



# Oxley Highway to Kempsey

Upgrading the Pacific Highway

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## Value Management Workshop Report

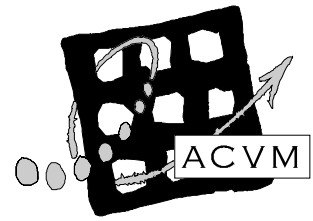
March 2006

## **Foreword**

The Pacific Highway Office of the Roads and Traffic Authority engaged the Professional Services Contractor GHD to undertake route option investigation, concept development and environmental assessment for upgrading of the Pacific Highway between the Oxley Highway and Kempsey.

To assist GHD in the development of this project, the Australian Centre for Value Management (ACVM) undertook a value management study.

The enclosed report is a record of the proceedings from the value management workshop held on 12 and 13 December 2005.



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# Report

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## Background

The Pacific Highway is the main road transport corridor serving the north coast region of NSW and is a major highway link between Sydney and Brisbane. The Pacific Highway Upgrade Program is a commitment by the NSW and Commonwealth Governments to improve the condition of the highway, reduce road accidents and improve transport efficiency.

The section of the highway (subject of this project) between Oxley Highway (at Port Macquarie) to Maria River south of Kempsey is approximately 38km long and serves as part of the local and regional road network. The traffic on this section of road is a mix of heavy and other vehicles as well as local and through traffic with different destinations and demands.

The conflict between these different traffic types becomes worse during holiday periods. Under the current road conditions, traffic conflicts at intersections and property access points result in a reduction in safety for the people living in and around the Study Area as well as the highway users.

In addition, the horizontal and vertical geometry of the existing highway contains long lengths that do not comply with the 110km/h design criteria for the Pacific Highway Upgrade Program.

Without upgrading, and as other sections of the highway are improved, this section of the highway would incur an increasing number of crashes and traffic delays in proportion to the ongoing growth in traffic volumes and would not meet the aims of the NSW and Commonwealth Governments as well as community needs of improving local access, safety, traffic efficiency and capacity for this section of road.

Investigations to upgrade this section of the highway commenced in September 2004 with the Roads and Traffic Authority (RTA) commissioning GHD (the Study Team) to undertake route option investigation, preferred route selection processes and concept development within the Study Area (see **Figure 1**).

The preferred route option is to meet the future transport needs for the highway whilst balancing social, environmental, heritage, functional, economic and cost factors.

For the purposes of identifying and assessing corridor options, the 38km long Study Area has been divided into four sections from south to north (see **Figure 1**):

- **Section A** – 700 metres north of Oxley Highway Interchange to Blackmans Point Road. Key features within this section include agricultural, industrial and shipyard businesses, the Hastings River and its floodplain with potentially sensitive ecological communities, Cairncross State Forest and Rawdon Creek Nature Reserve
- **Section B** – Blackmans Point Road to Cooperabung Drive. Key features within this section include the village of Telegraph Point, which extends both north and south of the Wilson River, waste management and recreational facilities, the Wilson River and floodplain including SEPP 14 wetland, North Coast Railway Line, Cairncross State Forest and Rawdon Creek Nature Reserve
- **Section C** – Cooperabung Drive to Mingaletta Road. Key features within this section include Cooperabung Hill, Yarrabee Quarry, Cooperabung Creek Nature Reserve, Ballengarra State Forest and the old Pacific Highway
- **Section D** – Mingaletta Road to Maria River. Key features in this section include the village of Kundabung, the Maria River, Maria River State Forest and Kumbatine National Park

A number of route corridor options have been investigated within the Study Area. As a result a short list of four options for the upgrade of the highway has been placed on public display with public submissions being sought.

The development of the four shortlisted corridor options along with the findings of the preliminary environmental and engineering investigations undertaken within the Study Area have been documented in the RTA's *Pacific Highway Upgrade – Oxley Highway to Kempsey: Route Options Development Report* (RTA/Pub 05.220, October 2005). The four corridor options placed on public display are identified as:

- **Blue Option**
- **Green Option**
- **Purple Option**
- **Orange Option**

Each option is defined as a 250 metre wide corridor. Preliminary road alignments within these four options have also been developed and investigated by the Study Team. In developing the corridor options it became evident that there existed two distinct common sections within the Study Area in which all four options co-existed.

These common sections (or common corridors) occur in the following locations:

- **Common Corridor No. 1** – within Section A (being 700m north of the Oxley Highway to 500m south of Fernbank Creek), approx. length: 3.4 km
- **Common Corridor No. 2** – within Section D (being Mingaletta Road to the northern intersection with Ravenswood Road), approx. length: 7.0 km

In other sections, two or more of the corridor options were common. The VMW only considered these sections. The location of the four options, the common corridors and key features of each route option are shown in **Figure 1**.

Now that the shortlist of corridor options have been developed and displayed for comment, a Value Management Workshop (VMW) was seen as the 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 and assessment of the options against agreed assessment criteria, determine a preferred direction for further investigation to progress the project's development.

The assessments of the value management workshop are seen as one input into the process for determining the preferred route for the project.

The Australian Centre for Value Management (ACVM) was commissioned to facilitate and report on the workshop which was attended by a range of stakeholders on **12<sup>th</sup> and 13<sup>th</sup> December 2005**. A list of participants who attended the workshop can be found in **Appendix 1**.

## Workshop Objectives

The objective of the workshop, as presented to the participants, was to “**Obtain a common understanding of the project and its objectives, review the work undertaken to date and to recommend a preferred direction, if appropriate, so as to progress the project to the next stage of development.**”

The workshop objectives to achieve this were stated as:

- *Clarify the objectives of the project*
- *Examine the shortlisted options developed and identify potential value improvements to meet the project objectives*
- *Recommend a preferred option(s) to the RTA to progress the project*
- *Develop an action plan to progress the project*

This report has been compiled by ACVM and seeks to provide an objective overview of the project aspects discussed and the outcomes formulated by the end of the workshop.

## Workshop Activities

The workshop process builds on the perspectives as well as the detailed and specialist knowledge which resides with the workshop participants then structures the review and option assessment from a functional base (ie. what must the project achieve to be successful and how well do the options perform against these?).

During the workshop, background material was presented (**Appendices 2, 3 and 4**). What was important about the project from various stakeholder perspectives was identified and shared. The problem situation and the project objectives were reviewed. Assumptions being made about the project were identified and challenged from various perspectives.

Assessment criteria were developed and weighted under three key themes/perspectives (Functional, Social and Economic as well as Natural and Cultural Environment) based on what participants considered important (ie. of value) for later evaluation of the corridor options (**Appendix 2**).

Using this information, the shortlisted options (to meet the project objectives and address the problems identified) were reviewed by the group (**Appendix 3**).

The group evaluated the corridor options in each section being:

- In **Section A** – Orange and Green/Blue/Purple (common) Options
- In **Section B** – Orange, Purple and Blue/Green (common) Options
- In **Section C** – Orange and Green/Blue/Purple (common) Options
- In **Section D** – Blue and Orange/Green/Purple (common) Options

The options were evaluated using the assessment criteria and the indicative cost of each option (within each section) to determine which option participants would recommend (in each section) as the preferred option to progress the planning of the project to the next stage of development.

The result of the evaluation (as agreed by the participants) indicated that the **Orange Option** in **Sections A and B**, the common **Green/Blue/Purple Option** in **Section C** and the common **Orange/Green/Purple Option** in **Section D** performed, on balance, better than the other options against the criteria. However this recommendation was subject to a number of issues raised during the workshop being addressed (**Appendix 3**).

The workshop discussions led the group to conclusions and actions as outlined below.

## Workshop Outcomes

By the end of the workshop, the participants had:

- **Confirmed** the Pacific Highway Program Objectives, which reflect what the project must do to be successful in achieving its purpose, and agreed that the objectives would address the problems being experienced along this section of the highway if they were achieved. The program objectives were:
  - Significantly reduce road accidents and injuries
  - Reduce travel times
  - Reduce freight transport costs
  - Develop a route that involves the community and considers their interests
  - Have a route that supports economic development
  - Manage the upgrading of the route in accordance with ecologically sustainable development (ESD) principles
  - Provide value for money
- **Identified** assumptions being made about the project from various perspectives and assessed whether it was safe to proceed with planning based on these assumptions or whether they needed to be resolved as planning proceeded (see **Appendix 2**)
- **Identified** assessment criteria under three key perspectives (Functional, Social and Economic, and Natural and Cultural Environment) based on what participants considered important for later assessment of the shortlisted corridor options. The assessment criteria to assess the corridor options were agreed as:

### Functional

- Capacity to stage and achieve early benefits
- Safety risks during construction
- Route length and grade efficiency (ie. travel time)
- Constructability (including length across floodplain)

### Social and Economic

- Number and area of properties acquired
- Consolidation of communities
- Compatibility with existing businesses and planning proposals
- Impacts on agricultural, forest and rural lands (commercial, productive land)
- Noise impacts on existing and new receivers
- Views and aesthetics of the road from the community

### Natural and Cultural Environment

- Impact on wildlife corridors
- Impact on Aboriginal heritage
- Impact on non Aboriginal heritage
- Impacts on waterways and wetlands
- Impact on threatened species (including koalas and habitat)
- Area of high conservation value (HCV) / ecologically endangered communities (EEC) vegetation cleared
- Total area of native vegetation cleared (excluding other criteria involving cleared vegetation)
- **Reviewed** the shortlisted corridor options tabled for the project, obtained an understanding of their relative merits and weaknesses (see **Appendix 3**).
- **Assessed** the shortlisted corridor options in each section against the assessment criteria and ranked the performance of each option. The relative project cost estimates for each option in each section was also discussed (see **Appendix 3**)
- **Concluded** as a result of undertaking the assessment, that on balance:
  - In **Section A, the Orange Corridor Option** was recommended as the preferred option to move forward for more detailed investigation and development to progress the project because it is the most compatible with existing major businesses, it allows for greater separation of the ultimate bridge structures (ie. the new bridges from the existing bridge) with resultant aquatic and safety advantages and it provides construction advantages over the other corridor options.

However, this recommendation was made subject to considering the potential for realignment at the northern end of Section A to minimise impacts on the Cairncross State Forest and Rawdon Creek Nature Reserve (ie. move the corridor to the east and parallel to the highway), access for existing residents along the south bank of the Hastings River (currently accessible via Glen Ewan Road) being maintained and resolving a suitable "Gateway" presentation for Port Macquarie from the north

- In **Section B, the Orange Corridor Option** was recommended as the preferred option to move forward for more detailed investigation and development to progress the project because it has superior social and economic benefits (for the Telegraph Point community) as well as its better functional performance over the other options (although it is acknowledged there will be an environmental loss). It has the opportunity for improvement at the southern end (after further investigations) with respect to impacts on the farms and the State Forest.

However, this recommendation was made subject to an appreciation that the mitigation measures are likely to involve substantial costs, undertaking the feasibility of realigning the option (ie. moving the corridor further to the east) and avoiding/minimising the impacts on environmental considerations, farms and the State Forests, undertaking more detailed environmental studies in Cairncross State Forest (near Wilmaria Drive) and north of Wilson River to determine the impacts, undertaking an Aboriginal cultural heritage assessment (based on engagement with the local Aboriginal people) and a better understanding of the impacts on businesses and properties in the area

- In **Section C, the common Green/Blue/Purple Corridor Option** was recommended as the preferred option to move forward for more detailed investigation and development to progress the project because it has environmental, social and economic advantages which outweigh the functional advantages of the alternative option and the concerns about the potential restrictions to the existing Yarrabee Quarry with the alternative option. It also has the lowest cost.

However, this recommendation was made subject to ensuring the developed design has minimal impact on the Cooperabung Hill climb track

- In **Section D, the common Orange/Green/Purple Corridor Option** was recommended as the preferred option to move forward for more detailed investigation and development to progress the project because it is a straighter alignment, it has improved grades and will allow higher vehicle operating cost savings. Also it allows work to proceed in a new corridor without major disruptions to vehicles on the existing highway, north from the northern intersection with Ravenswood Road.

However, this recommendation was made subject to having more detail and a better appreciation of the impacts on the flora and fauna for this option, refining the option to minimise incursion into the Maria State Forest (ie. move closer to existing highway) whilst balancing the separation of the corridor from the existing highway during construction, ensuring the mitigation measures for fauna are practical and feasible to avoid the east to west segregation and severance and clarification of the cost difference between this corridor option and the Blue Option

- **Drew other conclusions** such as:
  - The Study Team needs to prove up the materials arising from the workshop including the recorded assumptions and the "subject to" items accompanying the recommendations
  - The workshop group acknowledged that the recommendations are made based on the level of information available at the time of the workshop which requires supplementation
  - Some of the options could have significant environmental impacts (ie. flora and fauna impacts) which need to be costed and realistic allowances for mitigation measures factored into the project budget
  - The Study Team needs to continue consultation with the Aboriginal communities and the Elders to clarify possible heritage constraints (and any potential LALC matters which may impact on the project)
  - There is still a need to determine staging and local access arrangements for the project (ie. separated carriageway, Class M or Class A standard road, achieving early benefits, etc)
  - The workshop was a positive experience which embraced perspectives across a broad cross section of stakeholders and contributed to the successful workshop outcomes

- **Developed** an outline of the process and direction (Action Plan) for the project to move forward from here (see **Appendix 3**). Key points raised about the next steps in the process included:
  - There are three elements of the process which will come together to inform the Minister for Roads and assist the decision on the preferred route for this section of the Pacific Highway Upgrade. These are:
    - The public submissions and formal comments of shortlisted corridor options
    - The Study Team's separate Route Selection Report and recommendations
    - The Value Management Workshop recommendations
  - It is expected that the Minister will make a decision on the preferred corridor by mid 2006
  - Preliminary design and specialist studies will then commence. It is at this stage, issues such as access points to the highway and the packaging elements of the project with projects to the north will be considered
  - An environmental assessment will be submitted to the Department of Planning for approval

It was reinforced that this section of the Pacific Highway is currently unfunded for construction. The relative priority for this section still needs to be determined. However planning will proceed and may require the development of a staged approach (ie. Class A standard road) to the ultimate solution (Class M standard road)

  - The NSW and Commonwealth funding model to complete the upgrade of the Pacific Highway from Hexham to the Queensland border will determine the quantum and opportunity for timing of both the planning and construction of all new works.

## Diagram indicating the Shortlisted Corridor Options

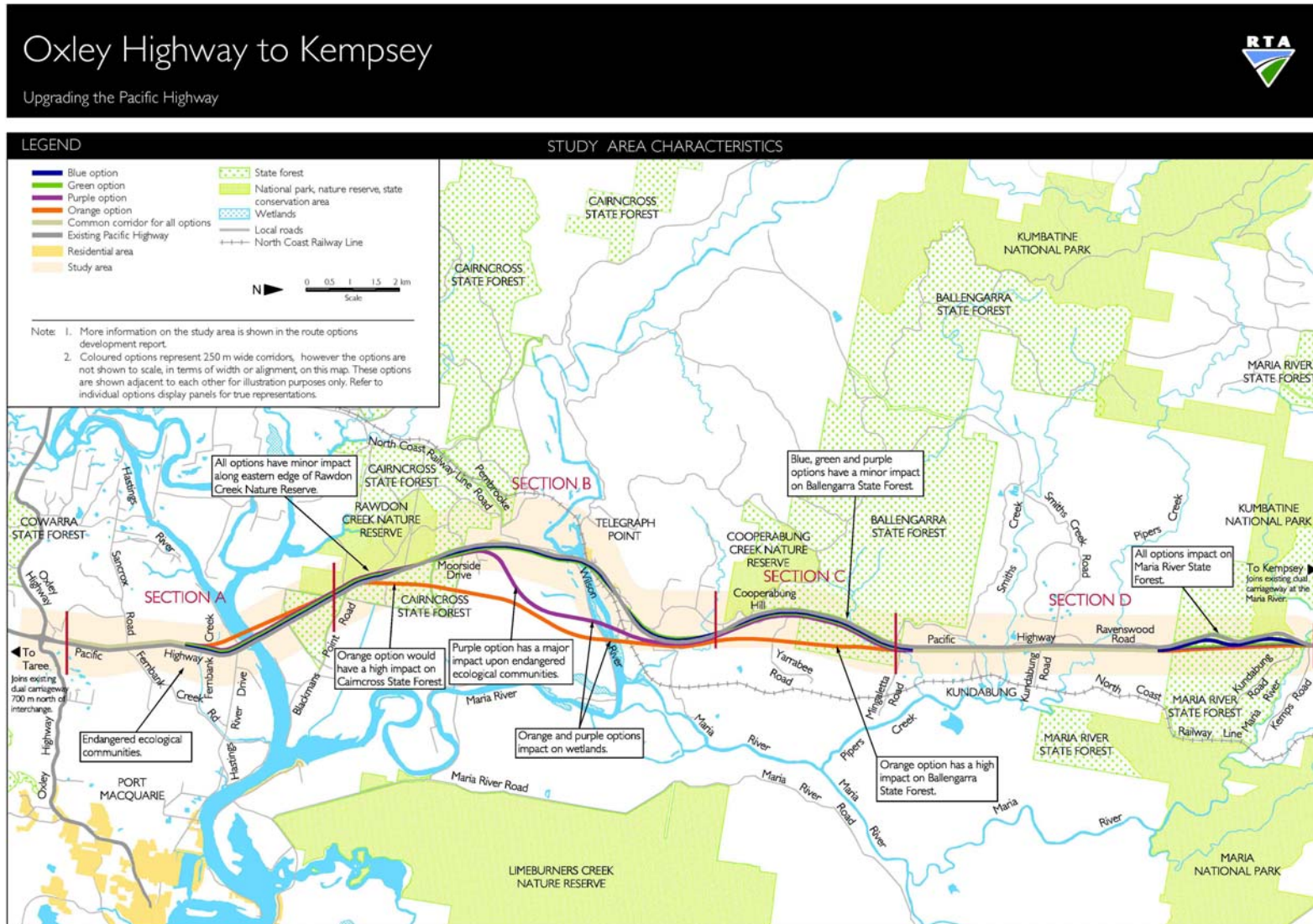


Figure 1: Shortlisted Corridor Options (diagram supplied by GHD)

## **Appendix 1. List of Participants**

# PACIFIC HIGHWAY UPGRADE: OXLEY HIGHWAY TO KEMPSEY VALUE MANAGEMENT WORKSHOP

## PARTICIPANTS LIST

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### Project Stakeholders

Bob Sharpham	Councillor and Deputy Mayor, Port Macquarie-Hastings Council
Cliff Toms	Technical Services Manager, Port Macquarie-Hastings Council
Steve Finlay	Infrastructure, Port Macquarie-Hastings Council
Jim Gribbin	Councillor, Kempsey Shire Council
David Thompson	Regional Environmental Officer, Department of Natural Resources
Glenn Snow	Senior Planning Officer, Department of Planning
Denise Wright	Environmental Planning Officer, Department of Planning
Scott Hunter	Senior Regional Operations Officer, Department of Environment & Conservation
Kelly Roche	Senior Threatened Species Officer, Department of Environment & Conservation
David Ward	Conservation Manager, Department of Primary Industry
Jeff Brownlow	Department of Primary Industry – Mineral Resources
Vince Cook	Kempsey Local Aboriginal Land Council
Ruth Campbell	Dunghutti Elders
Tony Thorne	Community Liaison Group Member
Brad Hooper	Community Liaison Group Member
Michelle Hollis	Community Liaison Group Member
Ron Clapton	Community Liaison Group Member
Dr Vanessa Standing	Environmental Focus Group Member
John Jeayes	Environmental Focus Group Member
Heidi Novosell	Country Manager, NRMA

### Roads and Traffic Authority

Mark Eastwood	Senior Project Development Manager
Steve Williamson	Project Development Manager
Gareth Collins	Senior Urban Designer, Road Network Infrastructure
Christophe Steinbach	Project Development Officer
Scott Lawrence	Environmental Advisor
Nigel Robinson	Aboriginal Programs Advisor

### GHD Study Team

Andrew Geddes	Project Manager
Graeme Robinson	Engineering Team Leader, OHK
Simon Pearce	Planning and Environment Team Leader
Melanie Miels	Community Liaison Officer
Matthew Shrimpton	Graduate Civil Engineer
Glenn McDiarmid	Spatial Systems Co-ordinator (Workshop Assistance)

### Workshop Facilitation Team

Ross Prestipino	Facilitator, ACVM
Alan Butler	Co-facilitator, ACVM

## **Appendix 2. Project Information and Analysis**

## Project Information and Analysis

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The information presented in this Appendix is a consolidation of the general outputs and perceptions by the workshop group as they shared information about the Pacific Highway Upgrade: Oxley Highway to Kempsey Project which allowed them to later make comparisons of corridor options based on the analysis of what the project was required to achieve.

### The Strategic Context of the Project

In order to allow the participants to obtain an understanding of the project's context, Mark Eastwood, Senior Project Development Manager, RTA outlined the strategic context of the project (the "Big Picture") within the context of the Pacific Highway Upgrade Program.

Key points raised in his presentation included:

- The purpose of the Pacific Highway is:
  - As a major transport asset of National significance
  - To provide safe and efficient transportation of people and goods to destinations between Sydney and Brisbane
  - To service coastal townships and populations along the route
  - To support National, Regional and Local economic development
- The Pacific Highway Upgrade Program is currently in its 10<sup>th</sup> year and the RTA is working on various projects (at various stages of planning, development or construction) from Hexham to the Queensland border. Only five areas remain (of which Oxley Highway to Kempsey is one) where planning for the highway upgrade had yet to commence
- The Pacific Highway Upgrade Program Objectives are to:
  - Significantly reduce road accidents and injuries
  - Reduce travel times
  - Reduce freight transport costs
  - Develop a route that involves the community and considers their interests
  - Have a route that supports economic development
  - Manage the upgrading of the route in accordance with ecologically sustainable development (ESD) principles
  - Provide value for money
- Strategic considerations in meeting this are:
  - There is a need to secure a corridor for the future upgrade of the whole highway
  - There is a need to identify a preferred route for the Oxley Highway to Kempsey Section of the highway
  - Develop solutions that facilitate staged construction
  - Planning for the project is being funded by the State Government as part of its \$1.6 billion contribution to the 10 year upgrading program (\$2.2 billion total)
  - What is the future (beyond the 10 year program)?
    - The State Government is committed to continue the upgrade of the Pacific Highway
    - Federal Government released AusLink White Paper which maintains \$60 million/year to the end of current 10 year program (2006) and increases contributions to \$160 million/year over the following 3 years to match State Government contributions
- Key drivers for the Program and the Project are:
  - Increasing pressure to accelerate the completion of dual carriageway due to:
    - Road safety (crashes including fatalities still high)
    - Increased travel demand from rapid population growth on the North Coast and increased interstate traffic (including freight)
  - Loss of amenity to local communities such as:
    - Highway noise
    - Local and through traffic interactions
  - Potential environmental impacts (ie. flora and fauna, heritage)
  - Economic considerations (ie. constructability, cost and value for money)
- The Project has to strike a balance between transport needs, social needs and environmental needs while providing value for money and the ability to be staged

## Port Macquarie-Hastings Council Perspective

A Port Macquarie-Hastings Council perspective of the Oxley Highway to Kempsey Section of the Pacific Highway Upgrade was outlined by Cliff Toms, Technical Services Manager, Port Macquarie-Hastings Council. Key points made in his presentation included:

- Council endorses the principle aims of Pacific Highway Upgrade Program. It is consistent with Council's vision and core values for provision of infrastructure. The Council is comfortable with the option development process which allows for suitable community involvement. The project lies mostly within the Council's area of management with Kempsey Council involved in Section D
- In terms of the project objectives, Council views these in a local context and achievement of the following objectives is essential:
  - Develop a dual carriageway to reduce crash rates
  - Provide for transport developments that are complementary with landuse
  - Allow for all connections, modifications and improvements to upgrade the existing highway where it is retained as part of the project
  - Develop solutions that address community expectations for access to the new highway
  - Maximise the use of the existing road reserve, where possible
- General comments from Council include:
  - Council has no strong preference for a route option at this stage
  - It recognises that there are construction advantages in the Orange Corridor Option
  - It seeks to ensure a preferred option is sustainable
  - The Blue and Purple Options result in transfer of significant road and bridge assets to Council (need to be negotiated)
  - It is essential to consider location of interchanges/at grade intersections as part of route selection process
- With regards to options within Section A:
  - All options are complimentary to the existing and future landuse
  - There needs to be connectivity with Area 13, the Sancrox planned landuse and rural residential land west of the highway
  - The upgrade of the Hastings River Drive intersection should occur as early as possible
- With regards to options within Section B:
  - We need to recognise the construction constraints with the Blue and Green Options, particularly through Telegraph Point
  - The Blue Option minimises vegetation disturbance
  - The Purple Option is poorly aligned north of Moorside Drive
  - The Orange Option has potential impacts on the ecology and visual quality of the estuary east of Telegraph Point
  - There needs to be adequate access to the Cairncross Waste Management Facility
  - The Blue and Green Options result in an number of constraints through Telegraph Point (ie. construction difficulties, property acquisitions and related social impacts)
- With regards to options within Section C:
  - There is a need to recognise the construction advantages of the Orange Option
  - There is a need to recognise the vertical alignment improvements provided by the Green and Orange Options
- With regards to options within Section D:
  - All route options align with the LGA common boundaries
  - All route options are acceptable to Port Macquarie-Hastings Council

## A Kempsey Shire Councillor's Perspective

A Kempsey Shire Councillor's perspective of the project was briefly outlined by Jim Gribbin, Councillor, Kempsey Shire Council. Councillor Gribbin acknowledged that his views were his personal views and that Kempsey Council views had been sent via written submission. Mr Tom Vermeulen, Manager, Engineering Strategy, Kempsey Shire Council who was to elaborate on the Council's perspective was a late apology to the workshop and so Councillor Gribbin kindly consented to express his view. Key points made in his presentation included:

- Kempsey Council was concerned about improving safety on the Pacific Highway and in particular:
  - Safety at intersections between highway traffic and local traffic

- The mixing of aged drivers, speed, acceleration and deceleration lengths and heavy vehicles
- Only Section D of the Study Area is within the Kempsey Shire Council boundaries
- A community within the Study Area that will be further separated by this large roadway development was Kundabung where the community exists on both sides of the existing highway. Key community elements are on either side of the road (eg. residences, industry and work places, tennis courts, school, etc). Impacts to such communities need to be considered as planning for the project proceeds

## Study Overview Presentation

An overview of the work undertaken to date and the steps ahead were presented by Andrew Geddes, Project Manager, GHD Study Team and Steve Williamson, Project Development Manager, RTA. Key points made in their presentations which supplements the background information distributed to participants prior to the workshop included the following points below.

- Background and Extent of the Study Area:
  - The Study Area is on the mid north coast between Port Macquarie and Kempsey and is generally centred on the existing Pacific Highway. The Study Area is around 3km wide
  - Southern end of the Study Area begins at the Oxley Highway (connecting to completed duplication and the grade separated interchange)
  - The project extends 37.6km in length
  - In response to feedback from sections of the Telegraph Point community, options have also been investigated to the east of Telegraph Point outside the Study Area
  - The northern end of the Study Area is at the Maria River which will be the southern end of the Kempsey to Eungai section of the Pacific Highway Upgrade
- The main features in the Study Area include:
  - Intersections with 39 public roads as well as private roads including forest roads and driveways
  - Cooperabung Range
  - Local towns in the area include Telegraph Point and Kundabung
  - Hastings River and Wilson River Floodplains
  - Waterways include Fernbank Creek, Hastings River, Wilson River, Cooperabung Creek, Smiths Creek, Pipers Creek and the Maria River
  - Local businesses in the area include the Expressway Spares, Hanson Construction Materials, Cassegrain Wines, Birdon Marine, Cairncross Waste Management Facility, Stoney Park Watersports and Recreation, Yarrabee Quarry, Agriculture and aquaculture businesses and Service Stations
- The scope of work being undertaken in this stage of the project by GHD include:
  - Route Options Investigations
  - Selection of Preferred Route
  - Concept Development
- Steps undertaken in the Options Development Process included:
  - Defining the Study Area
  - Investigate duplication of the existing highway
  - Investigate the existing alignment
  - Consider realignment options
  - Consultation and specialist studies
  - Develop feasible options
- Consultation to this point has included:
  - Engaging with Agencies and Community Groups
  - Consultation processes such as:
    - Community Information Session (CIS)
    - Community Liaison Group (CLG) meetings
    - Ecological Focus Group (EFG) meetings
    - Public displays
    - Community Updates

- To aid in the development and assessment of various route options, specialist studies have been conducted in the Study Area including studies in:
  - Terrestrial Ecology
  - Aquatic Ecology
  - Indigenous Heritage
  - Non indigenous Heritage
  - Noise Assessment
  - Water Quality
  - Planning and Zoning Issues
  - Hydrology and Hydraulics
  - Geotechnical Investigations
  - Social Effects
  - Urban Design, Landscape and Visual Assessment
  - Land Use
  - Traffic Assessment

**The Program – Where are we now – Steve Williamson**

- Steve Williamson presented a diagram showing the program for the Oxley Highway to Kempsey Project. It indicated that corridor route options have been developed, short listed and placed on public display for comment (November-December 2005). This has been completed prior to the Value Management Workshop (VMW) – where we are up to
- The VMW which will be used to assess the corridor options, together with the specialist assessments undertaken by GHD and RTA, and the public submissions from the display will be used to determine the preferred corridor option and lead to more detailed analysis in the next stage of the project
- A Ministerial decision on the preferred option is expected to be made around mid 2006 which will be followed by preliminary alignment design and more specialist studies undertaken on the preferred route. Environmental studies will also be undertaken and submitted to the Department of Planning (DoP) for the Planning Minister’s approval. There will be ongoing consultation with the CLG, EFG and other stakeholders throughout the process

**What’s Important about the Pacific Highway Upgrade: Oxley Highway to Kempsey**

The group identified from their various perspectives (individually, then within focus groups and finally collectively) what was important about the highway upgrade project. The group recorded what was important (shown below) and then reflected on the collated list which was collectively important to the whole group. Although acknowledging that all items are important, some items were considered linked, as noted.

No.	What’s Important
1.	Having no loss of quarry resources
2.	Provide safe and consistent conditions for motorists
3.	Having good connectivity (ie. minimise community severance, enable access for businesses, provide safe connections to the highway)
4.	Ensuring wildlife corridors are preserved or provide new crossing points ( <i>linked to Item No 45</i> )
5.	Having Ecological Sustainable Development (ESD) justification for the preferred route
6.	Minimising noise impacts (for new and existing noise receivers)
7.	Preserving the scenic attraction and lifestyle in the area
8.	Minimising disruption during construction (for local traffic and residences)
9.	Having consolidation of towns ( <i>linked to Item No 3</i> )
10.	Having adequate breakdown lanes, road shoulders and rest areas (also has an Occupational Health and Safety dimension)
11.	Having no “T” intersections on the highway (safety issue)
12.	Minimising impacts to business and community
13.	Minimising impacts on Non Aboriginal and Aboriginal heritage (including listed sites and not listed sites – and embracing the relevant landscape aspects for Aboriginal heritage, where applicable)
14.	Minimising the loss of aquatic habitat (including the shading effect of bridges)

No.	What's Important (cont)
15.	Ensuring operational safety zones are maintained around quarries
16.	Having a speedy start and completion of the project
17.	The road having compatibility with existing businesses, the community and the existing and future landuses
18.	That the highway upgrade can be staged (ie. dual carriageway at a Class A or Class M standard road)
19.	Safety during construction
20.	Travel times for locals not adversely affected
21.	The road meets community expectations
22.	Having an enjoyable, interesting, stimulating experience for drivers
23.	Minimising impact on koala habitats
24.	Minimising the loss to oyster farms and aquaculture
25.	Heavy vehicle access to properties and businesses are maintained
26.	Conserving High Conservation Value (HCV) habitat and Endangered Ecological Communities (EECs) including wetlands
27.	Rationalising and reducing intersections with improved road alignment ( <i>linked to Item No 11</i> )
28.	Continuing the consultation process with the Aboriginal community
29.	Minimising impacts to productive land (agricultural land and forestry)
30.	Balancing between environmental and engineering constraints across the floodplains and forested areas
31.	Considering community concerns in the solution ( <i>linked to Item No 21</i> )
32.	Maximising the use of existing assets where compatible with other objectives (including ESD)
33.	Safer access for pedestrians and cyclists
34.	Minimising adverse impacts on water quality
35.	Considering local sources of construction materials and the potential for this project's needs to impact on long term supply for the district (including water demands for the project)
36.	Reducing travel time and maximising fuel efficiency ( <i>linked to Item No 20</i> )
37.	Achieving value for money and cost effectiveness
38.	Ensuring the feasibility of mitigation measures (ie. noise and water quality mitigation) during both construction and operation phases of the project
39.	Minimising major and minor flooding impacts
40.	Considering the transport access to quarries and major commercial businesses ( <i>linked to Item Nos 12 &amp; 25</i> )
41.	Ensuring employment for Aboriginal people on the project
42.	Ensuring we understand and maintain cultural practices in the Study Area
43.	Maintain alternate local travel routes ( <i>linked to Item No 3</i> )
44.	Minimising impacts to State Forests, National Parks and Nature Reserves
45.	Minimising impacts to ecological functions across the landscape
46.	Minimising impacts on commercial and recreational fishing
47.	Consolidating the use of the existing highway corridor for all services (ie. a single, multi purpose service corridor rather than many service cuttings through the landscape and creating "islands" and barriers)
48.	Maintaining environmental flows in creeks and watercourses (eg. fish passages)
49.	Recommending a route option which represents and reflects long term needs ( <i>linked to Item No 18</i> )
50.	Incorporating firebreaks, where possible, to protect communities
51.	Having a median separation on bridges ( <i>linked to Item No 2</i> )

No.	What's Important (cont)
52.	Incorporating safe school bus stopping points as well as safe postal service stopping points ,etc (linked to Item No 2)
53.	Incorporating appropriate acceleration and deceleration lanes for entry and exit highway movements (linked to Item No 2)
54.	That the Environmental Impact Assessment considers all planning phases of the project
55.	Having clear signage, including Aboriginal "Welcome to Nation" and other information signage
56.	Minimising property acquisition (area and number of acquisitions)

Upon reflection, the workshop group concurred that there was overlap in the list. However, the list reflected the items considered important that the project needs to address as planning proceeds. This "What's Important" list (as well as other information such as the project objectives) would later be used in the workshop to develop themes (and assessment criteria within those themes) to assess the various corridor options in each section of the Study Area.

## The Problem Situation

The group reflected on the background material for the workshop as well as from their own perspectives and identified the problems causing the need for a project (ie. the "Problem Situation"). These were recorded as a mix of the following:

- There is a mix of traffic types with different destinations and demands (ie. heavy & light vehicles, local & through traffic)
- The conflicts become worse during holiday periods
- The risk of conflicts are at intersections and direct property access points resulting in reduced safety for people living in and around the Study Area as well as the highway users
- Horizontal and vertical alignment of the existing highway contains long lengths that do not comply with the current design criteria
- The Pacific Highway has required upgrading for some time and has not kept pace with demand
- As adjoining sections of the highway are improved, there is likely to be an increasing number of road accidents on these remaining unimproved sections of the highway (ie. safety issue due to inconsistency of driving conditions)
- The problem will continue to amplify as growth (both economic and population growth) continues regionally and along the whole highway
- There is a community expectation and pressure that the RTA should get on with the Pacific Highway Upgrade
- Changes in landuse and growth in the area is being hindered due to the uncertainty in the future highway location

## Program Objectives

The group reviewed the program objectives (ie. what must the program achieve to be successful) as stated in the Route Options Development Report and the Workshop Background Papers to ensure there was a common understanding as to what they were. The group agreed that the objectives would address the problems if they were achieved.

The Pacific Highway Upgrade Program Objectives are:

- Significantly reduce road accidents and injuries
- Reduce travel times
- Reduce freight transport costs
- Develop a route that involves the community and considers their interests
- Have a route that supports economic development

- Manage the upgrading of the route in accordance with ecologically sustainable development (ESD) principles
- Provide value for money

## Assumptions

The group (in focus groups) identified assumptions being made about the project from various perspectives. The recorded assumptions of each focus group were assessed by the whole group using the assessment table below. This allowed participants to further share information about the project and find out about the various views that are being held within the group.

### Assessment Table

Key	Assessment Explanation
✓	It is safe to proceed with planning on the basis of this assumption
*	There is some doubt or uncertainty about this assumption and it needs to be resolved as the project planning proceeds
✓/*	Although considered safe to proceed on the basis of this assumption, the planning must be mindful of its impacts

Topics for each group gave focus to the assumptions identified. The topic for each focus group is listed below:

- **Focus group 1: Key Planning/Design Parameters**
- **Focus group 2: Community, Safety, Access, Heritage and Environment Assumptions**
- **Focus group 3: Local and Through Traffic, Commercial and Future Planning Assumptions**
- **Focus group 4: Big Picture Assumptions**

Each focus group's assumptions and the whole group's assessment (comments in italics where required) are listed below.

### Focus group 1: Key Planning/Design Parameters

No.	Assumptions	Category
1.	Maximise use of existing highway asset (as the final road or service road)	✓
2.	The planning considers council strategic and local planning objectives	✓
3.	There will be separation of through and local traffic and connectivity to the local road network	✓
4.	The planning will be developed in consideration of ESD principles	✓
5.	The road will provide a consistent speed and design environment	✓
6.	The planning provides for future capacity in the highway corridor (eg. able to expand from 4 lanes to 6 lanes) and for future interchanges as well as environmental controls, services, etc (ie. pollution measures, etc)	✓
7.	The planning considers community needs and expectations (both indigenous and non-indigenous communities)	✓
8.	The planning considers both regional and state transport needs	✓
9.	The project aims to avoid environmental impact and/or ensure feasible mitigation measures	✓
10.	The project is seeking to minimise adverse impacts on floodplains and water quality	✓
11.	The project will develop and implement rest stop and service centre strategies as part of the project	✓
12.	The project will seek to minimise social impacts (eg. noise, air, visual impacts, etc)	✓

## Focus group 2: Community, Safety, Access, Heritage and Environment Assumptions

No.	Assumptions	Category
1.	The community will be impacted through property acquisition	✓
2.	Adequate compensation will be paid (or provided "in kind") to directly affected landowners ( <i>what is adequate?</i> )	*
3.	The community wants a safer road (ie. dual carriageway) and it will be consistent with upgrades to the north and south of the project	✓
4.	Access will be maintained between communities (local access to private residents and also businesses)	✓
5.	The new road will be safer than the existing highway	✓
6.	There will be adequate interchanges and/or intersections, rest areas, breakdown areas and pedestrian and cyclist access across and along the highway ( <i>what is adequate? – needs to be resolved</i> )	*
7.	There will be planning for access from major population areas (eg. Area 13, Sancrox Road). There could be issues with large events at the winery which require pedestrian access and crossing areas)	✓
8.	There will be ongoing consultation with Aboriginal communities	✓
9.	There will be a loss of Aboriginal cultural heritage	*
10.	There will be further investigations into Aboriginal interpretive signage for the area	✓
11.	There will be a potential impact on European heritage	*
12.	There is likely to be some (potential) loss of aquatic habitat, native vegetation, EECs and wetlands	✓
13.	Some routes are more environmentally damaging than others	✓
14.	Impacts on fauna movement will be mitigated	✓
15.	There will be mitigation of acid sulfate soils, removal of native vegetation and water quality impacts	✓
16.	There will be disturbance of natural habitat	✓
17.	Mitigation measures will be made but there are concerns whether they will be adequate or successful	✓
18.	There will be further studies and planning once a recommended option is decided	✓
19.	Fish passage will be maintained	✓
20.	There will be some loss of State Forest, prime agricultural land and other rural lands	✓
21.	There is no koala colony in the State Forest bisected by the Orange Option in Section B (as stated in the latest community update sheet for the project)	*
22.	Based on the information provided, there is an assumption that there is no impact on Aboriginal heritage	*

## Focus group 3: Local and Through Traffic, Commercial and Future Planning Assumptions

No.	Assumptions	Category
<b>Local Traffic</b>		
1.	Local traffic detours will be minimised	✓
2.	Connectivity will be maintained and/or improved	✓
3.	There will be reduced interaction of local and through traffic	✓
4.	Access roads will be planned to accommodate future usage where required (eg. heavy vehicle growth or low speed roads)	*
5.	The Highway Upgrade will be integrated with council road network	✓
6.	There will be safer intersections and/or interchanges than at the present	✓

### Focus group 3: Local and Through Traffic, Commercial and Future Planning Assumptions (cont)

No.	Assumptions	Category
<b>Through Traffic</b>		
7.	Impacts on “new” noise receivers will be minimised	*
8.	There will be reduced travel times (for through traffic)	✓
9.	There will be reduced vehicle operating costs as a result of the project	✓
10.	The standard of highway will be consistent with “new” sections of highway	✓
11.	There will be high standard rest areas/lay by areas provided	✓
<b>Commercial</b>		
12.	Businesses can continue and will not be impacted by any new roads	*
13.	Access for businesses will be maintained to the highway (eg. Cassegrain Wines). However it may not be the same as present	✓
14.	Detours to access businesses will be minimised	*
15.	Interchange locations are influenced to facilitate businesses	*
16.	There will be improved access and safety for commercial operations (including State Forest operations)	✓
17.	There will be a minimal amount of adverse impacts to/from business and for drivers (ie. aesthetic impacts)	*
<b>Future Planning</b>		
18.	There will be resource access provided, protection of limited resources and road resource requirements will be identified	*
19.	There will be a balance of cut and fill (earthworks) on the project	✓
20.	Interchange location and local access roads will facilitate/consider industrial landuse, rural residential landuse, commercial/business landuse as well as Area 13 requirements	✓
21.	The future highway corridor will be identified and protected	✓
22.	The highway upgrade will be integrated with council’s road network	✓

### Focus group 4: Big Picture Assumptions

No.	Assumptions	Category
1.	There will be a highway upgrade to provide a safer road	✓
2.	There will be increased demands on the upgrade due to population, traffic and economic growth	✓
3.	There will be impacts and resultant “trade offs”	✓
4.	There will be funding made available to allow staging or completion of the project <i>(the timing of the funding is uncertain)</i>	✓
5.	The overall Upgrade Program will be implemented	✓
6.	Dual carriageways will reduce crash rates	✓
7.	The project will provide a “balanced” outcome in the context of ecological, social and economic considerations	✓
8.	Environmental mitigation works will be successful <i>(needs to be verified)</i>	*
9.	People will continue to drive motor vehicles for a long time to come	✓
10.	Highway will be upgraded some time in the future to 6 lanes (ie. Class M standard road). <i>It should be noted the road does not require 6 lanes to be a Class M standard road</i>	✓
11.	The new highway will be designed to the appropriate standards (eg. speed environment for Class M or Class A standard road, flood relief, noise mitigation, environment mitigation, quarry blasting safety, etc)	✓

#### Focus group 4: Big Picture Assumptions

No.	Assumptions	Category
12.	There will be a net loss of environmental values	*
13.	There will be a net gain of environmental values	*
14.	All options will meet the minimum safety requirements	✓

#### Developing the Assessment Criteria

As a result of the information shared in the workshop to date (in particular, the “What’s Important” statements and the project objectives), a focus group consisting of a representative cross section of the workshop participants (ie. RTA, Council, CLG representative, government agencies, environmental representatives, Study Team, etc) clustered statements within a set of themes or perspectives in order to present to the whole group for comment, amendment and, if acceptable, endorsement to assess the various corridor options in each section of the Study Area.

The approach adopted was to:

- (1) Take the list of “What’s Important” statements and separate those which would not assist in differentiating between the corridor options. Some statements were expressed as objectives (*ie. being part of an integrated transport network, meeting community expectations, etc*), some referred to process (*ie. EIA considers all phases of the project, transparent and demonstrated justification, a balanced solution, etc*) and some statements were a common requirement for all options to meet (*ie. provide clear and specific signage, use of RTA design and engineering standards, financially viable, etc*)
- (2) Cluster the remaining “What’s Important” statements under three key themes or perspectives being: **Functional; Social and Economic; and Natural and Cultural Environment**
- (3) Develop summary statements from the consolidated “What’s Important” list within each theme which could be used as assessment criteria to meaningfully compare and differentiate the corridor options within each Section of the Study Area
- (4) Present the approach and the outputs to the workshop group for consideration, discussion, adjustment and endorsement

#### Agreeing to the “Non-Differentiators”

The focus group agreed the following “What’s Important” statements would not help to differentiate between the corridor options or were duplicates.

No.	What’s Important – <i>but not assist in differentiating between Corridor Options</i>
2.	Provide safe and consistent conditions for motorists
5.	Having Ecological Sustainable Development (ESD) justification for the preferred route
10.	Having adequate breakdown lanes, road shoulders and rest areas (also has an Occupational Health and Safety dimension)
11.	Having no “T” intersections on the highway (safety issue)
12.	Minimising impacts to business and community
15.	Ensuring operational safety zones are maintained around quarries
21.	The road meets community expectations
25.	Heavy vehicle access to properties and businesses are maintained
27.	Rationalising and reducing intersections with improved road alignment ( <i>linked to Item No 11</i> )
28.	Continuing the consultation process with the Aboriginal community
30.	Balancing between environmental and engineering constraints across the floodplains and forested areas
31.	Considering community concerns in the solution ( <i>linked to Item No 21</i> )
33.	Safer access for pedestrians and cyclists
35.	Considering local sources of construction materials and the potential for this project’s needs to impact on long term supply for the district (including water demands for the project)

37.	Achieving value for money and cost effectiveness
38.	Ensuring the feasibility of mitigation measures (ie. noise and water quality mitigation) during both construction and operation phases of the project
<b>No.</b>	<b>What's Important – <i>but not assist in differentiating between Corridor Options (cont)</i></b>
40.	Considering the transport access to quarries and major commercial businesses ( <i>linked to Item Nos 12 &amp; 25</i> )
41.	Ensuring employment for Aboriginal people on the project
42.	Ensuring we understand and maintain cultural practices in the Study Area
48.	Maintaining environmental flows in creeks and watercourses (eg. fish passages)
49.	Recommending a route option which represents and reflects long term needs ( <i>linked to Item No 18</i> )
50.	Incorporating firebreaks, where possible, to protect communities
51.	Having a median separation on bridges ( <i>linked to Item No 2</i> )
52.	Incorporating safe school bus stopping points as well as safe postal service stopping points ,etc ( <i>linked to Item No 2</i> )
54.	That the Environmental Impact Assessment considers all planning phases of the project
55.	Having clear signage, including Aboriginal "Welcome to Nation" and other information signage

The remaining statements were considered as having the capacity to differentiate between options. They were clustered under the three themes/perspectives below and rephrased as assessment criteria for consideration by the whole workshop group. Also the focus group reflected on other material presented in the workshop (ie. Problem Situation, Program Objectives, etc) to ensure no other assessment criteria were required.

After review, comment and amendment by the whole workshop group, the assessment criteria within each of the three perspectives to evaluate the options later in the workshop were agreed as:

### **1. Functional Perspective**

- A. Potential for delays during construction for road users
- B. Capacity to stage and achieve early benefits
- C. Safety risks during construction (conflict of construction with road users)
- D. Route length and grade efficiency (ie. travel time)
- E. Constructability (including length across floodplain)

### **2. Social and Economic Perspective**

- A. Number and area of properties acquired
- B. Consolidation of communities
- C. Compatibility with existing businesses and planning proposals
- D. Views and aesthetics from the road corridor
- E. Impacts on agricultural, forest and rural lands (commercial, productive land)
- F. Noise impacts on existing and new receivers
- G. Views and aesthetics of the road from the community

### **3. Natural and Cultural Environment Perspective**

- A. Impact on wildlife corridors
- B. Impact on Aboriginal heritage
- C. Impact on non Aboriginal heritage
- D. Impacts on waterways and wetlands
- E. Impact on threatened species (including koalas and habitat)
- F. Area of HCV/EEC vegetation cleared
- G. Total area of native vegetation cleared (excluding other criteria involving cleared vegetation)

## Weighting of Assessment Criteria

Relative weightings for the assessment criteria within each perspective were undertaken qualitatively by the whole group using a paired comparison technique.

It should be noted that the paired comparison process resulted in some criteria receiving a score of zero. This should be interpreted as, the group believed the evaluation and recommendation of the preferred option would not rely on the performance of the option against this criteria even though the issue is important and requires careful consideration during the next stage of the project development.

The discussion in undertaking the paired comparison process was extensive and allowed the group to understand and appreciate the various perspectives represented within the group. The final weightings were reached on a consensus basis. The group's workings and their weightings of the assessment criteria for each perspective are shown below.

## Functional Perspective – Assessment Criteria

No	Assessment	Raw Score	Relative Weightings
A.	Potential for delays during construction for road users	-	-
B.	Capacity to stage and achieve early benefits	6	37.5%
C.	Safety risks during construction (conflict of construction with road users)	2	12.5%
D.	Route length and grade efficiency (ie. travel time)	4.5	28%
E.	Constructability (including length across floodplain)	3.5	22%
<b>Total</b>		<b>16</b>	<b>100%</b>

## Scoring Matrix

The workings for the relative assessment are shown below.

	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>A</b>	2B	2C	2D	1E
	<b>B</b>	2B	1B	1B
		<b>C</b>	2D	2E
			<b>D</b>	D/E
				<b>E</b>

The extent one criteria was preferred by the group over another was indicated by using the scoring system below:

3. Major Preference
2. Medium Preference
1. Minor Preference

## Summary

The weighting of the assessment criteria for Functional Performance using the paired comparison methodology indicated that the **“Capacity to stage and achieve early benefits”** was the most important criteria followed by the **“Route length and grade efficiency”** and then followed by **“Constructability”** and then **“Safety risks during construction”** on the next level of importance. **“Potential for delays during construction for road users”** although important was not considered as important as the other criteria when compared in pairs and scored zero.

## Social and Economic Perspective – Assessment Criteria

No	Assessment	Raw Score	Relative Weightings
A.	Number and area of properties acquired	4	12%
B.	Consolidation of communities	5	14%
C.	Compatibility with existing businesses and planning proposals	9.5	27%
D.	Views and aesthetics from the road corridor	-	-
E.	Impacts on agricultural, forest and rural lands (commercial, productive land)	7.5	21%
F.	Noise impacts on existing and new receivers	8	23%
G.	Views and aesthetics of the road from the community	1	3%
	<b>Total</b>	<b>35</b>	<b>100%</b>

### Scoring Matrix

The workings for the relative assessment are shown below.

	B	C	D	E	F	G
A	1B	2C	2A	1E	1F	2A
B		2C	2B	2E	1F	2B
C			3C	C/E	1F	2C
D				2E	2F	1G
E					1F	2E
F						2F

The extent one criteria was preferred by the group over another was indicated by using the scoring system below:

3. *Major Preference*
2. *Medium Preference*
1. *Minor Preference*

### Summary

The weighting of the assessment criteria for Social and Economic Performance using the paired comparison methodology indicated that **“Compatibility with existing businesses and planning proposals”** was the most important criteria followed by the **“Noise impacts on existing and new receivers”** and then **“Impacts on agricultural, forest and rural lands”** on the next level of importance and followed by **“Consolidation of communities”** and **“Number and area of properties acquired”** as the next level of importance followed by **“Views and aesthetics of the road from the community”**. **“Views and aesthetics from the road corridor”** although important was not considered as important as the other criteria when compared in pairs and scored zero.

## Natural and Cultural Environment – Assessment Criteria

No	Assessment	Raw Score	Relative Weightings
A.	Impact on wildlife corridors	2	6%
B.	Impact on Aboriginal heritage	8	26%
C.	Impact on non Aboriginal heritage	0.5	2%
D.	Impacts on waterways and wetlands	3.5	11%
E.	Impact on threatened species (including koalas and habitat)	8	26%
F.	Area of HCV/EEC vegetation cleared	8	26%
G.	Total area of native vegetation cleared (excluding other criteria involving cleared vegetation)	1	3%
	<b>Total</b>	<b>31</b>	<b>100%</b>

### Scoring Matrix

The workings for the relative assessment are shown below.

	B	C	D	E	F	G
A	2B	1A	A/D	2E	2F	A/G
B		2B	1B	B/E	B/F	2B
C			2D	2E	2F	C/G
D				1E	1F	1D
E					E/F	2E
F						2F

The extent one criteria was preferred by the group over another was indicated by using the scoring system below:

3. *Major Preference*
2. *Medium Preference*
1. *Minor Preference*

### Summary

The weighting of the assessment criteria for the Natural and Cultural Environmental Performance using the paired comparison methodology indicated that the **“Impact on Aboriginal heritage”**, **“Impact on threatened species”** and **“ Area of HCV/EEC vegetation cleared”** were the most important criteria followed by **“Impact on waterways and wetlands”** and then **“Impact on wildlife corridors”** followed by the **“Total area of native vegetation cleared”** and **“Impact on non Aboriginal heritage”** on the next level of importance.

A summary of the weightings of the assessment criteria within the various themes as determined by the group appears below.

<b>Assessment Criteria</b>					
<b>Functional</b>		<b>Social and Economic</b>		<b>Natural &amp; Cultural Environment</b>	
<b>Criteria</b>	<b>Wt</b>	<b>Criteria</b>	<b>Wt</b>	<b>Criteria</b>	<b>Wt</b>
Potential for delays during construction for road users	-	Number and area of properties acquired	12%	Impact on wildlife corridors	6%
Capacity to stage and achieve early benefits	37.5%	Consolidation of communities	14%	Impact on Aboriginal heritage	26%
Safety risks during construction (conflict of construction with road users)	12.5%	Compatibility with existing businesses and planning proposals	27%	Impact on non Aboriginal heritage	2%
Route length and grade efficiency (ie. travel time)	28%	Views and aesthetics from the corridor	-	Impacts on waterways and wetlands	11%
Constructability (including length across floodplain)	22%	Impacts on agricultural, forest and rural lands (commercial, productive land)	21%	Impact on threatened species (including koala and habitat)	26%
		Noise impacts on existing and new receivers	23%	Area of HCV/EEC vegetation cleared	26%
		Views and aesthetics of the road from the community	3%	Total area of native vegetation cleared	3%

These weighted assessment criteria would later be used to evaluate the corridor options for the project.

Having built a foundation and common understanding of the problems and issues, the objectives (what the project is to achieve), assumptions and the assessment criteria for corridor option evaluation, the group was now in a position to broadly review the options shortlisted for the project.

### **Appendix 3. Corridor Option Review, Evaluation and Recommendation**

# Corridor Option Review, Evaluation and Recommendation

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## Corridor Option Presentations

Andrew Geddes, Project Manager of the GHD Study Team presented key comparisons to the group of the shortlisted corridor options being considered. Key points made in his presentation are outlined below.

- For the purposes of identifying and assessing corridor options, the 38 km long Study Area has been divided into 4 Sections from south to north (see **Figure 1**):
  - **Section A** – 700 Metres North of Oxley Highway Interchange to Blackmans Point Road
  - **Section B** – Blackmans Point Road to Cooperabung Drive
  - **Section C** – Cooperabung Drive to Mingaletta Road
  - **Section D** – Mingaletta Road to the Maria River
- A number of corridor options have been investigated within the Study Area. As a result a short list of four corridor options for the upgrade of the highway has been placed on public display with public submissions being sought
- The development of the four short listed options along with the findings of the preliminary environmental and engineering investigations undertaken within the Study Area have been documented in the RTA's *Pacific Highway Upgrade – Oxley Highway to Kempsey: Route Options Development Report* (RTA/Pub 05.220, October 2005). The four corridor options placed on public display are identified as:

### **Blue Option – Corridor around duplication of the existing highway**

- The Blue Option starts 700m north of the Oxley Highway interchange, following the existing alignment until the left hand bend adjacent to Hastings River Drive where the curve is flattened. It continues north along the existing highway alignment crossing the Hastings River floodplain. This option retains the existing bridge as the southbound carriageway (although the bridge does not conform to the new standard cross-section) with a new bridge alongside for the northbound carriageway. It then continues on the western side of the existing highway, with the possibility of minor encroachment in Cairncross State Forest and Rawdon Creek Nature Reserve, prior to rejoining the existing highway approximately 1.5km north of Blackmans Point Road. It again follows the existing highway alignment, crossing the Wilson River floodplain and the Wilson River immediately east of the existing bridge prior to running through Cooperabung Range (which includes Cooperabung Creek Nature Reserve and Ballengarra State Forest). The crossing of the Wilson River will use the existing bridge as the northbound carriageway (although the bridge does not conform to the new standard cross-section) with a new bridge alongside for the southbound carriageway. The vertical curve through Cooperabung Hill would require flattening. The section between the end of Kundabung straight and the end of the Study Area at Maria River (south of Kempsey) would be realigned using flatter curves
- For the majority of the route, this option involves the addition of one new carriageway with the existing highway being reconstructed as the second carriageway. Where new alignments are required (eg. in the vicinity of Hastings River Drive, north of Blackmans Point Road and south of Maria River), two new carriageways would be provided

### **Green Option – Corridor around duplication of the existing highway**

- The Green Option starts 700m north of the Oxley Highway interchange, following the existing alignment until Fernbank Creek where it deviates to the west before crossing the Hastings River floodplain. The crossing of the Hastings River would require the construction of two new bridges adjacent to and upstream of the existing bridge. It rejoins the existing highway alignment south of Blackmans Point Road. At Blackmans Point Road it deviates to the eastern side of the existing highway, with the possibility of minor encroachment in Cairncross State Forest and Rawdon Creek Nature Reserve, prior to rejoining the existing highway alignment approximately 1.5km north of Blackmans Point Road. It again follows the existing highway alignment, crossing the Wilson River floodplain and Wilson River prior to running through Cooperabung Range (which includes Cooperabung Creek Nature Reserve and Ballengarra State Forest). The crossing of the Wilson River will use the existing bridge as the northbound carriageway (although the bridge does not conform to the new standard cross-section) with a new bridge alongside for the southbound carriageway. The vertical curve through Cooperabung Hill would require flattening. The section between the end of Kundabung straight and the end of the Study Area at Maria River (south of Kempsey) would be realigned using a straight horizontal alignment that encroaches on the Maria River State Forest

- For the majority of the route, this option involves the construction of one new carriageway with the existing highway being reconstructed as the second carriageway. Where new alignments are required (eg. in the vicinity of Hastings River, north of Blackmans Point Road and south of Maria River), two new carriageways would be constructed

#### **Purple Option – Corridor around duplication of the existing highway and realignment**

- The Purple Option starts 700m north of the Oxley Highway interchange, following the existing alignment until the left hand bend adjacent to Hastings River Drive where the curve is flattened. It continues north along the existing highway alignment crossing the Hastings River floodplain up to Blackmans Point Road. The crossing of the Hastings River would require the construction of two new bridges adjacent to and upstream of the existing bridge. At Blackmans Point Road, it then deviates to the eastern side of the existing highway, with the possibility of minor encroachment in Cairncross State Forest and Rawdon Creek Nature Reserve, prior to rejoining the existing highway alignment approximately 1.5km north of Blackmans Point Road. It again follows the existing highway alignment to Moorside Drive where it diverts to the east. From Moorside Drive, the option follows a new alignment to the east of the ski park recreational facility. (The alignment in this area lies outside the Study Area set for the project in November 2004). It then crosses the Wilson River, Dalhenty Island and SEPP 14 wetland. (The crossing of the Wilson River would require the construction of two new bridges). It then rejoins the existing highway alignment north of Haydons Wharf Road, and runs through Cooperabung Range (which includes Cooperabung Creek Nature Reserve and Ballengarra State Forest). The vertical curve through Cooperabung Hill would require flattening. The section between the end of Kundabung straight and the end of the Study Area at Maria River (south of Kempsey) would be realigned using a straight horizontal alignment that encroaches on the Maria River State Forest
- For the majority of the route, this option involves the addition of two new carriageways. However, south of Fernbank Creek, north of Blackmans Point Road to Moorside Drive and along Kundabung straight, one new carriageway would be provided with reconstruction of the existing highway as the second carriageway

#### **Orange Option – Corridor around realignment of the existing highway**

- The Orange Option starts 700m north of the Oxley Highway interchange, following the existing alignment until approx. 400m south of Fernbank Creek where it deviates to the west before crossing the Hastings River floodplain. The crossing of the Hastings River would require the construction of two new bridges approximately 300m upstream (west) of the existing bridge. It then continues on a straight alignment to Blackmans Point Road where it deviates to the east across the Wilson River floodplain. (The alignment in this area lies outside the study area set for the project in November 2004). The Orange Option crosses the Wilson River at the eastern end of Dalhenty Island and SEPP 14 wetland and would require the construction of two new bridges. The option then heads in a northerly direction, crossing Haydons Wharf Road in close proximity to the existing highway and then continues north through the Cooperabung Range along a relatively straight alignment to the east of the existing highway. The option rejoins the existing highway at Mingaletta Road. The section between the end of Kundabung straight and the end of the Study Area at Maria River (south of Kempsey) would be realigned using a straight horizontal alignment that encroaches on the Maria River State Forest
- For the majority of the route, this option involves the addition of two new carriageways. However, south of Fernbank Creek and along Kundabung straight, one new carriageway would be provided with reconstruction of the existing highway as the second carriageway
- Each option is defined as a 250 metre wide corridor. Why a 250m wide corridor? Because:
  - Investigation zone initially
  - Flexibility and space for alignment options (either left, right or centre of the corridor)
  - The preferred route corridor will eventually be 100m-150m wide and will include batters, water quality ponds and local access roads
- Preliminary road alignments within these four corridor options have also been developed and investigated by GHD. In developing the road alignments, it became evident that there existed two distinct common sections within the Study Area in which all four options co-existed. These common sections (or common corridors) occur in the following locations:
  - **Common Corridor No. 1** – within Section A (being 700m north of the Oxley Highway to 500m south of Fernbank Creek), approx. length: 3.4 km
  - **Common Corridor No. 2** – within Section D (being Mingaletta Road to Ravenswood Road), approx. length: 7.0 km

- In other sections, two or more of the corridor options were common. Where the options differ are:
  - In **Section A** – Orange and Green/Blue/Purple (common) Options
  - In **Section B** – Orange, Purple and Blue/Green (common) Options
  - In **Section C** – Orange and Green/Blue/Purple (common) Options
  - In **Section D** – Blue and Orange/Green/Purple (common) Options
- The location of the four options, the common corridors and key features of each route option are shown in **Figure 1**. Key differentiators in each section are:

#### **Section A**

- Length of road
- Construction under traffic
- Staging
- Bridges
- Soft soils
- Business impacts
- Property impacts
- Structures
- Indigenous heritage
- Acid sulfate soils
- Vegetation clearing
- Impact on State Forest and Nature Reserve
- Noise

#### **Section B**

- Length of road
- Construction under traffic
- Staging
- Bridges
- Flooding
- Soft soils
- Major utilities
- Community severance/Traffic through Telegraph Point
- Property impact
- Structures
- Non indigenous heritage
- Acid sulfate soils
- Agricultural land impacts
- Vegetation clearing
- Endangered ecological communities
- Impact on State Forest and Nature Reserve
- Wetlands
- Noise

#### **Section C**

- Length of road
- Construction under traffic
- Staging
- Reuse of existing alignment
- Depth of cuts
- Heavy vehicle performance
- Property impact
- Vegetation clearing
- Endangered ecological communities
- Noise
- Impact on State Forest

#### **Section D**

- Length of road
- Construction under traffic
- Staging
- Property impact
- Vegetation clearing

- Noise
- Impact on State Forest
- A table outlining the advantages and disadvantages as appeared in the background paper for the workshop can be found in **Appendix 4**. (It should be noted that some of this data was updated in the workshop)

It should be noted that the workshop group were being asked to compare Class M Options which ultimately would require to new bridges across the Hastings and Wilson Rivers. This led to some confusion particularly in the understanding of the Blue Option at the Hastings River crossing and the Blue/Green Option at the Wilson River crossing. However this was clarified to the workshop group after the Option presentation was made.

## Community Feedback Summary

Melanie Miels, Community Liaison Officer, GHD presented to the group a summary of findings from the written submissions and feedback forms received during the Route Options Display. Key points raised in her presentation included:

- Consultation activities included:
  - Letters to/from potentially affected property owners (touched or within one or more of the 250m wide corridors), from statutory authorities and from CLG and EFG members
  - Community updates sent to all property owners and properties within the Study Area
  - Flyers at commercial centres along the route
  - Phone calls to potentially affected property owners
  - A website which was regularly updated
  - Advertisements and media releases
  - Community Liaison Group (CLG) and Environmental Focus Group (EFG) meetings with bus tours
  - Meetings with potentially affected property owners and businesses
  - Council briefings
- Static displays were held at:
  - Telegraph Point Post Office
  - Kundabung Post Office
  - Port Macquarie Library
  - Settlement City Shopping Centre, Port Macquarie
  - RTA Motor Registry, Kempsey
  - RTA Pacific Highway Office, Grafton
- Staffed displays were held at:
  - Settlement City Shopping Centre
  - Telegraph Point School of Arts, Telegraph Point
  - Kundabung Community Hall, Kundabung
- Feedback mechanisms included:
  - Project information line (1800 154 724)
  - E-mail
  - Fax
  - Reply paid address
  - Feedback forms
  - Online feedback forms
  - Meetings
- A summary of submissions included:
  - 147 feedback forms
  - 4 online feedback forms, and
  - 30 letters
- Feedback from statutory authorities included:
  - Department of Primary Industries:
    - From an agriculture perspective – The Blue and Green Options raise no obvious impacts for agriculture in the locality though local property impacts including access arrangements will require attention. The Purple and Orange Options will have some localised impacts on better quality agricultural lands and property severance. It is unclear what impacts the options within Section B will have on the Port Macquarie Tea Tree Plantation

- From a fisheries perspective – The DPI Aquatic Habitat Protection Unit (AHPU) prefers that the option selected during the VMW workshop has less potential impact upon fishing activity, fish and aquatic habitat such as wetlands, especially SEPP 14 wetlands, mangroves and seagrass beds
- From a State Forest perspective – The preference is solely determined by the amount of additional encroachment on State Forests. Order of preference is Blue or Green Options followed by the Purple Option then the Orange Option. The Cairncross, Ballengarra and Maria River/Kalatenee State Forests all contain habitat for many endangered species of fauna and flora. The effected section of Cairncross State Forest contains areas of significant forest communities protected from forestry operations. There is likely to be impact on the movement of koalas. Access for vehicles up to B-Double size semi-trailers will be required for the purposes of primarily timber movement and fire control
- Kempsey Shire Council:
  - From a connectivity perspective – Connectivity needs to be maintained within the Kundabung community and it is important to eliminate the use of staggered “T” intersections
  - From a local access perspective – Access from adjoining properties and existing access roads need to be considered and provided. Access roads are important to maintain a manageable asset for Council
  - From a drainage perspective – Minimise effects on existing drainage and groundwater conditions
  - From a bus stop perspective – The future design should examine existing and future needs of public transport in the area, specifically in relation to school bus routes/stops
  - From a Yarrabee Quarry perspective – The highway design should consider the available resource material in this area. Adequate access for quarry related transport should be ensured
- Department of Environment and Conservation:
  - From a biodiversity perspective – The Blue, Green and Purple Options travel through areas with a high number of threatened species and high conservation value vegetation communities. The Purple and Orange Option in Section B pass through or over a SEPP 14 wetland on Dalhenty Island and on the northern bank of the Wilson River. DEC favour the Blue and Green Options as they appear likely to have lesser impact on threatened plants and animals in Sections B, C and D than the Purple and Orange Options
  - From a space perspective – Sufficient corridor will be required to permit the installation and maintenance of mitigation measures for noise, water quality and fauna during both construction and operation phases of the upgrade
  - From an Aboriginal cultural heritage perspective – There are significant Aboriginal cultural heritage material in Cooperabung Creek, areas adjacent to waterways used for transport, Rawdon Creek Nature Reserve, Kumbatine National Park and in Maria National Park
  - From a noise perspective – While the Orange and Purple Options impact fewer receivers in Sections B and C, they impact on receivers who currently experience low background and low road traffic noise levels
  - From a water perspective – The Blue Option retains existing bridges over the Hastings and Wilson Rivers and is supported by DEC. The Green, Purple and Orange Options require construction of additional bridges which pose an environmental risk during construction. The Purple and Orange Options cross the Wilson River floodplain and will require several culvert crossings over soft soils requiring significant engineering works during construction
- The Nature Conservation of NSW also made a submission which proposed the investigation of a “fifth option” for the highway upgrade from Dennis Bridge to north of Telegraph Point, running further east of the Purple and Orange Options. The advantages include increase safety, provide for the amenity and well-being of the Telegraph Point community, and remove environmental threats of the Purple and Orange Options to the koala habitat and EECs. The disadvantages include possible impact on wetland, construction in soft soils of the floodplain, and increased construction costs. If the fifth option is not considered, then widening and improving the current highway route would provide the best option for both the environment and the community
- Key issues raised by the community included road safety and improved travel times, noise impacts, the need to separate traffic and the private property and agricultural land impacts. The response to the question which route best addresses the issues, 80% of responses indicated the Orange Option. Some respondents selected more than one option as the option which best meets the issues. This may have been because they may have selected one option for one section and another option for another section

- A general overview of likes/dislikes of options was presented which was not exhaustive, but gave an indication of what people said about the options
- A general overview of other issues raised was tabled which again was not exhaustive, but gave an indication of the issues that are important to the community

## Assessment of Corridor Options

Having reviewed the shortlisted corridor options and discussed their advantages and disadvantages, the group was now in a position to assess the corridor options against the assessment criteria under the three key themes/perspectives developed earlier in the workshop.

Due to the commonality of some of the corridor options in some sections, it should be noted that the corridor options evaluated in each section were:

- In **Section A** – Orange and Green/Blue/Purple (common) Options
- In **Section B** – Orange, Purple and Blue/Green (common) Options
- In **Section C** – Orange and Green/Blue/Purple (common) Options
- In **Section D** – Blue and Orange/Green/Purple (common) Options

The group (in three focus groups) evaluated the corridor options in each Section using the considerations and prompts for each of the key perspectives being Functional; Social and Economic; and, Natural and Cultural Environment. For instance, one focus group assessed the corridor options against the functional perspective, whilst a second focus group assessed the corridor options against the social and economic perspective, and so on. It should be noted that each focus group was (as much as possible) a representative cross section of the workshop participants (ie. a mix of community, council, government agencies, RTA and Study Team representatives, etc).

The options were assessed relatively on a qualitative basis of how well each option met each criteria in each perspective on a scale of Excellent (**E**), Very Good (**VG**), Good (**G**), Fair (**F**) or Poor (**P**).

Once the qualitative evaluation was completed, the evaluation was scored using the weightings of the criteria and establishing a ranking for each option within that perspective.

It should be noted that where the difference in score between options was not greater than the value of the highest weighted criteria within that perspective, the options were considered equally ranked as the difference in score was not considered significant enough to differentiate between them.

Each focus group discussed their findings and recorded their observations and conclusions as a result of their deliberations.

The findings of each focus group was presented to the whole group for discussion, amendment (if necessary) and finally endorsement (if appropriate) as to an agreed assessment to assist the group move forward. Their findings as presented (together with amendments) and agreed by the whole group are listed below.

## Assessment of Corridor Options within the Functional Perspective

Section A		Functional Perspective										RANK
		Assessment Criteria	Capacity to stage & achieve early benefits	Safety risks during construction	Road length & grade efficiency	Constructability						
OPTIONS		WT	37.5	12.5	28	22						
Orange	5	E	F	E	E	E	E	E	E	E	E	1
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	P	
	Sub Total		112.5	50	112	66						

Green, Blue, Purple	5	E	E	E	E	E	E	E	E	E	1
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	
	Sub Total		150	25	84	44					

Section B		Functional Perspective										RANK
		Assessment Criteria	Capacity to stage & achieve early benefits	Safety risks during construction	Road length & grade efficiency	Constructability						
OPTIONS		WT	37.5	12.5	28	22						
Orange	5	E	F	E	E	E	E	E	E	E	E	1
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	P	
	Sub Total		112.5	62.5	112	66						

Blue, Green	5	E	E	E	E	E	E	E	E	E	3
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	
	Sub Total		37.5	12.5	56	22					

Purple	5	E	E	E	E	E	E	E	E	E	2
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	
	Sub Total		75	37.5	84	44					

		Functional Perspective									
Section C	Assessment Criteria	Capacity to stage & achieve early benefits	Safety risks during construction	Road length & grade efficiency	Constructability						
		ASSIGNED WEIGHT									
OPTIONS	WT	37.5	12.5	28	22						
Orange	5	E	(E)	E	E	E	E	E	E	E	RANK <b>1</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	(G)	G	(G)	(G)	G	G	G	G	G	
	2	(F)	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	
	Sub Total		75	62.5	84	66					

Blue, Green, Purple	5		E	E	E	E	E	E	E	E	RANK <b>2</b>
	4		VG	VG	VG	VG	VG	VG	VG	VG	
	3		(G)	G	G	G	G	G	G	G	
	2		F	(F)	(F)	F	F	F	F	F	
	1		P	P	P	(P)	P	P	P	P	
	Sub Total		112.5	25	56	22					

		Functional Perspective									
Section D	Assessment Criteria	Capacity to stage & achieve early benefits	Safety risks during construction	Road length & grade efficiency	Constructability						
		ASSIGNED WEIGHT									
OPTIONS	WT	37.5	12.5	28	22						
Blue	5		E	E	E	E	E	E	E	E	RANK <b>2</b>
	4		VG	VG	VG	VG	VG	VG	VG	VG	
	3		(G)	(G)	(G)	G	G	G	G	G	
	2		F	F	F	(F)	F	F	F	F	
	1		P	P	P	P	P	P	P	P	
	Sub Total		112.5	37.5	84	44					

Orange, Green, Purple	5		E	E	E	E	E	E	E	E	RANK <b>1</b>
	4		VG	(VG)	(VG)	(VG)	VG	VG	VG	VG	
	3		(G)	G	G	G	G	G	G	G	
	2		F	F	F	F	F	F	F	F	
	1		P	P	P	P	P	P	P	P	
	Sub Total		112.5	50	112	88					

## **Key Observations**

### **Section A**

- In relation to the criteria “Capacity to stage and achieve early benefits”, the Green/Blue/Purple Option gives a better short term solution for intersections. Whereas the Orange Option involves a complex connection
- In relation to the criteria “Safety risks during construction”, the Orange Option can be constructed free of traffic. Whereas the Green/Blue/Purple Option has to be constructed adjacent to the traffic with intersections and contra flows required
- In relation to the criteria “Route length and grade efficiency”, there are no significant grade issues. The Orange Option is marginally better with a straighter alignment and is 5% shorter
- In relation to the criteria “Constructability”, the Orange Option is shorter across the floodplain and separated from the existing road. An adjacent embankment would not be required. It provides easier access for bridge building

### **Section B**

- In relation to the criteria “Capacity to stage and achieve early benefits”, the Orange Option will be quicker to build than other routes which will involve blasting, evacuation, long traffic delays. Whereas the Blue/Green and Purple Options will take longer to construct and will be difficult to upgrade to a Class M standard road when required to do so
- In relation to the criteria “Safety risks during construction”, the Orange Option can be constructed without impact on traffic and residents. Whereas the Purple Option will have a partial impact and the Blue/Green Option will have a significant impact on traffic and residents with blasting required and long term traffic delays. There will be safety issues with excavation and cleared roadway requirements. There will be issues with maintaining access and proximity to the existing route around Telegraph Point
- In relation to the criteria “Route length and grade efficiency”, the Orange Option is 10% shorter than the Blue/Green Option. The Purple Option is slightly shorter than the existing route. The Orange Option grade is more efficient
- In relation to the criteria “Constructability”, the Blue/Green and Purple Options have a number of constraints including Telegraph Point, intersections, adjacent to existing bridges, rock cuts and maintaining access during construction (traffic management issues). Whereas the Orange Option will have issues with soft soils, acid sulfate soils and water logging (although not unique to the Orange Option)

### **Section C**

- In relation to the criteria “Capacity to stage and achieve early benefits”, the Blue/Green/Purple Option can be widened to dual carriageway and offset. The highway does not meet current standards but is easier to stage. Some blasting will be required. Whereas the Orange Option requires a longer term construction due to the cut required
- In relation to the criteria “Safety risks during construction”, the Orange Option rates very well compared to the Blue/Green/Purple Option
- In relation to the criteria “Route length and grade efficiency”, the Orange Option is a shorter length than the Blue/Green/Purple Option
- In relation to the criteria “Constructability”, the Orange Option rates better than the Blue/Green/Purple Option due to the amount of construction under traffic, etc

### **Section D**

- In relation to the criteria “Capacity to stage and achieve early benefits”, there is no significant difference between the options although the Blue Option might be slightly more difficult to stage
- In relation to the criteria “Safety risks during construction”, the Orange/Green/Purple Option has a shorter length of construction required under traffic than the Blue Option
- In relation to the criteria “Route length and grade efficiency”, the Orange/Green/Purple Option is a shorter length than the Blue Option
- In relation to the criteria “Constructability”, the Orange/Green/Purple Option appears less difficult to construct than the Blue Option

## Assessment of Corridor Options within the Social and Economic Perspective

		Social & Economic Perspective										
		Assessment Criteria	Number & area of properties acquired	Consolidation of communities	Compatibility with existing businesses & planning proposals	Impacts on agricultural, forest & rural lands	Noise impacts on existing & new receivers	Views & aesthetics of the road from the community				
Section A												
OPTIONS		WT	ASSIGNED WEIGHT									
<b>Orange</b>	5		12	14	27	21	23	3				RANK <b>1</b>
	4		E	E	E	E	E	E	E	E	E	
	3		VG	VG	VG	VG	VG	VG	VG	VG	VG	
	2		G	G	G	G	G	G	G	G	G	
	1		F	F	F	F	F	F	F	F	F	
	Sub Total			12	28	135	21	23	6			

<b>Green, Blue, Purple</b>	5		E	E	E	E	E	E	E	E	RANK <b>2</b>
	4		VG	VG	VG	VG	VG	VG	VG	VG	
	3		G	G	G	G	G	G	G	G	
	2		F	F	F	F	F	F	F	F	
	1		P	P	P	P	P	P	P	P	
	Sub Total			24	28	27	63	46	3		

		Social & Economic Perspective										
		Assessment Criteria	Number & area of properties acquired	Consolidation of communities	Compatibility with existing businesses & planning proposals	Impacts on agricultural, forest & rural lands	Noise impacts on existing & new receivers	Views & aesthetics of the road from the community				
Section B												
OPTIONS		WT	ASSIGNED WEIGHT									
<b>Orange</b>	5		12	14	27	21	23	3				RANK <b>1</b>
	4		E	E	E	E	E	E	E	E	E	
	3		VG	VG	VG	VG	VG	VG	VG	VG	VG	
	2		G	G	G	G	G	G	G	G	G	
	1		F	F	F	F	F	F	F	F	F	
	Sub Total			60	70	108	21	92	12			

<b>Blue, Green</b>	5		E	E	E	E	E	E	E	E	RANK <b>3</b>
	4		VG	VG	VG	VG	VG	VG	VG	VG	
	3		G	G	G	G	G	G	G	G	
	2		F	F	F	F	F	F	F	F	
	1		P	P	P	P	P	P	P	P	
	Sub Total			12	14	27	84	23	3		

<b>Purple</b>	5		E	E	E	E	E	E	E	E	RANK <b>2</b>
	4		VG	VG	VG	VG	VG	VG	VG	VG	
	3		G	G	G	G	G	G	G	G	
	2		F	F	F	F	F	F	F	F	
	1		P	P	P	P	P	P	P	P	
	Sub Total			48	56	54	42	46	6		

		Social & Economic Perspective										
Section C	Assessment Criteria	Number & area of properties acquired	Consolidation of communities	Compatibility with existing businesses & planning proposals	Impacts on agricultural, forest & rural lands	Noise impacts on existing & new receivers	Views & aesthetics of the road from the community					
	ASSIGNED WEIGHT											
OPTIONS		WT	12	14	27	21	23	3				
Orange	5		E	E	E	E	E	E	E	E	E	RANK <b>2</b>
	4		VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3		(G)	(G)	G	G	(G)	G	G	G	G	
	2		F	F	F	F	F	F	F	F	F	
	1		P	P	(P)	(P)	P	(P)	P	P	P	
	Sub Total		<b>36</b>	<b>42</b>	<b>27</b>	<b>21</b>	<b>69</b>	<b>3</b>				

Green, Blue, Purple	5		E	E	E	E	E	E	E	E	E	RANK <b>1</b>
	4		VG	VG	(VG)	VG	VG	VG	VG	VG	VG	
	3		(G)	G	G	(G)	G	(G)	G	G	G	
	2		F	(F)	F	F	(F)	F	F	F	F	
	1		P	P	P	P	P	P	P	P	P	
	Sub Total		<b>36</b>	<b>28</b>	<b>108</b>	<b>63</b>	<b>46</b>	<b>9</b>				

		Social & Economic Perspective										
Section D	Assessment Criteria	Number & area of properties acquired	Consolidation of communities	Compatibility with existing businesses & planning proposals	Impacts on agricultural, forest & rural lands	Noise impacts on existing & new receivers	Views & aesthetics of the road from the community					
	ASSIGNED WEIGHT											
OPTIONS		WT	12	14	27	21	23	3				
Blue	5		E	E	E	E	E	E	E	E	E	RANK <b>1</b>
	4		VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3		(G)	G	G	G	G	G	G	G	G	
	2		F	F	F	(F)	F	(F)	F	F	F	
	1		P	P	P	P	P	P	P	P	P	
	Sub Total		<b>36</b>			<b>42</b>		<b>6</b>				

Orange, Green, Purple	5		E	E	E	E	E	E	E	E	E	RANK <b>1</b>
	4		VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3		(G)	G	G	G	G	G	G	G	G	
	2		F	F	F	F	F	F	F	F	F	
	1		P	P	P	(P)	P	(P)	P	P	P	
	Sub Total		<b>36</b>			<b>21</b>		<b>3</b>				

## **Key Observations**

### **Section A**

- In relation to the criteria “Number and area of properties acquired”, the comparison was made between the Green and Orange Options
- In relation to the criteria “Consolidation of communities”, the Glen Ewan Road area was considered as a community (a public submission was lodged from residents of Glen Ewan Road). An elevated bridge with an access under the bridge may be required
- In relation to the criteria “Compatibility with existing businesses and planning proposals”, the Orange option has less conflict with the operations of Birdon Marine. Relocation of Birdon Marine may not be possible.
- In relation to the criteria “Impacts on agricultural, forest and rural lands”, properties should be fully acquired where operations are significantly affected. Alignment of the new road with property boundaries is preferred
- In relation to the criteria “Noise impacts on existing and new receivers”, all receivers are considered to be existing receivers
- In relation to the criteria “Views and aesthetics of the road from the community”, the bridge is to have an 8m high deck level (to accommodate heavy vehicle movements under the bridge). Structures (bridges) will have a different form to the existing bridge. There will initially be two new bridges over the Hastings River in the Orange and Green/Purple Options and one new bridge in the Blue Option. There will eventually be three bridges crossing the Hastings River in the Blue Option in the Class M scenario (two bridges for the highway and one bridge for the service road)

### **Section B**

- In relation to the criteria “Number and area of properties acquired”, the Orange Option should align as close to property boundaries as possible. The greater impact on Telegraph Point residential properties considered of high importance
- In relation to the criteria “Consolidation of communities”, The Purple Option has greater impact on the Moorside Drive community compared to the Orange Option
- In relation to the criteria “Compatibility with existing businesses and planning proposals”, the community considers that bypassing the town would improve business opportunities (except the service station). The Tea Tree Farm should be considered as agricultural land (as well as the olive plantation). The service station will have no direct access under all options
- In relation to the criteria “Impacts on agricultural, forest and rural lands”, same comments as above for Tea Tree Farm and olive plantation businesses
- In relation to the criteria “Noise impacts on existing and new receivers”, there is a need to acknowledge that impacts on new receivers should be considered
- In relation to the criteria “Views and aesthetics of the road from the community”, impacts will include the raised embankment across the floodplain, cuttings and bridge structures. The greater distance from the town, the lesser the impacts

### **Section C**

- In relation to the criteria “Number and area of properties acquired”, no route should jeopardise the viability of the quarry. No structures are affected. Loss of land in the State Forest is considered under the other (later) criteria
- In relation to the criteria “Consolidation of communities”, the Cooperabung Hill climb is not affected
- In relation to the criteria “Compatibility with existing businesses and planning proposals”, no route should jeopardise the viability of the quarry. Consider moving the Orange Option to the west. The ranking is based on unmodified options. We could improve the Orange Option if moved to the west to avoid quarry expansion
- In relation to the criteria “Impacts on agricultural, forest and rural lands”, the consideration includes severance of forest land
- In relation to the criteria “Noise impacts on existing and new receivers”, no comment was recorded
- In relation to the criteria “Views and aesthetics of the road from the community”, significant cuttings will impact on views. Viewing points are limited. The Orange Option has deeper and longer cuttings.

## Section D

- In relation to the criteria “Number and area of properties acquired”, the differences between the options are negligible
- In relation to the criteria “Consolidation of communities”, “Compatibility with existing businesses and planning proposals” and “Noise impacts on existing and new receivers”, the options could not be differentiated
- In relation to the criteria “Impacts on agricultural, forest and rural lands”, there are minor impacts on State Forests. Potential severance will occur from the new alignment
- In relation to the criteria “Views and aesthetics of the road from the community”, additional clearing on the new alignment will create a visual corridor

## Assessment of Corridor Options within the Natural and Cultural Environment Perspective

Natural & Cultural Environment Perspective												
Section A	Assessment Criteria	Impact on wildlife corridors	Impact on Aboriginal heritage	Impact on non Aboriginal heritage	Impact on waterways & wetlands	Impact on threatened species (incl koala & habitat)	Area of HC/IEEC vegetation cleared	Total area of native vegetation cleared				
		6	26	2	11	26	26	3				
OPTIONS												
Orange	WT											
	5	E	E	E	E	E	E	E	E	E	E	RANK <b>2</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	P	
Sub Total			<b>26</b>		<b>22</b>	<b>52</b>	<b>78</b>	<b>6</b>			<b>184</b>	

Green, Blue, Purple	5	E	E	E	E	E	E	E	E	E	E	RANK <b>1</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	P	
	Sub Total			<b>78</b>		<b>33</b>	<b>78</b>	<b>52</b>	<b>9</b>			

Natural & Cultural Environment Perspective												
Section B	Assessment Criteria	Impact on wildlife corridors	Impact on Aboriginal heritage	Impact on non Aboriginal heritage	Impact on waterways & wetlands	Impact on threatened species (incl koala & habitat)	Area of HC/IEEC vegetation cleared	Total area of native vegetation cleared				
		6	26	2	11	26	26	3				
OPTIONS												
Orange	WT											
	5	E	E	E	E	E	E	E	E	E	E	RANK <b>2</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	P	
Sub Total		<b>6</b>	<b>52</b>	<b>8</b>	<b>11</b>	<b>26</b>	<b>52</b>	<b>6</b>			<b>161</b>	

Blue, Green	5	E	E	E	E	E	E	E	E	E	E	RANK <b>1</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	P	
	Sub Total		<b>18</b>	<b>78</b>	<b>2</b>	<b>33</b>	<b>104</b>	<b>104</b>	<b>6</b>			

Purple	5	E	E	E	E	E	E	E	E	E	E	RANK <b>3</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	P	
	Sub Total		<b>18</b>	<b>26</b>	<b>8</b>	<b>11</b>	<b>26</b>	<b>26</b>	<b>3</b>			

Natural & Cultural Environment Perspective											
Section C	Assessment Criteria	Impact on wildlife corridors	Impact on Aboriginal heritage	Impact on non Aboriginal heritage	Impact on waterways & wetlands	Impact on threatened species (incl koala & habitat)	Area of HC/EEC vegetation cleared	Total area of native vegetation cleared			
	ASSIGNED WEIGHT										
OPTIONS	WT	6	26	2	11	26	26	3			
Orange	5	E	E	E	E	E	E	E	E	E	RANK <b>2</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	
	Sub Total		6	26		22	26	26	3		
Green, Blue, Purple	5	E	E	E	E	E	E	E	E	E	RANK <b>1</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	
	Sub Total		18	78		33	78	78	12		

Natural & Cultural Environment Perspective											
Section D	Assessment Criteria	Impact on wildlife corridors	Impact on Aboriginal heritage	Impact on non Aboriginal heritage	Impact on waterways & wetlands	Impact on threatened species (incl koala & habitat)	Area of HC/EEC vegetation cleared	Total area of native vegetation cleared			
	ASSIGNED WEIGHT										
OPTIONS	WT	6	26	2	11	26	26	3			
Blue	5	E	E	E	E	E	E	E	E	E	RANK <b>1</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	
	Sub Total						52		3		
Orange, Green, Purple	5	E	E	E	E	E	E	E	E	E	RANK <b>1</b>
	4	VG	VG	VG	VG	VG	VG	VG	VG	VG	
	3	G	G	G	G	G	G	G	G	G	
	2	F	F	F	F	F	F	F	F	F	
	1	P	P	P	P	P	P	P	P	P	
	Sub Total						26		6		

## **Key Observations**

### **Section A**

- In relation to the criteria “Impact on wildlife corridors”, it was not a distinguishing factor for this section
- In relation to the criteria “Impact on Aboriginal heritage”, the Orange Option does not perform as well as the other option
- In relation to the criteria “Impact on non Aboriginal heritage”, it was not a distinguishing factor for this section
- In relation to the criteria “Impact on waterways and wetlands”, the Orange Option has a longer bridge, bisects a greater area of wetlands and we should be considering all wetlands
- In relation to the criteria “Impact on threatened species (including koala and habitat)”, the Orange Option clears more native vegetation and koala habitat and also creates additional barriers for koalas
- In relation to the criteria “Area of HCV/EEC vegetation cleared”, the options were assessed on EEC data only as CRA data was not accurate enough to determine HCV areas. Very little difference between the options. The Blue Option has been included in the Purple/Green Option but the Blue Option has the lowest impact on EECs
- In relation to the criteria “Total area of vegetation cleared”, the Orange Option has the most area cleared. The Green/Blue/Purple Option is approximately the same. There is only a small difference between Green/Blue/Purple Option and the Orange Option

### **Section B**

- In relation to the criteria “Impact on wildlife corridors”, assessed based on local knowledge and RTA koala mapping
- In relation to the criteria “Impact on Aboriginal heritage”, The Blue/Green Option requires less disturbance and therefore less impact on Aboriginal heritage. The Orange Option is on the floodplain and less likely to encounter Aboriginal heritage. The Purple Option goes across Dalhanty Island where there is a higher potential for Aboriginal sites/heritage
- In relation to the criteria “Impact on non Aboriginal heritage”, The Blue/Green Option is poor because it impacts on the heritage precinct of Telegraph Point. The Orange and Purple Options are similar to each other and better than the Blue/Green Option
- In relation to the criteria “Impact on waterways and wetlands”, the wetlands are impacted the greatest. The Blue/Green Option performs the best because it has the least impact
- In relation to the criteria “Impact on threatened species (including koala and habitat)”, the assessment was based on the knowledge of known koala habitat
- In relation to the criteria “Area of HCV/EEC vegetation cleared”, the Purple Option performs the worst (greater ecological impacts around the Wilson River)
- In relation to the criteria “Total area of vegetation cleared”, no comment recorded

### **Section C**

- In relation to the criteria “Impact on wildlife corridors”, assessed based on local knowledge and RTA koala mapping
- In relation to the criteria “Impact on Aboriginal heritage”, same comment as Section B, (ie. more disturbance on the Orange Option). Also impacts on the north-south ridgelines
- In relation to the criteria “Impact on non Aboriginal heritage”, it was not a distinguishing factor for this section
- In relation to the criteria “Impact on waterways and wetlands”, the Orange Option is ranked lower because it goes through a less disturbed area
- In relation to the criteria “Impact on threatened species (including koala and habitat)”, the Orange Option has a much larger impact than the Green/Blue/Purple Option (ie. new severance, greater area of habitat removed)
- In relation to the criteria “Area of HCV/EEC vegetation cleared”, as mentioned before and assessed on EEC impact
- In relation to the criteria “Total area of vegetation cleared”, as mentioned before and assessed minus the EEC impact

## Section D

- In relation to the criteria “Impact on wildlife corridors”, it was not a distinguishing factor for this section
- In relation to the criteria “Impact on Aboriginal heritage”, it was not a distinguishing factor for this section
- In relation to the criteria “Impact on non Aboriginal heritage”, it was not a distinguishing factor for this section
- In relation to the criteria “Impact on waterways and wetlands”, it was not a distinguishing factor for this section
- In relation to the criteria “Impact on threatened species (including koala and habitat)”, the Blue Option ranked higher because it is widening the existing highway (but it is only a small difference)
- In relation to the criteria “Area of HCV/EEC vegetation cleared”, the options cannot be assessed against this criteria. Further information needed
- In relation to the criteria “Total area of vegetation cleared”, the Blue Option clears more vegetation (but only 10ha more)

## Summary of Strategic Project Cost Estimates

As concept project cost estimates were still to be determined, preliminary information was presented to the workshop to give an understanding of the relative nature of the capital costs of the various corridor options in each section for comparative purposes.

The strategic project cost estimates included:

- Project development costs
- Investigation and design costs
- Property acquisition costs
- Public utility adjustments costs
- Construction costs
- Handover costs

The strategic project cost estimates for the ultimate road solution for comparison purposes only appear below as presented to the group.

Section & Corridor Options	Strategic Estimate (\$ million)
<b>Section A</b>	
Orange Option	<b>230</b>
Green/Blue/Purple Option	<b>280</b>
<b>Section B</b>	
Orange Option	<b>250</b>
Blue/Green Option	<b>230</b>
Purple Option	<b>280</b>
<b>Section C</b>	
Orange Option	<b>80</b>
Green/Blue/Purple Option	<b>65</b>
<b>Section D</b>	
Blue Option	<b>145</b>
Orange/Green/Purple Option	<b>170</b>

## Summary of Corridor Option Assessment Rankings

A summary of the rankings of the corridor options against the various perspectives together with the cost estimates presented earlier appears below

### Section A

Corridor Option	Assessment Perspective			
	Functional	Social & Economic	Natural & Cultural Environment	Cost (\$M)**
Orange Option	1	1	2	230
Green/Blue/Purple Option	1	2	1	280

*\*\* It should be noted that the costs above relate to the total option cost within Section A even though the difference between the options is only for part of the section*

### Section B

Corridor Option	Assessment Perspective			
	Functional	Social & Economic	Natural & Cultural Environment	Cost (\$M)
Orange Option	1	1	2	250
Blue/Green Option	3	3	1	230
Purple Option	2	2	3	280

### Section C

Corridor Option	Assessment Perspective			
	Functional	Social & Economic	Natural & Cultural Environment	Cost (\$M)
Orange Option	1	2	2	80
Green/Blue/Purple Option	2	1	1	65

### Section D

Corridor Option	Assessment Perspective			
	Functional	Social & Economic	Natural & Cultural Environment	Cost (\$M)**
Blue Option	2	1	1	145
Orange/Green/Purple Option	1	1	1	170

*\*\* It should be noted that the costs above relate to the total option cost within Section D even though the difference between the options is only for part of the section*

## Recommending a Preferred Direction

As a result of the work undertaken above, the group (in focus groups) was asked "Which corridor option should be recommended as the preferred option to move forward for refinement and more detailed investigation to progress the project as well as the reasons why". However, the preference is "subject to" certain identified issues being addressed. It should be noted that each focus group was (as much as possible) a representative cross section of the workshop participants (ie. a mix of community, council, government agencies, RTA and Study Team representatives, etc).

One focus group examined Section A of the Study Area, another focus group examined Section B, another focus group examined Section C and a fourth focus group reviewed Section D. Their findings were then discussed, amended (if required) and finally agreed as to the direction forward by the whole workshop group.

The focus group conclusions as agreed by the whole group are recorded below.

### **Focus group examining Section A**

***We recommend the Orange Option as the preferred corridor in Section A to move forward***

***Because:***

- It is the most compatible with existing major businesses
- It allows for greater separation of the ultimate bridge structures (ie. the new bridges from the existing bridge) with resultant aquatic and safety advantages
- It provides significant construction advantages over the other corridor options

***Subject to:***

- Considering the potential for realignment at the northern end of Section A to minimise impacts on the Cairncross State Forest and Rawdon Creek Nature Reserve (ie. move the corridor to the east and parallel to the highway)
- Access for existing residents along the south bank of the Hastings River being maintained
- Resolving a suitable "Gateway" presentation for Port Macquarie from the north

### **Focus group examining Section B**

***We recommend the Orange Option as the preferred corridor in Section B to move forward***

***Because:***

- It has superior social and economic benefits (for the Telegraph Point community) as well as its better functional performance over the other options although it is acknowledged there will be an environmental loss
- It has the opportunity for improvement at the southern end (after further investigations) with respect to impacts on the farms and the State Forest

***Subject to:***

- Appreciation that the mitigation measures are likely to involve substantial costs (possibly above any "averaging" costs employed in the estimates)
- Undertaking the feasibility of realigning the Orange Option to enable joining the corridor recommendations in Sections A and B (ie. moving the corridor further to the east) and avoiding/minimising the impacts on environmental considerations, farms and the State Forests
- Completion of detailed environmental studies in Cairncross State Forest and north of Wilson River (near Wilmaria Drive) to determine the impacts
- An Aboriginal cultural heritage assessment (based on engagement with the local Aboriginal people)
- A better understanding of impacts on businesses and properties in the area

### **Focus group examining Section C**

***We recommend the Green/Blue/Purple (common) Option as the preferred corridor in Section C to move forward***

***Because:***

- It has environmental, social and economic advantages which outweigh the functional advantages of the alternative (being the Orange Option)
- The concerns about the potential restrictions to the existing Yarrabee Quarry are strong reasons to pursue a corridor which is closer to the existing highway alignment than the Orange Option
- It has the lowest cost

***Subject to:***

- Ensuring the developed design has minimal impacts on the Cooperabung Hill climb track

## Focus group examining Section D

**We recommend the Orange/Green/Purple (common) Option as the preferred corridor in Section D to move forward**

### **Because:**

- It allows work to proceed in a new corridor without affecting the existing highway
- It is a straighter alignment
- It has similar impacts to the alternative option (Blue Option)
- It provides improved grades and better vehicle operating costs

### **Subject to:**

- Having more detail and a better appreciation of the impacts on the flora and fauna for this option
- Refining the option to minimise incursion into the Maria River State Forest (ie. move closer to existing highway) whilst balancing the separation of the corridor from the existing highway during construction (ie. safety issues during construction)
- Detail of the mitigation measures for fauna being practical and feasible to avoid the east to west segregation/severance
- Clarification of the cost difference between this corridor option and the Blue Option

## Conclusions Drawn from the Workshop

As a result of the discussions over the two days of the workshop, the group agreed to the following conclusions:

- The preferred corridor options recommended where shortlisted options existed (subject to the points noted) were the **Orange Option in Sections A and B**, the common **Green/Blue/Purple Option in Section C** and the common **Orange/Green/Purple Option in Section D**
- The Study Team needs to prove up the materials arising from the workshop including the recorded assumptions and the “subject to” items accompanying the recommendations
- The workshop group acknowledged that the recommendations are made based on the level of information available at the time of the workshop which requires supplementation
- Some of the options could have significant environmental impacts (ie. flora and fauna impacts) which need to be costed and realistic allowances for mitigation measures factored into the project budget
- The Study Team needs to continue consultation with the Aboriginal communities and the Elders to clarify possible heritage constraints (and any potential LALC matters which may impact on the project)
- There is still a need to determine staging and local access arrangements for the project (ie. separated carriageway, Class M or Class A standard road, achieving early benefits, etc)
- The workshop was a positive experience which embraced perspectives across a broad cross section of stakeholders and contributed to the successful workshop outcomes

## Action Plan

At the conclusion of the workshop, an Action Plan was produced which outlined the direction and process to be undertaken by the Study Team and others to move the project forward from here.

No.	Task	By Whom
1.	Address the “subject to” items identified by the workshop group accompanying the recommendations	GHD
2.	Consider in the next level of detail (ie. access points and service roads as well as the environmental impact of the accesses and service roads and impacts on the community and councils, etc). There is a need to continue consultation processes with the community	GHD
3.	Develop a draft workshop report to be provided to the Study Team and RTA for their distribution to all participants	ACVM
4.	Draft a media release on the findings of VM workshop to inform the community of the recommendations	RTA

## Where to From Here?

Steve Williamson, Project Development Manager, RTA provided an overview of the next steps in the process. Key points raised were:

- The project team has received a clear and strong direction from the workshop group and need to review the noted opportunities to improve the recommended corridor options and address the highlighted risks and assumptions raised
- There are three elements of the process which will come together to inform the Minister for Roads and assist the decision on the preferred route for this section of the Pacific Highway Upgrade. These are:
  - The public submissions and formal comments on short listed corridor options
  - The Study Team's separate Route Selection Report and recommendations
  - The Value Management Workshop recommendations
- It is expected that the Minister will make a decision on the preferred corridor by mid 2006
- Preliminary design and specialist studies will then commence. It is at this stage issues such as access points to the highway and the packaging elements of this project with projects to the north will be considered
- An environmental assessment will be submitted to the Department of Planning for approval

It was reinforced that the project for this section of the Pacific Highway is currently unfunded for construction. The relative priority for this section still needs to be determined. However planning will proceed and may require the development of a staged approach to the ultimate solution.

The NSW and Commonwealth funding model to complete the upgrade of the Pacific Highway from Hexham to the Queensland border will determine the quantum and opportunity for timing of both the planning and construction of all new works

The contributions and critical importance of the Community Liaison Group and the Environmental Focus Group is acknowledged and it is the intention of the RTA to maintain ongoing consultation with both groups and with all stakeholders throughout the next phases of project planning.

**Appendix 4. Option Comparison by Section (extract from Workshop Background Paper)**

**Broad Summary of Advantages and Disadvantages of Route Options for Section A – All route options share a common corridor north to approximately 600 metres south of Fernbank Creek.**

*For the purposes of the workshop, participants were asked to compare Class M Options only. This meant that for Section A, participants compared the Orange Option with the Green/Blue/Purple (common) Option*

<b>Feature</b>	<b>Blue Option</b>	<b>Green Option</b>	<b>Purple Option</b>	<b>Orange Option</b>
Length	Similar to existing.	30 metres shorter than existing.	Similar to existing.	145 metres shorter than existing.
Length of construction under traffic	Greatest length of construction under traffic and potentially greatest road user delays during construction.	Construction either under traffic or adjacent to traffic, hence lower road user delays during construction than for the Blue option but much higher road user delays than for the Orange option.		No construction under traffic, hence least road user delays during construction.
Soft Soils / Acid Sulphate Soils	This option traverses a similar extent of soft soils and acid sulphate soils as the Green and Purple options.	These options traverse a similar extent of soft soils and acid sulphate soils as the Blue option.		This option potentially traverses the largest extent of soft soils and acid sulphate soils.
Upgrading of existing highway	Longest length	Slightly less than the Blue option	Slightly Less than the Green option	Shortest length
Public Utilities	Blue, Green and Purple options have greater impact on public utilities than the Orange option, hence greater potential for disruption to services.			Least impact on public utilities.
Staging	Most difficult to stage due to construction under traffic.	Less difficult to stage than the Blue option due to realignment in the vicinity of the Hastings River.		In the area where this option deviates from the others, this option is the easiest to stage construction in both the long and short term.
Hastings River Crossing	One new bridge required immediately west of existing Dennis Bridge.	Two new bridges required immediately west of the existing Dennis Bridge.		Two new bridges required approximately 320 metres west of the existing Dennis Bridge.
Private land Impact	Directly impacts on approx. 46 ha of privately owned land.	Directly impacts on approx. 51 ha of privately owned land.	Directly impacts on approx. 51 ha of privately owned land.	Directly impacts on approx. 57 ha of privately owned land.
Parcels of land affected	Has an impact on 30 parcels of land	Has an impact on 32 parcels of land	Has an impact on 33 parcels of land	Has an impact on 34 parcels of land
Structures impacted	Directly impacts on one structure.	No impacts on structures.	No impacts on structures.	Directly impacts on one structure.

<b>Feature</b>	<b>Blue Option</b>	<b>Green Option</b>	<b>Purple Option</b>	<b>Orange Option</b>
Noise	<b>Least change in noise environment (best option for noise impact)</b>	<b>Lower change in noise environment than the Orange option.</b>		<b>Highest change in noise environment (worst option for noise impact)</b>
Heritage	<b>Blue, Green and Purple options pass through an area containing culturally sensitive sites on either side of the Hastings River.</b>			<b>The Orange option passes through the same culturally sensitive area as the other options and also an unconfirmed possible artefact scatter is located in the vicinity of this option.</b>
Vegetation clearance	<b>Total area of vegetation clearing is approximately 25 ha.</b>			<b>Total area of vegetation clearing is approximately 45 ha.</b>
High conservation value clearance	<b>Approximately 13 ha.</b>			<b>Approximately 10 ha.</b>

**Broad Summary of Advantages and Disadvantages of Route Options for Section B**

<b>Feature</b>	<b>Blue Option</b>	<b>Green Option</b>	<b>Purple Option</b>	<b>Orange Option</b>
Length	Similar to existing.	Similar to existing.	200 metres shorter than existing.	970 metres shorter than existing.
Length of construction under traffic	These options have the greatest length of construction required under traffic and potentially greatest road user delays during construction.		Length of construction under traffic is less than Orange option but more than Blue and Green options.	Least length of construction required under traffic and hence least road user delays during construction.
Soft Soils / Acid Sulphate Soils	These options potentially traverse the least extent of soft soils and acid sulphate soils.		This option traverses more soft soils and acid sulphate soils than the Blue and Green options but less than the Orange option.	This option potentially traverses the greatest extent of soft soils and acid sulphate soils.
Upgrading of existing highway	These options require the upgrading of the greatest length of the existing highway to meet current design standards.			Does not require existing highway to be upgraded.
Public Utilities	These options would have the greatest impact on public utilities, hence greater potential for disruption to services.		Greater impact on public utilities than the Orange option but less impact than the Blue and Green options.	Least impact on public utilities.
Staging	These options are the most difficult to stage in the short term due to construction under traffic and construction within Telegraph Point.		More difficult to stage than the Orange option but easier than the Blue and Green options.	Easiest to stage construction in both long and short term.
Wilson River Crossing	One new bridge required immediately east of existing.		Two new bridges approximately 1.7km east of the existing highway bridge (Crosses through the centre of Dalhunny Island. Longest length of new bridges required).	Two new bridges approximately 2.4km east of the existing highway bridge (Crosses at the eastern tip of Dalhunny Island).
Severance	Further divides communities either side of the highway at Telegraph Point through the construction of a wider road corridor.		Severance of a number of rural properties to the south of the Wilson River. Potential	Potential isolation of rural properties along Haydons Wharf Road. Severance of a number of

<b>Feature</b>	<b>Blue Option</b>	<b>Green Option</b>	<b>Purple Option</b>	<b>Orange Option</b>
	<b>Potential for severance of residences in Moorside Drive from those in Pembroke Road and Mooney Street.</b>		<b>for perceived isolation of rural properties at the end of Wilmaria Road.  Likely improved community cohesion within Telegraph Point both north and south of the Wilson River.</b>	<b>properties to the south of the Wilson River.  Likely improved community cohesion within Telegraph Point both north and south of the Wilson River.</b>
Private land Impact	<b>Directly impacts on approximately 47 ha of privately owned land. These options maximise the use of the existing road corridor.</b>		<b>Directly impacts on approximately 84 ha of privately owned land.</b>	<b>Directly impacts on approximately 84 ha of privately owned land.</b>
Parcels of land affected	<b>Has an impact on 65 parcels of land</b>		<b>Has an impact on 40 parcels of land</b>	<b>Has an impact on 16 parcels of land</b>
Structures impacted	<b>Directly impacts on 17 structures.</b>		<b>Directly impacts on 10 structures.</b>	<b>Directly impacts on 5 structures.</b>
Noise	<b>Although similar to the existing noise levels, these options have the highest change in noise environment (worst option for noise impact).</b>		<b>Significantly change in noise environment than the Blue and Green options (2<sup>nd</sup> best option for noise impact).</b>	<b>Lowest change in noise environment (best option for noise impact).</b>
Heritage	<b>There are seven non-indigenous heritage items listed on local heritage registers that occur within or in the immediate proximity of these options.</b>			<b>One Aboriginal site (an artefact scatter) is situated approximately 200 metres east of this option.</b>
Vegetation clearance	<b>The total area of vegetation clearance is approximately 15 ha.</b>		<b>The total area of vegetation clearance is approximately 33 ha.</b>	<b>The total area of vegetation clearance is approximately 43 ha.</b>
High conservation value clearance	<b>Area of high conservation value clearance is approximately 11 ha.</b>		<b>Area of high conservation value clearance is approximately 20 ha.</b>	<b>Area of high conservation value clearance is approximately 10 ha.</b>

### Broad Summary of Advantages and Disadvantages of Route Options for Section C

Feature	Blue Option	Green Option	Purple Option	Orange Option
Length	40 metres shorter than existing.	40 metres shorter than existing.	40 metres shorter than existing.	320 metres shorter than existing.
Length of construction under traffic	These options have the greatest length of construction required under traffic and potentially greatest road user delays during construction.			No construction required under traffic.
Upgrading of existing highway	These options require the upgrading of the greatest length of the existing highway to meet current design standards.			Does not require existing highway to be upgraded.
Public Utilities	These options would have the greatest impact on public utilities, hence greater potential for disruption to services.			Least impact on public utilities.
Staging	These options are the most difficult to stage in the short term due to construction under traffic.			Easiest to stage construction in both long and short term.
Severance	Potential for perceived isolation of rural properties on the eastern side of the existing highway, with respect to accessibility to Kempsey and from Port Macquarie to Telegraph Point due to changed access arrangements.			Severance to rural residential properties on the eastern side of the existing highway at the southern end of this section opposite Cooperabung Drive.
Private land Impact	Directly impacts on approximately 13 ha of privately owned land. These options maximise the use of the existing road corridor.			Directly impacts on approximately 61 ha of privately owned land.
Parcels of land affected	These options have an impact on 5 properties.			
Noise	Although similar to the existing noise levels, these options have the highest change in noise environment (worst option for noise impact).			Lowest change in noise environment (best option for noise impact).
Heritage				A potential Aboriginal ceremonial place in the vicinity of Cooperabung Hill may be located in the vicinity of this option.
Vegetation clearance	The total area of vegetation clearance is approximately 51 ha.			The total area of vegetation clearance is approximately 52 ha.
High conservation value clearance	Area of high conservation value clearance is approximately 36 ha.			Area of high conservation value clearance is approximately 2 ha.

**Broad Summary of Advantages and Disadvantages of Route Options for Section D - All route options share a common corridor north to the northern intersection with Ravenswood Road**

<b>Feature</b>	<b>Blue Option</b>	<b>Green Option</b>	<b>Purple Option</b>	<b>Orange Option</b>
Length	<b>60 metres shorter than existing.</b>	<b>132 metres shorter than existing.</b>	<b>132 metres shorter than existing.</b>	<b>132 metres shorter than existing.</b>
Length of construction under traffic	<b>This option has the greatest length of construction required under traffic and potentially greatest road user delays during construction.</b>	<b>These options have a shorter length of construction required under traffic than the Blue option.</b>		
Upgrading of existing highway	<b>This option requires the upgrading of the greatest length of the existing highway to meet current design standards.</b>	<b>These options require the upgrading of a shorter length of the existing highway than the Blue option.</b>		
Staging	<b>Most difficult to stage in the short term due to construction under traffic for length of section.</b>	<b>Difficult (but possible) to stage in the short term due to construction under traffic through Kundabung.</b>		
Private land Impact	<b>Directly impacts on approx 63ha of privately owned land. Maximises the use of the existing road corridor.</b>	<b>Directly impacts on approximately 61 ha of privately owned land.</b>		
Parcels of land affected	<b>Impacts on 48 properties</b>	<b>Impacts on 47 properties</b>		
Noise	<b>Expected noise levels are similar to the existing highway, impacts on only one more property than the Green and Purple options.</b>	<b>Although expected noise levels are similar to the existing highway, these options have the lowest noise impact on residences (marginally the best option for noise impact).</b>	<b>Expected noise levels are similar to the existing highway, impacts on only three more properties than the Green and Purple options (marginally the worst option for noise impact).</b>	
Vegetation clearance	<b>Total area of vegetation clearance is approximately 61ha</b>	<b>The total area of vegetation clearance is approximately 68 ha.</b>		
High conservation value clearance	<b>Area of high conservation value clearance is approximately 20 ha</b>			