

Executive Summary

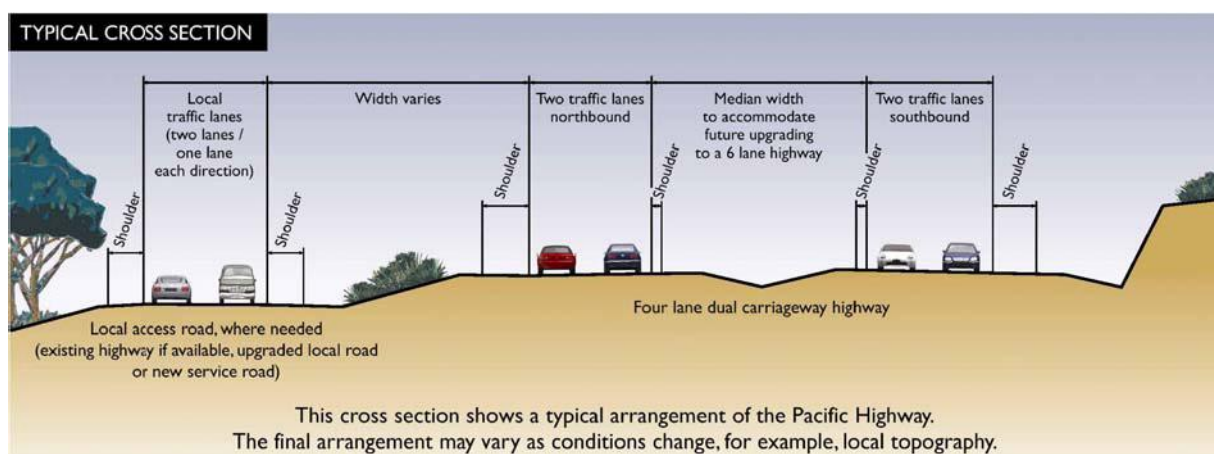
1. Completing the Upgrade of the Pacific Highway

In January 1996 the NSW and Australian governments announced their joint commitment to a 10 year program to upgrade the Pacific Highway between Hexham and the Queensland border. As of the end of July 2006, a total of 233 kilometres are now double-lane divided road. A further 380 kilometres of highway are under construction, have been approved for construction or have had a preferred route identified. This leaves only 103 kilometres of existing highway with a preferred route still to be identified.

The Pacific Highway is a AusLink National Network road. For the 10 years to June 2006, some \$2.3 billion has been invested by the NSW and Australian governments. Over the past 10 years, the NSW Government has committed \$1.66 billion and the Australian Government \$660 million.

In December 2005, the NSW and Australian governments announced a jointly funded program of \$960 million for three years to 2009. In May 2006, the Federal Budget announced an additional \$160 million, matched by NSW, for the period to the end of 2009, thereby increasing the total value of the new joint investment program from \$960 million to \$1.3 billion.

Both governments are jointly examining how the entire length of the highway can be upgraded to dual carriageway in the next 10 years.





Oxley Highway to Kempsey

This project involves the proposed upgrade of approximately 37.6 km of the Pacific Highway on the mid north coast of NSW, 66 km north of Taree.

The project commences at the intersection of the Pacific Highway and the Oxley Highway, near Port Macquarie. It extends for 37.6 km, over the Hastings and Wilson Rivers and Cooperabung Hill to the Maria River south of Kempsey.

The study area consists of a corridor, up to three kilometres wide, which generally surrounds the existing highway (as shown on Figure 1.2 in Section 1). In response to requests from sections of the Telegraph Point community, the study team has also investigated the feasibility of route options to the east of Telegraph Point. These options are located outside the November 2004 study area.

This report summarises the outcomes of the route options development phase, and the process of identifying a preferred route. It describes the four options that have been developed, and provides information on the criteria considered in the determination of the preferred route option.

2. Road Design and Upgrade Strategies

Design standards for the Pacific Highway Upgrade Program require two lanes in each direction, with consideration for the future addition of another lane each way, separated by a median of a desirable width of 12 metres. Traffic volume projections have been prepared for 20 years from 2016.

Two highway upgrade scenarios are being considered as part of the project:

- ▶ Class A or arterial standard – two lanes in each direction, 100 km/h posted speed, limited access condition roadway with at grade intersections; and
- ▶ Class M or motorway standard – two lanes in each direction (median width to accommodate future upgrading to three lanes in each direction), 110 km/h posted speed, controlled access condition roadway generally with grade separated interchange access.

The upgrade of the highway is expected to be completed in stages to meet traffic growth. Upgrade to Class A may be followed by a subsequent upgrade to Class M. Upgrading may also be completed on a staged basis.

The location of proposed grade separated interchanges and service roads will be determined during the concept design phase. The location of the existing interchange with the Oxley Highway to the south, the proposed grade separated interchange south of Kempsey (part of the Kempsey to Eungai Pacific Highway Upgrade project), connection to local road network and connectivity issues will all be considered in finalising the proposed grade separated interchange locations.

New service roads would be required in a Class M scenario to provide access to proposed grade separated interchanges or to provide a continuous alternate route. In a Class A scenario new service roads may be provided to assist with the rationalisation of at-grade intersections and private accesses.

The service road strategy would aim to improve safety by separating through and local traffic. This may involve use of existing local roads, sections of old highway or the existing highway. Where possible, the new service roads would be located within or immediately adjacent to the upgraded highway, but may also be located outside the preferred route corridor.

A local road strategy between Maria River and the proposed grade separated interchange south of Kempsey will also be undertaken.

The ultimate arrangement of grade separated interchanges and service roads may result in further impacts and benefits beyond those considered in this report and will be considered further during the Environmental Assessment of the preferred route.

3. Route Option Development and Preferred Route Selection Process

The route option development process involved the following steps:

- ▶ Review of existing data;
- ▶ Site visits – field and aerial inspections of the study area;
- ▶ Preliminary ecological, heritage, traffic, geotechnical and other investigations;
- ▶ A variety of community involvement activities to identify community interests, issues and concerns;
- ▶ Opportunities and constraints workshops;
- ▶ Options workshop to consider possible options;
- ▶ Identification and refinement of the feasible route options; and
- ▶ Preparation of the route options development report.

The route options development process concluded with the public display of the route options and the release of the Route Options Development Report. The public display of the route options provided the community with an opportunity to make review and comment on the route options.

The public display also marked the beginning of the Preferred Route Selection Process.

The selection of the preferred route involved the following steps:

- ▶ Public Display of the route options and receipt of submissions from the community;
- ▶ Review of submissions from the community;
- ▶ The Value Management Workshop;
- ▶ Additional investigations resulting from the community submissions and the Value Management Workshop;
- ▶ A Project Team Route Selection Workshop which considered the outputs of the Value Management Workshop, the community submissions and the results of additional investigations carried out; and
- ▶ Preparation of the Preferred Route Report.

4. The Study Area Characteristics

A summary of the key characteristics of the study area is provided below. Further information is provided within Section 3 of this report.

Overview of the Local Area

The study area is located between the intersection with the Oxley Highway (to the south) and Kempsey (to the north), within the Kempsey and Port Macquarie – Hastings Local Government Areas (LGA). Port Macquarie is the closest major town. The study area is dominated by rural land and forest reserves, with scattered rural residential development and a number of small villages. The villages of Telegraph Point and Kundabung are located within the study area. In 2001, the population of the study area and surrounds was approximately 3,800 people with higher population densities towards the south.

Traffic and Transport Issues

If the upgrading of the Oxley Highway to Kempsey section of the highway does not occur, it is projected that by 2016, there would be an average of 0.98 fatal crashes per annum and 10.8 serious injury crashes per annum, representing 29.35 crashes / 100 MVK per annum. By 2036 this would increase to an average of approximately 1.6 fatal crashes per annum and 17.8 serious injury crashes per annum, representing 29.45 crashes / 100 MVK per annum.

The results of the preliminary traffic investigations indicate that the Hastings River Drive to Telegraph Point section would require initial upgrading to Class A within the period 2007 to 2016 and upgrading to Class M standard prior to 2036 with an upgrade to six lanes by 2041.

The highway at the time of opening (assumed for planning purposes to be 2016), based on the “do nothing” scenario would either start to experience, or would already exhibit, unstable traffic flow conditions resulting in a level of service (LoS) D or E respectively in certain sections within the study area. Twenty years after opening the highway would operate at LoS E. This means that the highway would experience queuing and delays, as traffic volumes would be over capacity.

All intersections (as at-grade facilities), with the exception of Blackmans Point Road / Pacific Highway, would operate unsatisfactorily at the design horizon (2036). As a result, intersection / interchange treatments should be considered. Interchange locations would depend on which option is selected and the integration with the existing interchange with the Oxley Highway to the south and the proposed interchange as part of the Kempsey to Eungai project to the north.

The Annual Average Daily Traffic (AADT) on this section of the highway in 2004 ranges from 8,280 to 12,030 vehicles per day. The 85th percentile speed is 101 km/h and the average speed is 93 km/h.

Through traffic accounts for approximately 18% of northbound and 26% of southbound traffic volume. Heavy vehicles make up approximately 13% of the existing daytime (7am to 7pm) traffic volume and 43% of the existing night time (7pm to 7am) traffic volume.

Highway Road Reserve

Much of the existing road reserve is not of sufficient width and property acquisition would be required to achieve a 110 km/h design. Acquisition would be required if the upgrade involved duplication or realignment of the existing highway.

Carriageway Configuration

All lanes including overtaking lanes along the existing highway are 3.5 metres wide. Within the study area there are six lengths of overtaking lane northbound and seven southbound.

Horizontal and Vertical Alignment

The horizontal and vertical geometry of the carriageway contains lengths that do not comply with the 110 km/h design standards for the Pacific Highway Upgrade. Approximately 26% of the existing alignment does not meet this design standard. The main areas where the design standards are not met are from Hastings River Drive to Moorside Drive and from Ravenswood Road to the Maria River.

Intersections

Of the 45 intersections within the project, 14 do not comply with the 100 km/h sight distance criteria. The majority of the non-compliant intersections are located adjacent to horizontal curves or crest curves that restrict visibility.

Structures

Design standards suggest a minimum carriageway width of 10.5 metres for a four-lane facility with an SM1600 load standard. The assessment determined that none of the eight bridges, including the Dennis Bridge at Hastings River, meet these criteria, however compliance with SM1600 loading may be achieved on some bridges with strengthening works.

Drainage Infrastructure

Of the eight highway bridges within the study area, five have 1% Annual Exceedance Probability (AEP) immunity (one in 100 year flood level) based on preliminary analysis.

Highway Accesses

There are a total of 76 accesses to the highway. In order to improve the safety and efficiency of the highway the project needs to consider providing access to the highway via local access roads, combining access points, controlled access points, intersections and / or interchanges.

Indigenous Heritage

The NSW Department of Environment and Conservation Aboriginal Heritage Information Management System Register has identified that 18 Aboriginal heritage sites are located within the study area. These include five isolated artefacts, twelve artefact scatters and a scarred tree.

A number of unregistered sites of cultural significance to the local Aboriginal community are also known to occur within or in close proximity to the study area. This has been confirmed by consultation with the Aboriginal community.

Non-Indigenous Heritage

There are two non-indigenous heritage items listed on the Register of the National Estate located in close proximity to the study area. These are lime kilns located at Piper's Creek and Kundabung.

Eleven non-indigenous heritage items, located within or near the study area, are listed in Part 3 of Schedule 4 (Other Heritage Items) of the *Hastings Local Environmental Plan 2001* and Section 2 of the NSW State Heritage Inventory (items listed by local government and State Government agencies).

The Maria River bridge (northbound) of the Pacific Highway has been identified as a heritage item of State significance.

Visual Amenity

The study area is characterised by a variety of landscape settings, within a predominantly rural environment. The southern part of the study area is flat to gently undulating with a flat and forested landscape being broken by open pastureland on the Hastings River and Wilson River floodplains, the former being one of the identified key landmarks of the Pacific Highway.

The highway then reaches the village of Telegraph Point. North of Telegraph Point the highway is cut into the hill that rises above the village. It then passes through a mosaic of forest patches and pastureland in the vicinity of Cooperabung Creek, before entering the steeper forested landscape of the Cooperabung Creek Nature Reserve, Ballengarra State Forest and Cooperabung Range.

Flatter topography occurs to the north of Ballengarra State Forest, where the highway passes to the west of the main part of the village of Kundabung. It then climbs into the steeper forested country associated with the Maria River State Forest.

Noise

The results of modelling indicate that 87, or approximately 14%, of the potential receivers experience daytime noise levels that exceed the Department of Environment and Conservation's 'Redeveloped Highway' criteria of 60 dB(A). The results also indicate that 170, or approximately 28%, of the potential receivers experience night time noise levels that exceed the Department of Environment and Conservation's 'Redeveloped Highway' criteria of 55 dB(A).

The majority of these receivers are located in Telegraph Point. Additional isolated receivers are distributed along the remainder of the highway.

Terrestrial Ecology

Desktop investigations and targeted field work in key parts of the study area indicate that there is suitable habitat present for a number of threatened flora and fauna species, and rare flora species. The Commonwealth Department of Environment and Heritage Protected Matters Search Tool identified six terrestrial migratory species that may use the area for nesting habitat and require consideration.

Endangered ecological communities listed under the *Threatened Species Conservation Act 1995* have been identified within the study area, while a further three have been recorded in the vicinity of the study area and have the potential to occur.

A number of designated wildlife corridors have been mapped by DEC that pass through or within the immediate vicinity of the study area. In addition, a number of patches of key habitats mapped by DEC are located within the study area.

Aquatic Ecology

Database searches revealed that there are no records of threatened aquatic species within the study area. However, one endangered fish species listed under the *Fisheries Management Act 1994* and one rare flora species listed in the rare or threatened Australian plant (RoTAP) published list have the potential to occur. Five aquatic endangered ecological communities listed under the *Threatened Species Conservation Act 1995* are known to occur in the vicinity of the study area.

There are two wetlands listed by State Environmental Planning Policy No. 14 – Coastal Wetlands (SEPP 14) within the study area. These are located on Dalhunny Island in the Wilson River and on the northern bank of the Wilson River to the northeast of Dalhunny Island. There are also other wetland areas identified throughout the study area.

Topography

The study area comprises coastal floodplains, valleys and hills. Within the study area, the land rises from sea level to heights of approximately 166 metres. The topography in the south is characterised by undulating low hills and the coastal floodplains associated with the Hastings and Wilson Rivers. In the middle of the study area, north from the Wilson River to south of Kundabung, the coastal hills tend to be steeper and have the highest elevation within the study area. This area includes Allen Hill and Cooperabung Range and borders the broad low-lying coastal plain situated to the east. The northern portion of the study area traverses a number of watercourses and their associated valley flats.

Regional Geology

The underlying geology of the southern portion of the study area features Quaternary alluvial sand, silt, mud and gravel on the floodplains of the Hastings and Wilson Rivers. The low hills are made up of the Carboniferous Byabbara Beds and the Lower Permian Macleay Group that includes the Beechwood Beds and the Permian Thrumster Slate.

The underlying geology of the middle portion of the study area mainly comprises the Youdale, Kullatine, Majors Creek, Mingaletta and Cooperabung Formations around the Cooperabung Range, with lithic sandstone, mudstone, conglomerate, minor limestone and coal. In the northern portion of the study area, the underlying geology mainly comprises the Kempsey Beds with lithic sandstone, mudstone, pebbly sandstone and minor conglomerate.

Quaternary alluvial sand, silt, mud and gravel is located in the vicinity of Cooperabung Creek, Smiths Creek, Pipers Creek and Maria River.

Soil Issues

Preliminary subsurface investigations have revealed that the deep alluvial floodplains of the Hastings River and Wilson River include soft soils of up to 15 metres within the Hastings River floodplain and varying from two metres to eight metres within the Wilson River floodplain.

Geotechnical Issues

Geotechnical features of the study area were assessed using available information including known properties of geotechnical domains and the performance of embankments and rock cuttings along the existing highway. The southern portion of the study area (south from Wilson River), and the northern portion of the study area (north from Mingaletta Road) are characterised by numerous small scale slumps and wedge style failures.

Based on observations, future rock cuttings in the Cooperabung Range would need to consider the fractured and steeply dipping nature of the rock units within this area for incorporation into cut batter design and establishment of appropriate maintenance protocols.

5. Route Options

Development of Route Options

The route options were initially developed with the assistance of the Infrastructure Corridor Analysis (INCA) modelling program, which is run in a geographical information system (GIS) environment. INCA was used as a tool to establish a range of possible alignments, based on weightings assigned to the constraints within the study area.

Following the identification of possible alignments using INCA, further work was undertaken to develop feasible route options based on the project design criteria.

Once an alignment was developed horizontally the viability of the option was assessed vertically using MX road design software. This enabled the study team to assess grades, particularly with respect to heavy vehicle performance and estimate earthworks volumes for cost estimating purposes.

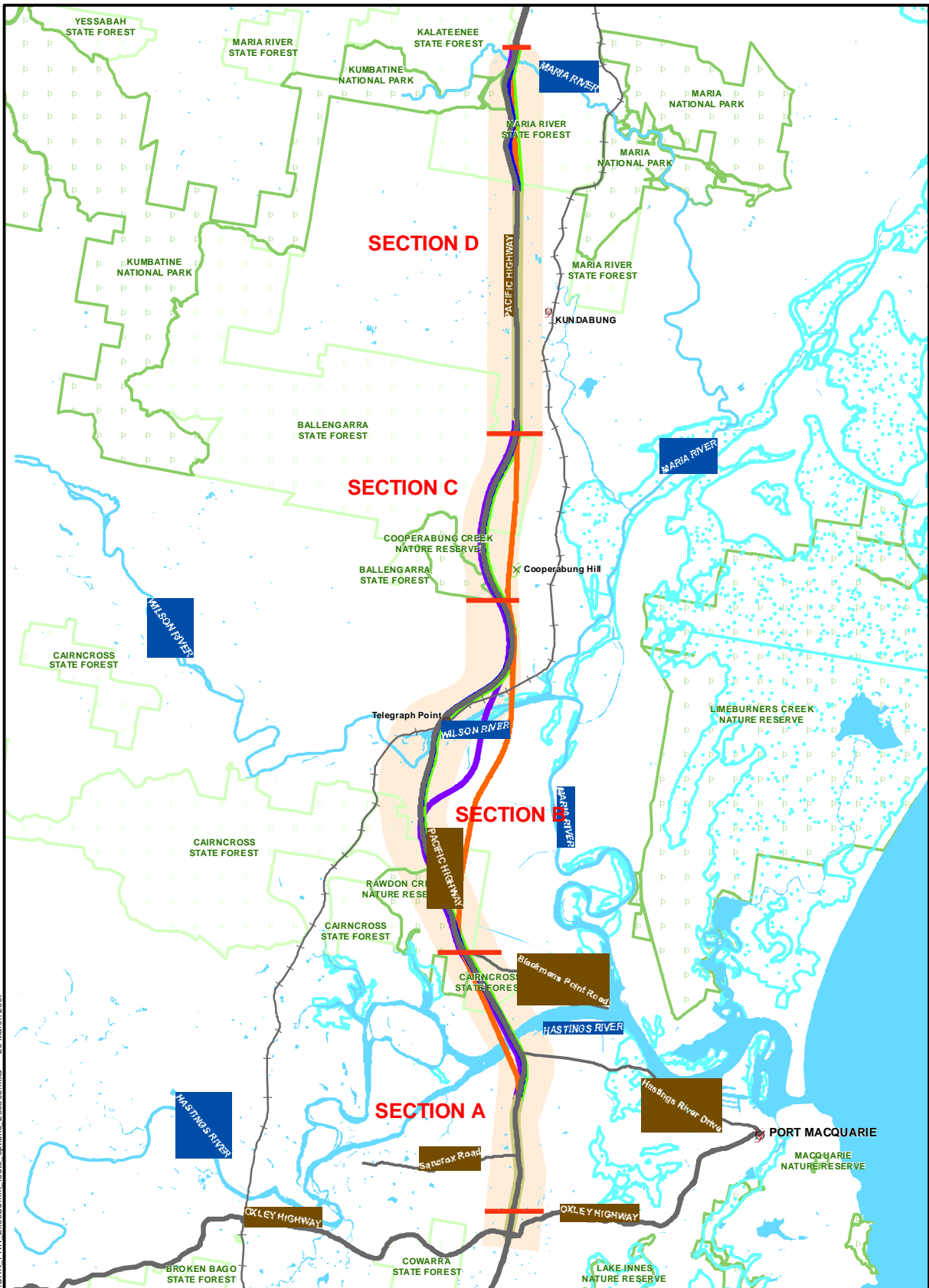
Four route options (blue, green, purple and orange) were identified which provide broad corridors within which it is considered feasible to build the new highway. The options follow a common corridor through some of the project sections. The corridors provided flexibility for refinement following further investigations and community consultation after the route option public display.

The Route Options figure below shows the four short listed route options. A brief summary of the four route options is provided in the table below. Further information on the route options is provided in Chapter 5 of this document.

Summary of Route Options placed on Public Display

| Option | Description |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blue | For the majority of the route, the Blue Option involves the duplication of the existing highway. Where realignment is required, e.g. in vicinity of Hastings River Drive, north of Blackmans Point Road, at Cooperabung Hill and north of Kundabung straight, two new carriageways would be constructed. Elsewhere, this option includes the rebuilding of the existing highway to current Pacific Highway Upgrade standards. |
| Green | The Green option is the same as the Blue option except for section of route in vicinity of Hastings River Drive and a straighter realignment north of Kundabung straight through Maria State Forest to the Maria River. |
| Purple | The Purple option is the same as the Green option for the majority of the route, However, between Moorside Drive and Haydons Wharf Road there is a realignment of the route to the east of Telegraph Point, across the Wilson River floodplain, the Wilson River and the North Coast Rail Line. |
| Orange | The Orange option is generally a realignment of the highway. In Section A the option is the same as Blue / Green / Purple options upto Fernbank Creek where the route diverts to the west of the existing highway over the Hastings River floodplain and the Hastings River. In Section B the route is a realignment to the east of the existing highway, further east than the Purple realignment. In Section C the route is a realignment to the east of the existing highway through Ballengarra State Forest, rejoining the existing highway at Mingaletta Road. For Section D the Orange option is the same alignment as the Green / Purple option until the end of the project. |

The Route Options figure below shows the four short listed route options. A full description of each of the four route options is provided in Section 5.1.



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| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>SCALE 1:175,000</p> <p>Map Projection: Universal Transverse Mercator Horizontal Datum: Geodetic Datum of Australia 1994 Grid: Map Grid of Australia, Zone 56</p> | <p>GRID</p> | <p>Legend</p> <ul style="list-style-type: none"> — Blue Option — Green Option — Purple Option — Orange Option — Common Corridor Study Area Highways Main Rd River/Creek Nat Park/Reserve State Forest Wetlands City Hill/Mountain Locality |
| <p>Note: Coloured options represent a 250 metre wide corridor, which includes 4 lanes, ie 2 lanes each way, separated by a landscaped areas</p> | | |

Spatial layers courtesy of Port Macquarie-Hastings Shire Council, Kempsey Shire Council, NSW Department of Lands, Geoscience Australia.

6. Outcomes of the Public Display

The Oxley Highway to Kempsey Route Options were on public display from 21 October to 2 December 2005. A number of consultation activities took place during the display period to publicise the display, inform the community and other stakeholders about the options under consideration and invite feedback on the options.

A number of issues, comments and concerns were raised, which are discussed in Chapter 6. The top five issues considered most important by the community when deciding the preferred route were:

1. Road safety and travel times
2. Noise
3. Separates traffic
4. Division of communities
5. Impact to private property / agricultural land

The majority of respondents felt that Orange Option best addressed the issues, however many of the feedback forms received were from people who lived in Section B. As Section B of the Orange Option offers a bypass of Telegraph Point to the east, many community members may have selected the Orange Option purely on this basis.

The public responses contributed to the assessment criteria and performance measures that have provided the framework to assess the options and establish the need for further investigations (where relevant) and potential route modifications.

7. Value Management Workshop

A two-day Value Management Workshop (VMW) was held in December 2005 following the public display of the route options. A VMW was seen as an appropriate tool to bring together a wide range of stakeholder interests and expertise to review the investigations undertaken to date, and on the balance of issues, to assess the options against agreed assessment criteria and determine a preliminary route to progress the project. The outcomes of the VMW were a key consideration in helping to determine a preferred route for the project.

The recommended preliminary route corridors from the VMW process were:

- ▶ In Section A, the Orange option was recommended as the preferred option to move the project forward for more detailed investigation and development because it had the highest assessment in terms of functionality, social and economic criteria and had the ability for improvement to its environmental performance with some slight alignment adjustments at the northern end of the Section;
- ▶ In Section B, the Orange option was recommended as the preferred option to move the project forward for more detailed investigation and development because it had the highest assessment in terms of functionality, social and economic criteria and has the ability for improvement to its environmental performance with some slight alignment adjustments at the southern end of the Section;
- ▶ In Section C, the common Blue / Green / Purple option was recommended as the preferred option because it had a consistently higher ranking, on average, in the social and economic and natural and cultural environment criteria categories; and

- ▶ In Section D, the Green / Purple / Orange option was recommended as the preferred option because it had a consistently higher ranking, on average, in the social and economic and natural and cultural environment criteria categories; and

The group also recommended that the project team investigate the feasibility of altering the alignment of the Orange Option in Sections A and B in an attempt to minimise impacts on Cairncross State Forest, Rawdon Creek Nature Reserve, koala habitat, tea tree farming and key agricultural land. As a result, a Refined Orange option was developed from Fernbank Creek to Wilson River.

8. Project Team Route Selection Workshop

A Project Team Route Selection Workshop (RSW) was held in March 2006 to assess the four route options placed on public display against the assessment criteria. The RSW also assessed the Refined Orange Option which was developed following the recommendations of the VMW.

The assessment criteria used in the RSW was developed specifically to address the Pacific Highway Upgrade Program objectives as well as the specific project objectives. The RSW was seen as an appropriate tool to bring together the relevant technical team members of the GHD project team and RTA representatives to:

- ▶ Review the four route options placed on public display;
- ▶ Review the outcomes of investigations undertaken to date;
- ▶ Review the details of submissions received in response to the Public Display of route options;
- ▶ Review the outcomes of the VMW including details of the new Refined Orange Option which was developed following and in response to the recommendations made by participants at the VMW;
- ▶ Assess all five options against the assessment criteria; and
- ▶ On balance of the assessment and taking into consideration the submissions received during the public display and the outcomes of the VMW, recommend a preferred route for the RTA's consideration.

The recommended preliminary route corridors from the RSW process were:

- ▶ In Section A the Orange option;
- ▶ In Section B the Refined Orange option;
- ▶ In Section C the Blue / Green / Purple option; and
- ▶ In Section D the Blue option.

9. Preferred Route

In March 2006 and after consideration of the following:

- ▶ Issues raised in community submissions from the public display of route options which took place between 21 October 2005 to 2 December 2005;
- ▶ Recommendations from the Value Management Workshop held in December 2005;
- ▶ The findings of further technical studies undertaken following the Value Management Workshop; and
- ▶ Recommendations from the Project Team Route Selection Workshop held in March 2006.

The RTA determined that the following option be recommended to the Minister for Roads to progress the project to the next phase. The preferred route for each project section is summarised in the table below and shown on the following figure.

Preferred Route

| Section | Section Description | Preferred Option |
|---------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| A | 700m north of Oxley Highway Interchange to Blackmans Point Road | Orange Option |
| B | Blackmans Point Road to Cooperabung Drive | Combination of Orange and Refined Orange options including a wider corridor through Cairncross State Forest |
| C | Cooperabung Drive to Mingaletta Road | Blue / Green / Purple Option |
| D | Mingaletta Road to Maria River | Blue Option |

Description of the Preferred Route

Section A

Commencing 700 metres north of the Oxley Highway interchange (end of existing duplication), the existing highway alignment will be duplicated through to just south of Fernbank Creek. The preferred route then deviates to the west of the existing alignment and crosses the Hastings River approximately 400 metres upstream of the existing Dennis Bridge, continuing on a straight alignment and rejoining the existing alignment south of Blackmans Point Road.

The new crossing of the Hastings River (and Glen Ewan Road) would require new twin-bridges and would maintain existing navigational clearances. Two new bridges are also required at Fernbank Creek.

The preferred route in the vicinity of Hastings River has no direct physical impact on the existing shipyard and marine precinct adjacent to Dennis Bridge, however it introduces potential land use conflicts with agricultural land as it deviates from the existing highway alignment. The alignment has a minor impact on Cairncross State Forest and Rawdon Creek Nature Reserve north of Hastings River and on the west side in the vicinity of Blackmans Point Road. The preferred route also brings the highway closer to some rural properties at Glen Ewan Drive and north of Hastings River.

The Hastings River floodplain on both sides of the Dennis Bridge will require special construction techniques to address the existing deep soft soil conditions.

The location of a possible grade separated interchange at a location either south of Fernbank Creek or in the vicinity of Blackmans Point Road or Bill Hill Road (Section B) will be determined as part of the detailed investigations to be undertaken for the preferred route and during the concept design phase. The location of the existing interchange with the Oxley Highway to the south, connection to local road network and connectivity issues will all be considered in finalising the proposed grade separated interchange location.

Section B

At Blackmans Point Road, the preferred route then deviates to the east, across the Wilson River east of Telegraph Point, over the North Coast Railway and Haydons Wharf Road, rejoining the existing highway alignment south of Cooperabung Drive.

As the new carriageways depart from the existing highway, they pass through Cairncross State Forest, cross over Bill Hill Road and emerge from the forest to pass east of Moorside Drive, and the ski park facility.

The alignment in this area lies outside the study area set for the project in November 2004.

A wider preferred route corridor has been adopted through Cairncross State Forest to allow further investigations and assessment so as to position an alignment that has least impact on koala habitat, Cairncross State Forest, agricultural, private property and utilities.

There would be significant private property acquisition, in addition to acquisition of state forest throughout this section and consideration of soft soil conditions in the floodplain area is necessary.

The alignment crosses the Wilson River at the eastern tip of Dalhunny Island approximately 2.4 km downstream from the existing bridge at Telegraph Point. The new twin-bridges over the Wilson River would maintain existing navigational clearance. New bridges will also be required over the North Coast Railway Line, Haydons Wharf Road and Cooperabung Creek.

Class M conditions would exist along the majority of this section at project opening. Provision of a possible grade separated interchange in the vicinity of Haydons Wharf Road will be investigated as part of the concept design phase.

Section C

From Cooperabung Drive to Mingaletta Road the preferred route is a duplication of the existing alignment.

A major consideration north of Cooperabung Drive is Cooperabung Hill, which rises from a level of approximately 30 metres (AHD) to a level of 100 metres (AHD). The existing vertical curve through Cooperabung Hill would be lowered approximately 11 metres to achieve a 110 km/h design speed. The extent of widening of the existing rock cuttings through this area will be investigated in the concept design phase.

The preferred route has a minor impact on Cooperabung Creek Nature Reserve and Ballengarra State Forest between Cooperabung Hill and Mingaletta Road. A concentration of koala road kills through the Ballengarra State Forest area indicates an important movement corridor for koalas in this area and would require particular attention to alleviate impacts on wildlife.

Section D

From Mingaletta Road, along Kungabung straight to Ravenswood Road (north) the preferred route is a duplication of the existing alignment. Between the end of the Kundabung straight and the Maria River, realignment on the east side of the existing highway is required using flatter curves to achieve a 110 km/h design speed. At Maria River the realignment connects to the southern end of the existing section of dual carriageway.

Between the end of the Kundabung straight and the Maria River, realignment on the east side of the existing highway is required using flatter curves to achieve a 110 km/h design speed. At Maria River the realignment connects to the southern end of the existing section of dual carriageway.

New bridges would be required at Smiths Creek, Pipers Creek and Maria River (northbound).

North of Kundabung straight, the existing alignment passes between Kumbatine National Park and Maria River State Forest. The realignment in this section would encroach upon the Maria River State Forest where there is a known koala movement corridor.

The existing rest area facility opposite Smiths Creek Road would require reconstruction and the existing rest area facility south of Maria River may be retained or a new facility constructed adjacent to the realignment. If the Maria River facility is retained new access to the rest area would be constructed as part of the new realignment.

Project Cost Estimates

Strategic cost estimates have been prepared for the preferred route for the Class A and Class M upgrade scenarios. The estimates were based on plans and long-sections of the preferred route as well as preliminary geotechnical investigations of the study area.

These estimates assume that the upgrade will be undertaken in one stage, however it is likely that the highway upgrade will be undertaken in stages, ultimately to a Class M facility.

Strategic Cost Estimates for the Preferred Route

| Scenario | Cost of Preferred Route (\$ Million 2006) | | | | |
|----------|-------------------------------------------|------------------------|------------------------|------------------------|--------------------|
| | Section A ¹ | Section B ¹ | Section C ¹ | Section D ¹ | Total ¹ |
| Class A | 180 | 210 ² | 50 | 115 | 555 |
| Class M | 195 | 230 ² | 65 | 140 | 630 |

Note: 1 Total rounded to the nearest \$5 million.

Note: 2 The cost within Section B may vary depending upon final alignment of the Preferred Route within Section B.

10. Next Steps

The proposed next steps for the Oxley Highway to Kempsey Project are to:

- ▶ Refine the alignment and prepare the concept design for the preferred route;
- ▶ Submit the proposal to the Department of Planning for approval under Part 3A of the Environmental Planning and Assessment Act 1979. The proposal would be the subject of an environmental impact assessment which would examine the potential impacts of the preferred route. The environmental impact assessment may include a statement of commitments in respect of environmental management and mitigation measures proposed to be undertaken if the project is approved;
- ▶ When completed, the environmental impact assessment would be publicly exhibited and submissions sought. The RTA may be asked to prepare a report on the submissions, consider modifications to the project to minimise environmental impacts and revise its statement of commitments; and
- ▶ The Department of Planning would consider the environmental impact assessment, the public submissions and any report requested from the RTA in recommending to the Minister for Planning whether the project should be approved.