauna (including koalas), agricultural lands, rural residential properties and public utilities. | • Requires the acquisition of residential properties in Telegraph Point.<br>• 79 properties affected for the blue and green options and 55 for purple the option.<br>• Strip acquisition from Cairncross State Forest. |

| Criteria | Preferred Route Corridor | Alternatives |
|---|---|---|
| Impacts on engineering performance and the Pacific Highway Upgrade Program objectives | • New carriageways would be created and the existing highway would be retained for use as a service road. New bridges would be constructed over the Wilson River and Cooperabung Creek.<br>• Telegraph Point would be bypassed. Highway traffic would be separated from local traffic in Telegraph Point and safety would be improved.<br>• Construction would not be under traffic conditions for the majority of the section and would be clear of Telegraph Point. Therefore there would be limited road user delays.<br>• Motorway construction costing approximately $265 million. | • Existing design shortcomings of the current alignment would be retained by the duplication of the existing highway alignment. For example four horizontal curves and six vertical curves do not meet current design standards.<br>• The Wilson River bridge and Cooperabung Creek bridge do not meet current design standards. The Wilson River bridge would be retained for use as part of a local access road. The existing Cooperabung Creek bridge would be replaced with new twin bridges.<br>• Construction would take place under traffic conditions, and would be problematic in Telegraph Point.<br>• Extensive road user delays expected during construction.<br>• Motorway construction costing between $280-340 million. |
| **Section C** | **Blue, green and purple options** | **Orange option** |
| Environmental impacts | • Clearing up to 51 hectares of vegetation for one new carriageway, but would not involve clearing of endangered ecological communities or areas of high conservation value vegetation.<br>• Impacts on the Cooperabung Creek Nature Reserve.<br>• Visual impacts from the construction of one new carriageway to the west of the existing highway. | • Clearing up to 52 hectares of vegetation for two new carriageways, including endangered ecological communities, but would not involve clearing of high conservation value vegetation.<br>• Would not impact the Cooperabung Creek Nature Reserve.<br>• Visual impacts from the construction of two new carriageways to the east of the existing highway. |
| Property impacts | • Strip acquisition of Cooperabung Creek Nature Reserve and Ballengarra State Forest.<br>• 12 properties affected. | • Severance of Ballengarra State Forest.<br>• 8 properties affected. |
| Impacts on engineering performance and the Pacific Highway Upgrade Program objectives | • Would involve the re-use of the existing highway, which would be retained for use as the southbound carriageway.<br>• Construction would involve deep cuttings for one carriageway only.<br>• Would reduce the grade through Cooperabung Range.<br>• The northbound carriageway can be constructed clear of the southbound carriageway to minimise construction delays.<br>• Construction costs would be in the order of $65 million. | • Would involve the construction of two new carriageways.<br>• Construction would require deep cuttings for both carriageways.<br>• Construction would not be under traffic conditions. Limited road user delays expected.<br>• Construction costs would be in the order of $80 million. |

| Criteria | Preferred Route Corridor | Alternatives |
|---|---|---|
| **Section D** | **Blue option** | **Green, orange and purple options** |
| Environmental impacts | • Clearing up to 61 hectares of vegetation, including 20 hectares of high conservation value vegetation.<br>• Would not involve clearing endangered ecological communities.<br>• Noise conditions in Kundabung would remain similar to existing.<br>• Visual impacts from clearing vegetation. | • Clearing up to 68 hectares of vegetation, including 20 hectares of high conservation value vegetation.<br>• Would not involve clearing endangered ecological communities.<br>• Noise conditions in Kundabung would remain similar to existing.<br>• Visual impacts from clearing vegetation. |
| Property impacts | • Strip acquisition from Maria River State Forest.<br>• Requires acquisition from rural residential properties in Kundabung.<br>• 56 properties affected.<br>• The duplication of the existing alignment through this section takes advantage of the available road reserve and minimises property acquisition. | • Minor severance of Maria River State Forest.<br>• Requires acquisition from rural residential properties in Kundabung.<br>• 56 properties affected. |
| Impacts on engineering performance and the Pacific Highway Upgrade Program objectives | • Similar engineering performance to the alternatives.<br>• Can be more easily modified to improve safety by removing existing accesses to the existing highway.<br>• Duplication has a reduced environmental impact.<br>• Costs approximately $175 million. | • All routes have a similar engineering performance.<br>• Costs in excess of $190 million. |

### 3.3.5 Reasons why the Preferred Route Corridor was selected

The Preferred Route Corridor was selected as it provides the best overall balance between engineering, ecological, heritage, social, and economic considerations, with the benefits of:

- Reducing the number of crashes from 22.3 per 100 million vehicle kilometres to 12.8 per 100 million vehicle kilometres.
- Saving the community in the order of $4.2 million per annum by 2036.
- Reducing the personal effects of road crash trauma.
- Reducing travel times and freight transport costs.
- Strengthening the regional economy and encouraging regional economic development.

The orange option was selected for Section A because it:

- Avoids the proposed marine precinct located immediately north of the existing highway crossing at the Dennis Bridge.
- Minimises traffic delays during construction as most of the construction would be carried out away from the existing highway alignment.
- Retains the existing highway between Fernbank Creek and Telegraph Point as a local service road, providing for local traffic movements separate to the upgraded highway.

- Is 200 metres shorter in terms of overall route length.
- Minimises impacts to Glen Ewan Road and to property access, resulting in less economic impacts to businesses and rural properties.

A combination of refined orange and orange route options was selected for Section B because it:

- Would have the least overall noise impact on communities.
- Provides a bypass of Telegraph Point, a known area of crash concentration.
- Impacts fewer residential areas.
- Would have a significantly lower impact on endangered ecological communities, high conservation value habitat and state significant wetlands than other options, notwithstanding that it requires a slightly larger area of vegetation to be removed.

The green, purple and blue options were selected for Section C because they:

- Require the least amount of additional environmental disturbance as they follow the existing highway and would involve duplication of the existing alignment.
- Provide for slightly less vegetation removal, and also minimise the overall disturbance to the Cooperabung Creek Nature Reserve and the Ballengarra State Forest.
- Reduce the grade through Cooperabung Hill.
- Reduce the size of the cutting required in Cooperabung Hill and consequently reduce the overall construction costs.
- Allow the northbound carriageway to be constructed clear of the existing highway and therefore minimise construction delays.

The blue option was selected for Section D because it:

- Would have less impact on the Maria River State Forest and allows for forestry operations to remain in a larger portion of the state forest.
- Enables the existing access to the highway to be modified to improve road safety.
- Is the least cost option for motorway construction.
- Requires less land to be cleared for construction than other options.

### 3.3.6 Refinement of the Preferred Route Corridor and development of the Proposal

The Preferred Route Corridor was selected as a 150 metre wide corridor with wider sections in the vicinity of Fernbank Creek, Cairncross State Forest, Haydons Wharf Road and Cooperabung Hill to allow for possible interchanges and traffic arrangements, cuttings and refinement of the alignment.

The concept design for the Proposal has been refined and improved to further reduce environmental and social impacts whilst balancing the engineering and performance requirements. The environmental performance of the Proposal has also been improved by incorporating environmental management measures into the design. These design refinements have primarily occurred within the Preferred Route Corridor with the most notable exception being the relocation of the proposed interchange in the vicinity of Fernbank Creek to Blackmans Point Road following further investigations and consultation.

Following selection of the Preferred Route Corridor, it was identified that a small section, approximately 0.9 kilometres long, of the Pacific Highway between the preferred route and the Kempsey to Eungai project would not be upgraded to the same standard as the two sections on either side. This created potential safety concerns for highway users. The northern limit of the Proposal was subsequently extended from Maria River to Stumpy Creek to join the two projects and create consistent highway standards. The eastern service road also extends north beyond Stumpy Creek for approximately 320 metres to tie in with the proposed Kempsey to Eungai upgrade.

## 3.4 Summary of the need for the Proposal

The Proposal is needed to help achieve the economic and social objectives for the development of one of the State's fastest growing regions. Overall the completion of the Proposal would:

- Help achieve the objectives of the national and State transport, infrastructure and regional development strategies and plans as discussed in **Chapter 2 Strategic need for the Proposal**.
- Contribute to improving the State's overall transport network, particularly between Sydney and Brisbane.
- Facilitate orderly economic development in the area.
- Accommodate predicted population growth in the area.
- Improve safety and reduce crashes.
- Improve freight travel costs and reduce travel times.
- Separate through and local traffic.

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