Woodburn to Ballina upgrade

Upgrading the Pacific Highway

PREFERRED ROUTE SUBMISSIONS REPORT
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1 Introduction

1.1 Background

The Roads and Traffic Authority (RTA) has investigated options to upgrade the Pacific Highway between Woodburn and Ballina on the north coast of New South Wales. This section of the existing highway is approximately 32km in length. The project would link the existing highway south of Woodburn to the approved Ballina Bypass.

Planning for the proposed Woodburn to Ballina Upgrade is funded by the NSW Government, as part of the Pacific Highway Upgrading Program in NSW.

The RTA has engaged Hyder Consulting Pty Ltd to undertake route option investigations, concept development and an environmental assessment.

This report has been prepared by Hyder Consulting to describe the stakeholder (community, government agencies, businesses and other organisations) consultation process undertaken during the public display of the preferred route, the views of communities and organisations that contributed to the discussions and the issues raised by all stakeholders for consideration in the refinement of the preferred route.

1.2 The preferred route

For the purposes of the public display of the preferred route the study area was separated into three sections, southern (section 1), central (section 2) and northern (section 3) as shown in **Figure 1**. The preferred route for the Woodburn to Ballina upgrade identifies a nominal 100 metre wide corridor for the development of a concept design for the highway upgrade. This width would allow two lanes in each direction (north and south) with provision for an additional lane in each direction either within the median or on the outside of the carriageways at some time in the future.

1.3 Preferred route announcement

The Minister for Roads announced the preferred route on Wednesday 30 November 2005. Details of the Minister's announcement were contained in the Northern Star and North Coast Advocate newspapers on several occasions.

Letters were sent to all affected property owners and telephone calls were made to all property owners directly affected by the preferred route, members of the community liaison group and members of the focus groups to advise them of the Minister's announcement.

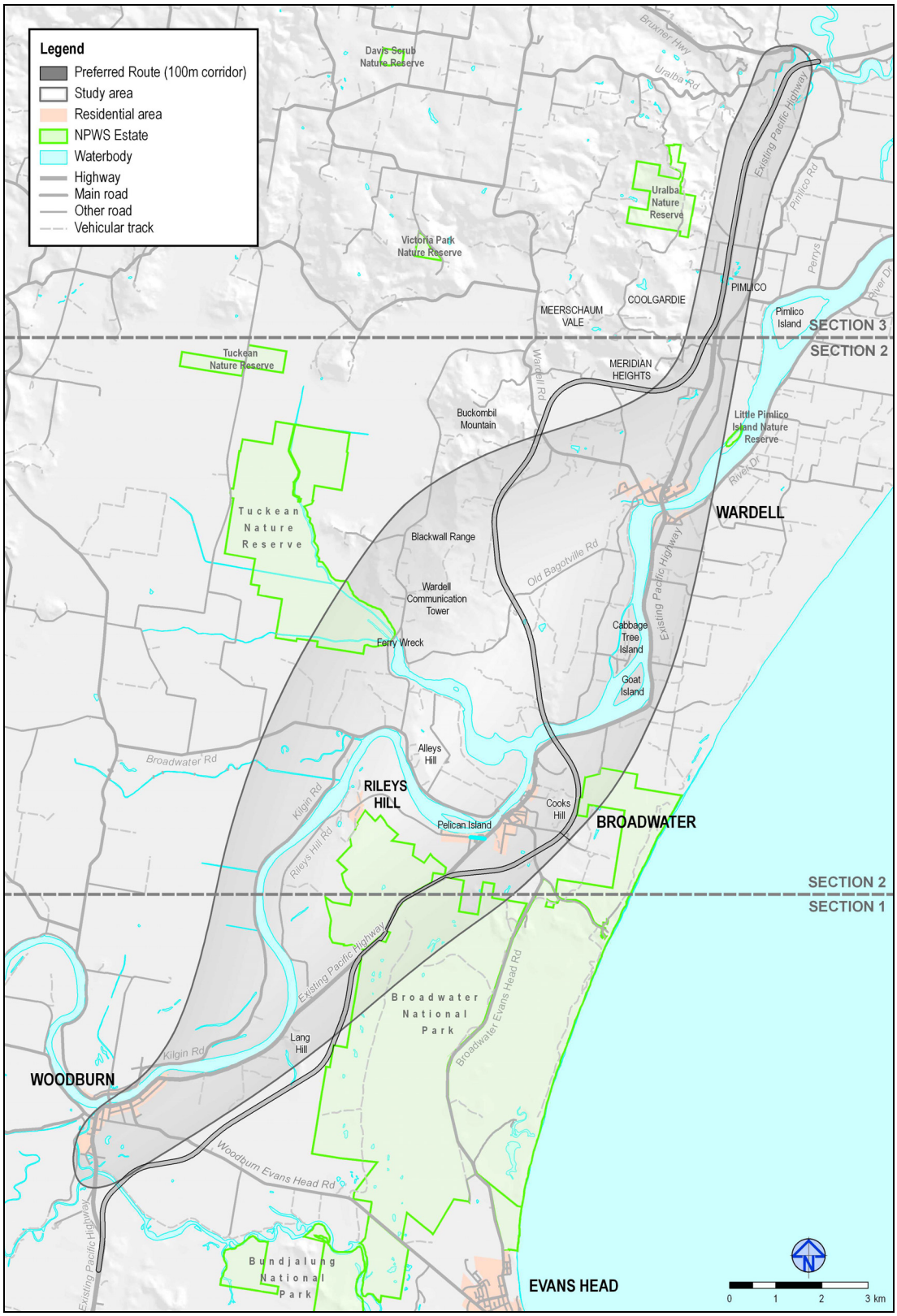

Figure 1 – Woodburn to Ballina Upgrade project – preferred route

2 Preferred route consultation

2.1 Mechanisms used

To facilitate and encourage community and stakeholder feedback on the preferred route, a range of consultation mechanisms were used.

2.1.1 Community information centre

The Woodburn to Ballina community information centre (CIC) at 93 River Street, Woodburn was open to the public from 1 December 2005 to 31 January 2006 on Thursdays and Fridays 10am to 4pm, and Saturdays 9am to 12pm.

Staff were in attendance at these times to provide advice and assistance. Extra copies of the community update that were distributed to all property owners were available at the CIC as well as copies of the Preferred Route Report, the specialist reports and the Route Options Submissions Report. The Preferred Route Report was also made available on a CD.

A freecall information line (1800 887 112) continued to be available as a mechanism for community members to contact the project team. During the public display period, issues raised during these phone calls were logged and callers were encouraged to make a written submission on the preferred route display.

2.1.2 Preferred route display

The display of the preferred route commenced on Friday 2 December 2005 and concluded on Tuesday, 31 January 2006, a period of six weeks.

An advertisement (see **Appendix A**) advising the display period was placed in the following newspapers on several occasions:

- Northern Star (15 December 2005 and 12 January 2006).
- North Coast Advocate (5 and 12 January 2006).

The preferred route was displayed at the Woodburn CIC during opening hours for the entire extended display period. Staff were in attendance at these times to provide advice and assistance. Additional staff were present at the Woodburn CIC on Tuesday 13 December 2005 from 10am to 6pm to meet with community members to discuss various details of the preferred route.

Other staffed displays were located at:

- Wardell Memorial Hall, (Saturday, 3 December 2005, 9am to 1pm).
- Broadwater Community Hall, (Monday, 12 December 2005, 10am to 6pm).

Static, unstaffed displays were provided at the following locations during normal opening hours:

- Wardell Community Access Space.
- Broadwater BP Service Station.
- RTA Motor Registry, West Ballina.
- RTA Motor Registry, Lismore.
- RTA Pacific Highway Office, Grafton.

A static display was provided in the window of the Woodburn Community Information Centre which could be viewed by passers-by.

2.1.3 Community update

A Preferred Route Community Update (see **Appendix B**) provided details of the route. This information included the locations and methods of obtaining additional information (freecall information line, RTA website, RTA Project Manager). People were invited to 'have their say' by a written submission.

2.1.4 RTA website

Information concerning the project was provided on the RTA's website (http://www.woodburntoballina.com.au/). The website contained details of community updates, advertisements, community liaison group (CLG) meetings, focus group meetings, and the Preferred Route Report and supporting documents.

2.2 People consulted

All community members and stakeholders were sent a brochure at the commencement of the preferred route display period. Members of the project team were available throughout this period to discuss all issues related to the preferred route including property impacts and property acquisition procedures as well as various aspects of the study program,

2.2.1 Property owners

Letters were sent to potentially affected property owners at the commencement of the display period. Property owners were given the opportunity to arrange an appointment with study team members to discuss the implications of the preferred route on their properties.

Appointments were arranged at times to suit the property owners either at the CIC or at individual homes. A record of each meeting was prepared during the course of the meeting and provided to affected property owners on request.

2.2.2 Department of Environment and Climate Change

The RTA and Hyder met with the Department of Environment and Climate Change (DECC, formerly known as Department of Environment and Conservation - DEC) officers on 10 March 2006 to discuss aspects of the preferred route which had the potential to impact on DECC estate. Further meetings have been held with DECC in order to progress with the concept design of the preferred route.

2.2.3 Councils

The RTA and Hyder met with council officers from Richmond Valley Council on 6 December 2005 and with Ballina Shire Council on 15 February 2006 to discuss aspects of the preferred route. Further meetings have been held with both councils and the Richmond River County Council in order to progress with the concept design of the preferred route.

2.2.4 Community liaison group and focus groups

Community liaison group meeting 10 was held on 14 December 2005. It gave members of the CLG an opportunity to hear details of the preferred route and to ask questions. Focus group members were invited to attend the CLG meeting.

The only focus group meeting held at that time was the Aboriginal focus group meeting 5 which was held on 6 December 2005. Other focus groups (sugar, ecology and flooding) had met prior to the announcement of the preferred route.

3 Overview of submissions received

Eighty written submissions and seven form letters have been received from individuals and organisations

Wherever possible, all submissions were acknowledged and entered into a submissions database. Each submission received an identification number, issues were identified and responses prepared. **Appendix C** contains an alphabetical list of submission authors together with the submission registration number, stakeholder identification and a classification of the issues raised.

Issues raised in written submissions were grouped in the submissions database as follows:

- Consultation process.
- Route selection process.
- Concept design.
- Hydrology
- Biodiversity
- Indigenous heritage.
- Non-Indigenous heritage.
- Property Issues.
- Landuse, planning and zoning.
- Socio-economic Impact.
- Pollution and global warming.
- Noise
- Visual impact.
- Transport

Issues raised by residents, property owners and businesses and responses to all issues are included in detail in **Appendix D**. The sections following provide an outline of the issues raised, and responses provided.

3.1 Consultation process

Predominant issues raised in the submissions include:

- Selection of option 2C as part of the preferred route which was unanimously opposed by the public during the route options display.
- Community liaison group (CLG) process.
- Approach to the level of assessment to select the preferred route.
- RTA consultation practices.

Main points of clarification with regard to the consultation process include:

- The view that option 2C was unanimously opposed is incorrect. This view was based on community preferences expressed only in feedback forms of which 45% did not indicate a preference for any option.
- All the RTA Pacific Highway upgrade projects required the formation of a CLG. The purpose of the CLG enabled the study team to communicate with community representatives and to receive community input into the decision making process related to identifying route options and the selection of the preferred route. The RTA expected that CLG members would provide two-way feedback with their communities and the study team. Notes from all the CLG meetings have been publicly available on the RTA's project web site www.rta.nsw.gov.au/pacific.
- The RTA believes that a reasonable level of investigation has been undertaken to select a preferred route. To fulfil its statutory obligations in relation to the environmental assessment of the preferred route further investigations will refine the location and design of the route and identify mitigation measures in consultation with relevant stakeholders.
- The consultation process undertaken by the RTA was consistent with the Pacific Highway upgrade program to enable the community to become informed and to inform the project team of their views and opinions. Community information sessions were held in November 2004 and community updates have been mailed to all property owners within the study area. The freecall project information telephone line has been available to provide advice and information.

3.2 Route selection process

Predominant issues raised in the submissions include:

- Extent of information in the Preferred Route Report regarding the issues raised in submissions on the Route Options Report.
- Study team's knowledge of the study area and the issues.

Main points of clarification with regard to the route selection process include:

- Details of all the submissions received and the study team's responses were documented in detail in the Route Options Submissions Report (RTA, 2005). Copies of this report were made available to the public and are available on the project website.
- The RTA has conducted detailed site investigations as part of the process to select a preferred route and will undertake further investigations as part of the environmental assessment process. The project team has also met with numerous property owners to discuss their particular concerns.

3.3 Concept design

Predominant issues raised in the submissions include:

- Location of interchanges and the network of service roads.
- Cost of the upgrade.
- Community Alternative Route.
- Alternatives/modifications to the preferred route.

Main points of clarification with regard to concept design include:

- The RTA has investigated several options for the type and location of interchanges and the location of service roads associated with the preferred route. A leaflet describing these options was sent to the local community in October 2006 and they were displayed at the Woodburn community information centre (CIC) on Thursday 2 November 2007. The comments from this open day and returned feedback forms included with the leaflet formed part of the selection of the chosen options.
- Upgrading the Pacific Highway to meet the required design standards will involve significant costs.
- The RTA seriously investigated the Community Alternative Route and a detailed report is contained in Appendix A of the Preferred Route Report. On the basis of initial investigations a decision was made not to include the Community Alternative Route in any further evaluation of the short list of route options.
- All the suggested modifications to the preferred route alignment have been examined. In some cases further field investigations were undertaken and modifications to the alignment were made. Property owners who requested a route modification have been advised of the outcome of these investigations.

3.4 Hydrology

The predominant issue raised in the submissions included:

- Location of the preferred route in the Richmond River floodplain and localised flooding outside the floodplain.

The main point of clarification with regard to hydrology:

- Flood modelling and analysis indicates that it is possible to build a highway in the floodplain and in areas affected by localised flooding outside the floodplain provided that appropriate measures are incorporated in the road design.

3.5 Biodiversity

Predominant issues raised in the submissions include:

- Ecological impacts of the preferred route.

- Rigour and extent of ecological assessment undertaken for the preferred route.
- Lack of detail of mitigation measures.

Main points of clarification with regard to biodiversity include:

- The RTA is aware of the ecological sensitivity of the study area and has endeavoured to take this aspect into account in selecting the location of the preferred route. Further ecological studies are to be undertaken over a number of seasons and the results of all the ecological assessments will be incorporated in the environmental assessment of the preferred route. Appropriate mitigation measures would be designed and implemented to minimise impacts on flora and fauna.
- It is not feasible to undertake a detailed ecological assessment of the entire study area at the project planning stage. Broad ecological assessments undertaken prior to the selection of the preferred route are considered to be adequate. Their purpose was to identify the ecological constraints of the various route options. Modifications to the alignment of the preferred route have taken into account particular ecological issues and further investigations will be undertaken as part of the environmental assessment of the preferred route.

  In response to issues raised by DECC, Ballina Shire Council and the community an independent peer review of the Phase 1 and 2 Ecology Investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken. Further ecological investigations and a route selection review have also been undertaken to ensure the ecology input to the route options assessment is scientifically robust. The results of these reviews have been made available to the public.
- Specific mitigation measures will be developed during the concept design refinement and environmental assessment of the preferred route.

3.6 Non-indigenous heritage

The predominant issue raised in the submissions included:

- Impact on heritage items including houses and farms.

The main point of clarification with regard to non-indigenous heritage:

- The preferred route does not affect commonwealth or state listed heritage items but does affect some houses and properties which could be eligible for local heritage listing. Management measures would be discussed with individual property owners to reduce impacts as much as possible.

3.7 Property issues

Predominant issues raised in the submissions included:

- Loss of productive farm land and property values.
- Property acquisition and compensation process.

Main points of clarification with regard to property issues include:

- Individual discussions are being undertaken with all directly affected property owners to determine potential impacts on farm or business viability and to identify appropriate mitigation measures.
- Property required for the project would be acquired by the RTA in accordance with the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991*. Property owners who will live close to the new highway but whose property is not directly affected by the road will not receive financial compensation from the RTA. However, the RTA will attempt to mitigate impacts to adjacent properties, where possible, through appropriate landscaping and noise treatments.

3.8 Landuse, planning and zoning

The predominant issue raised in the submissions included:

- Current planning for the upgraded highway when there is no funding.

Main point of clarification with regard to planning:

- Planning for a major highway upgrade takes many years and there is a need to meet statutory requirements and seek approval of the project. Selecting a preferred route provides the community with more certainty about the location of proposed upgrade and enables the road corridor to be included on council environmental planning instruments.

3.9 Socio-economic impact

Predominant issues raised in the submissions included:

- Loss of agricultural land and the reduction in agricultural productivity.
- People previously unaffected by a major highway will be adversely affected.
- Existing tourist facilities and businesses on the Pacific Highway will be adversely affected.

Main points of clarification with regard to the socio-economic impact include:

- Various land holdings are affected by the preferred route including cane farms, plant nurseries and grazing properties. Selection of the preferred route provides a balance between all the social, environmental, engineering and economic constraints.
- The location of the preferred route will affect property owners not previously affected by a major highway. There will be some relief for residents currently living adjacent to the Pacific Highway and there

will be an overall improvement for the safety of road users and those people living near the highway.

- The RTA aims to limit the negative impacts on the local area's economy, community, environment and history. It is acknowledged that businesses on the highway reliant on passing trade are likely to be affected by a loss of trade. However, appropriate signage would help direct highway users to services and facilities located away from the new road.

3.10 Pollution and global warming

Predominant issues raised in the submissions included:

- Air quality and impacts on health and tank-water quality
- Global warming
- Road runoff entering wetlands

Main points of clarification with regard to pollution and global warming include:

- In this rural area it is unlikely that air pollutants associated with the upgrade of the Pacific Highway would have a noticeable impact on community health. Air quality investigations will be undertaken as part of the environmental assessment phase of the project and it is expected that air quality is unlikely to be outside national air quality goals, which have been set to protect the health and wellbeing of people from the impact of air pollutants. The topographic influences on the movement of air in the study area as a result of the upgrade would also be investigated as part of the environmental assessment.
- The RTA is committed to meet the challenge of reducing greenhouse gas emissions and the potential impacts of climate change. An assessment of the net effects of the project in terms of greenhouse gas emissions produced during construction and operation would be undertaken as part of the environmental assessment phase of the project.
- As part of the environmental assessment process potential water quality impacts will be assessed and appropriate mitigation measures will be incorporated into the concept design.

3.11 Noise

The predominant issue raised in the submissions included:

- Increased noise levels in currently quiet locations and mitigation measures.

The main point of clarification with regard to noise:

- Some people are likely to experience increased traffic noise levels, but the majority would have decreased noise levels. Noise abatement measures will be considered as part of the concept design

refinement and may include low noise pavements, construction of noise walls and architectural treatment of homes.

3.12 Visual impact

Predominant issues raised in the submissions included:

- Visual pollution arising from the impact on panoramic rural views.
- Interim and final vegetation treatments and timing.

Main points of clarification with regard to visual impact include:

- The design of the preferred route would be undertaken in accordance with the RTA's *Pacific Highway urban design framework – urban design guidelines for the SH10 from Hexham to Tweed Heads*.
- No landscape treatments would be undertaken until the project is approved and construction timing is known. Details of proposed landscape treatments would be determined in the environmental assessment phase of the project.

3.13 Transport

Predominant issues raised in the submissions include:

- Road safety and driver behaviour.
- Truck routes.
- Alternative freight transport options.

Main points of clarification with regard to transport include:

- One of the main aims of the upgrade is to improve road safety on the Pacific Highway. A high safety standard is achieved by separated carriageways, additional traffic capacity, high quality road pavements, wide shoulders, restricted access for pedestrians and fauna, and pavements generally above flood levels. These improved conditions should foster improved driver awareness and responsibility.
- The RTA has initiated a number of programs to improve heavy vehicle safety including Safe-T-Cam. Safe-T-Cam is an automated monitoring system that uses digital camera technology capable of reading the front number plate of heavy vehicles.
- Other complementary road routes to the west of the Pacific Highway including Summerland Way have been examined. These studies indicate that even if trucks used other routes including the New England Highway, traffic volumes on the Pacific Highway would not be substantially reduced.
- The NSW and Commonwealth governments are funding the Pacific Highway Upgrading Program and the RTA is responsible for implementing the NSW government's policy in respect of roads and road transport.

4 Overview of government and organisation issues

Submissions received from NSW State and Local government agencies and organisations have been identified separately to those received from residents, property owners and businesses. These issues and responses are included in detail in **Appendix E.** The sections following provide an outline of the issues raised. Submissions were received from the following agencies and organisations:

- Ballina Shire Council.
- Richmond Valley Shire Council.
- Department of Environment and Conservation.
- Department of Lands.
- Department of Primary Industries.
- Richmond River County Council.
- Jali Local Aboriginal Land Council.

4.1 Ballina Shire Council

Predominant issues raised in the submission included:

- Ecological impacts of the preferred route.
- Rigour and extent of ecological assessment undertaken for the preferred route.
- A robust review of ecological reports should be undertaken.
- Impacts on Council's services, in particular water and sewerage.
- Calibration of RTA flood modelling compared with Ballina Shire Council data.

Main points of clarification with regard to issues raised by Ballina Shire Council include:

- The RTA is aware of the ecological sensitivity of the study area and has endeavoured to take this aspect into account in selecting the location of the preferred route. Further ecological studies are to be undertaken over a number of seasons and the results of all the ecological assessments will be incorporated in the environmental assessment of the preferred route. Appropriate mitigation measures would be designed and implemented to minimise impacts on flora and fauna.
- It is not feasible to undertake a detailed ecological assessment of the entire study area at the project planning stage. Broad ecological assessments undertaken prior to the selection of the preferred route are considered to be adequate. Their purpose was to identify the ecological constraints of the various route options. Modifications to the alignment of the route have taken into account particular

ecological concerns and further investigations will be undertaken as part of the environmental assessment of the preferred route.

- An independent peer review of the Phase 1 and 2 Ecology Investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken. Further ecological investigations and a route selection review have also been undertaken to ensure the ecology input to the route options assessment is scientifically robust. The results of these reviews have been made available to the public.
- The location of services such as water, sewerage, power and telecommunications in relation to the preferred route have been identified as an input to the initial concept design. As the concept design of the preferred route is refined, the effect on all services will be the subject of further consultation and agreement with the services and utility providers.
- Flood work undertaken by Brown Consulting is accurate and comparable with Council's flood work. Flood modelling undertaken by Brown Consulting uses the same survey and roughness model used for the Wardell-Cabbage Tree Island Study and survey data used for the Ballina Flood Study.

4.2 Richmond Valley Shire Council

Predominant issues raised in the submission included:

- Concerned about the status of the old Pacific Highway once the new highway is opened.
- Concerned about impact on land under Council's care and control.
- Need for development of integrated regional transport plan to assess the impact of the preferred route on regional transport.

Main points of clarification with regard to issues raised by Richmond Valley Shire Council include:

- The remaining sections of the existing highway would become part of the local road network under the management of the local council. The RTA would discuss this with the relevant Councils prior to the handover.
- Individual negotiations would be undertaken with all directly affected property owners, including Council, to determine potential impacts on properties and to identify appropriate mitigation measures and/or compensation.
- The RTA, as an agency of the NSW Government, is required to carry out the relevant aspects of the Government's policy in relation to roads and transport. Improving the safety of the Pacific Highway is a top priority for the RTA.

  In doing this, the RTA must provide a solution that provides this improved safety, whilst at the same time integrating the design into the local environment, community, landscape and local road network.

4.3 Department of Environment and Climate Change

Predominant issues raised in the submission included:

- Impacts on the endangered emu population of the NSW North Coast Bioregion.
- Ecological impacts of the preferred route.
- Rigour and extent of ecological assessment undertaken for the preferred route.
- The preferred route has the potential to encroach on Broadwater National Park.
- Fauna crossings should be considered at sites within wildlife corridors.
- Impact of the preferred route on significant scarred trees and burial sites as well as general impacts on areas with a high potential to contain items of Aboriginal significance.
- Community noise burden methodology.

Main points of clarification with regard to issues raised by the Department of Environment and Conservation include:

- The RTA is aware of the endangered emu population of the NSW North Coast Bioregion and emus have been sited in Broadwater National Park. As part of the ongoing environmental investigations and the environmental assessment of the preferred route appropriate mitigation measures would be developed to minimise project impacts on emu populations within the study area
- The RTA is aware of the ecological sensitivity of the study area and has endeavoured to take this aspect into account in selecting the location of the preferred route. Further ecological studies are to be undertaken over a number of seasons and the results of all the ecological assessments will be incorporated in the environmental assessment of the preferred route. Appropriate mitigation measures would be designed and implemented to minimise impacts on flora and fauna.
- It is not feasible to undertake a detailed ecological assessment of the entire study area at the project planning stage. Broad ecological assessments undertaken prior to the selection of the preferred route are considered to be adequate. Their purpose was to identify the ecological constraints of the various route options. Modifications to the alignment of the preferred route have taken into account particular ecological concerns and further investigations will be undertaken as part of the environmental assessment of the preferred route. An independent peer review of the Phase 1 and 2 Ecology Investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken. Further ecological investigations and a route selection review have also been undertaken to ensure the ecology input to the route options assessment is scientifically robust. The results of these reviews have been made available to the public.

- The existing Pacific Highway currently bisects Broadwater National Park. The preferred route will follow this alignment, and will include a range of mitigation measures that would be developed to minimise the impact of the highway. The mitigation measures could include fauna fencing to minimise fauna access to the highway and human access to the national park, underpasses and/or overpasses to maintain fauna movements and better drainage to reduce the impact of road runoff in the national park. A meeting was held with DECC in December 2006 to discuss the impacts on Broadwater National Park and discuss mitigation measures and concept design features. This was followed by a meeting in September 2007 to further discuss these issues and the design responses to them. There will be ongoing consultation with DECC with regards to the impact on Broadwater National Park
- Mitigation measures, such as fauna crossings, will be developed as part of the concept design and environmental assessment for the preferred route.
- Aboriginal heritage assessments have identified the location of scarred trees and other sites of cultural, anthropological and archaeological significance to Aboriginal people. Further assessments will be undertaken when the concept design has been finalised and any necessary mitigation measures will be prepared in consultation with relevant stakeholders.
- The community noise burden approach to noise (during construction and operation) identified the potential 'noise change' for each of the route options. A noise assessment of the preferred route would be undertaken in accordance with DECC and RTA guidelines. Topographic effects on noise distribution would be examined as part of the noise assessment.

4.4 Department of Lands

Predominant issues raised in the submission included:

- Impacts on Crown Land assets including public roads and land below the mean high water mark of the Richmond River.
- The issue of Native Title should be addressed by the RTA in the acquisition of Crown lands.

Main points of clarification with regard to issues raised by the Department of Lands include:

- The RTA does not acquire Crown Road for its projects as Crown Roads are dedicated as public roads in terms of the *Roads Act 1993*. If any part of the Richmond River which is deemed to be Crown Land is required, it would be Compulsorily Acquired under the *Land Acquisition (Just Terms Compensation) Act 1991.*
- Areas of Crown land within the study area which were subject to a Native Title claim were identified. As a result, Option 1C was realigned to the west to avoid this Crown land parcel. No other areas

of Crown land subject to Native Title claim would be affected by the preferred route.

4.5 Department of Primary Industries

The predominant issue raised in the submission included:

- Compensatory habitat for potential destruction of aquatic habitat along the Richmond River and potential impacts on Tuckombil Canal.

The main point of clarification with regard to the issue raised by the Department of Primary Industries is:

- During the ecological assessment for the environment assessment process, contact will be maintained with DPI regarding any potential impacts on aquatic habitat along the Richmond River and Tuckombil Canal. Any requirement for compensatory habitat will be established and the RTA would arrange further meetings with DPI to reach an acceptable outcome.

4.6 Richmond River County Council

Predominant issues raised in the submission included:

- The preferred route will impact substantially on Richmond River County Council's business infrastructure and operational procedures.
- Concerned about the impact on flooding in the area.
- Close consultation should be maintained with the Richmond River County Council to mitigate adverse impacts on community flood mitigation systems.

Main points of clarification with regard to issues raised by Richmond River County Council include:

- The location of services such as water, sewerage, power and telecommunications in relation to the preferred route have been identified as an input to the initial concept design. As the concept design of the preferred route is refined, the effect on all services will be the subject of further consultation and agreement with the services and utility providers.
- Extensive flood modelling of the route options was undertaken as part of the route selection process. The flood modelling consisted of a two dimensional hydraulic model that covered the majority of the floodplain between Coraki and Ballina. This represents the most comprehensive and complete model that has yet been carried out for the Richmond River floodplain. This approach provided results that were of an order of accuracy sufficient to provide input to a comparative analysis between the initial route options to enable the preferred route to be identified.

  Where the preferred route lies in the floodplain the level of the road would be raised on an embankment to provide flood immunity.

Viaducts and culverts would be provided within the proposed embankments to convey floodwaters under the road.

- There will be close consultation with all agencies during the development of the concept design, environmental assessment and construction phases of this project.

4.7 Jali Local Aboriginal Land Council

Predominant issues raised in the submission included:

- Ecological impacts of the preferred route.
- RTA consultation practices.
- Preferred route has created division within the community with much anger directed at the Aboriginal community and the Jali Local Aboriginal Land Council.
- Impact of the preferred route on significant Aboriginal cultural heritage sites as well as general impacts on areas with a high potential to contain items of Aboriginal significance, many of which were not considered in the selection of the preferred route.

Main points of clarification with regard to issues raised by the Jali Local Aboriginal Land Council include:

- The RTA is aware of the ecological sensitivity of the study area and has endeavoured to take this aspect into account in selecting the location of the preferred route. Further ecological studies are to be undertaken over a number of seasons and the results of all the ecological assessments will be incorporated in the environmental assessment of the preferred route. Appropriate mitigation measures would be designed and implemented to minimise impacts on flora and fauna. An independent peer review of the Phase 1 and 2 Ecology Investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken. Further ecological investigations and a route selection review have also been undertaken to ensure the ecology input to the route options assessment is scientifically robust. The results of these reviews have been made available to the public.
- The consultation process undertaken was consistent with all the Pacific Highway upgrade projects to enable the community to become informed and to inform the project team of their views and opinions. The community liaison group (CLG) was formed to enable community representatives to have input into the project and that the project team could draw on the widest possible range of community interests and views. The CLG included representatives of local residents, property owners, local businesses and those concerned about the natural environment, flooding and sugar cane and a range of other issues.
- The project team has undertaken a rigorous and transparent route selection process with considerable community input in order to select the preferred route. Affected landowners have had the

opportunity to meet with the project team members to discuss individual property concerns. The consultation process allows for all of the community to present their views, concerns and issues to the project team for consideration. The RTA does not set out to divide the community and would welcome any suggestions to improve the consultation process.

- Investigations to date by Jacqueline Collins (Adise Pty Ltd) and consultation with traditional owners in the study area have endeavoured to identify the location of sacred sites and areas of importance. The route selection process took into account many different factors including the impact on Aboriginal cultural heritage. There will be ongoing contact with Aboriginal people and with DECC to ensure that appropriate management measures are undertaken to ensure that sites and areas of importance are protected and conserved.

5 Next steps

Following the display of the concept design, the RTA will consider issues raised in any comments received and re-examine the design. Once this process is finalised, the relevant local council will be approached to have the corridor formally reserved in its local environmental plan.

The boundaries of the corridor will be based on the final concept design. Detailed environmental assessment will commence and formal planning approval sought closer to construction. Timing of construction will depend on funding availability. Once this is determined, the detailed environmental assessment will commence and planning approval will be sought to allow construction to commence.

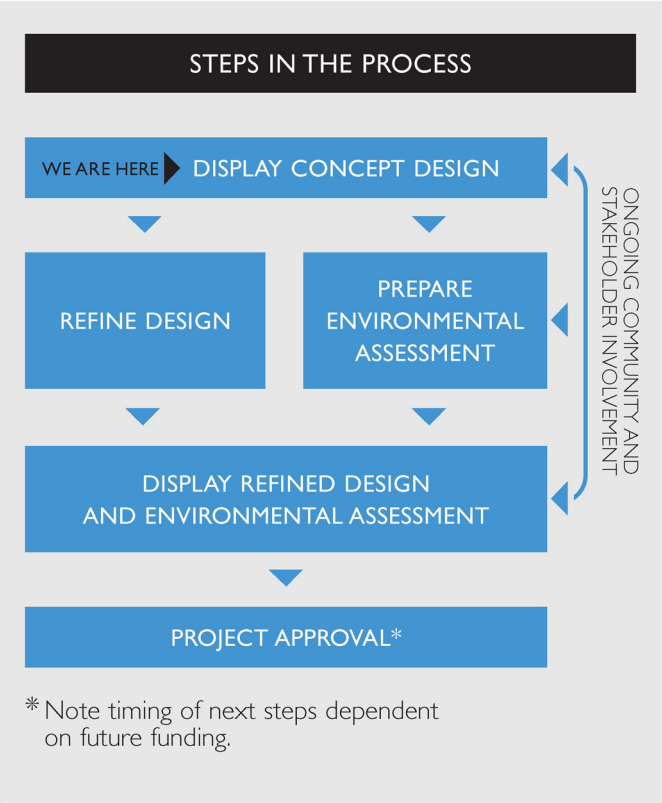

Figure 2 The approval process

Appendix A

Preferred route display advertisement

Appendix B

Preferred route display brochure

Appendix C

Submissions identification

The table below provides a summary of the issues raised in each submission where the author of the submission did not request confidentiality. This can be used by authors of submissions to cross-reference as to where the issues raised in their submissions have been addressed.

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
Bayley	Mark	538	Social Impact	92
			Habitat - Wildlife Impact	60
			Traffic Issue	117
			Property Value	80
			Safety Issue	19
			Environment Concerns	53
Bell	Graeme	92	Flooding/Drainage - Issue	46
			Social Impact	89
			Environment Concerns	53
			Habitat - Wildlife Impact	53
			Property Compensation	78
			Alternate/Modified Route Suggested	41
			Access to Property	25
Bell	Stephen	250	Noise - Impact	105
			Alternate/Modified Route Suggested	22
			Safety Issue	111
			Safety Issue	112
Bell-Tindley	Lily	1456	Environment Concerns	53
			Existing Corridor - Utilise	77
Byrne	Daniel	47	Alternate/Modified Route Suggested	41
Byrne	Peter	218	Flooding/Drainage - Issue	43
Byrne	Peter	218	Environment Concerns	54
			Noise - Impact	105
			Social Impact	90
			Historical Significance Issue	66
			Agricultural Land - Impact	86
			Visual Impact Issue	109
			Non Indigenous Heritage Issue	69
			Water Pollution - Impact	104

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
Clement	Debbie	1329	Existing Corridor - Utilise	42
			Safety Issue	117
			Route Selection Process	7
			Social Impact	92
			Outside the original study area	40
			Noise - Impact	105
			Environment Concerns	49
			Property Impact	92
			Use rail for freight transport	117
			Location of preferred route - mist/fog/sun	33
			Property Value	80
			Emotional issue	85
			Supports Summerland Way	117
			Visual Impact Issue	109
			Air Pollution - Impact	100
Coghill	Annette	11	Alternate/Modified Route Suggested	41
Davison	Angela	846	Construction - Cost	70
			Environment Concerns	53
			Blackwall Range - Impact	52
			Alternate/Modified Route Suggested	41
			Social Impact	92
			RTA not listening to community	5
Davison	Wendy	1452	Noise - Impact	105
			Safety Issue	111
			Use rail for freight transport	117
			Traffic Issue	118
			Use rail for freight transport	117
			Emotional issue	88
			Alternate/Modified Route Suggested	77
			Social Impact	92
			Air Pollution - Impact	100
Davison	Wendy	1452	Agricultural Land - Impact	86

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			Business - Impact	95
			Environment Concerns	53
Easton	MR	916	Environment Concerns	47
			Route Selection Process	16
			Route Selection Process	117
			Environment Concerns	53
			Question Validity of Studies	62
			General Dissatisfaction	10
			Geotechnical Comment	31
			Business - Impact	95
			General Pollution Impact	100
			Habitat - Wildlife Impact	53
			Habitat - Wildlife Impact	60
			Question Validity of Studies	62
			Notification of Project - Issue	11
			Time frame for assessment too short	76
			Inaccurate Data Used	16
			Safety Issue	113
			RTA - Community Relations	15
			Inaccurate Data Used	62
			Property Value	80
			Access to Property	25
			Flooding/Drainage - Issue	43
			Environment Concerns	48
			Construction - Cost	28
			RTA not listening to community	10
			Environment Concerns	62
			CLG Issues	6
			CLG Issues	4
Environmental Training and Employment Inc.		1453	Habitat - Wildlife Impact	60
			Social Impact	92
			Time frame for assessment too short	76
			Use New England Highway	117

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			Environment Concerns	53
			Existing Corridor - Utilise	30
Flanagan	Daniel	1446	Location of preferred route - mist/fog/sun	33
			Residential Area - Impact	110
			Noise - Impact	105
			Alternate/Modified Route Suggested	41
Fowler	RL (Bob & Evelyne)	906	General Pollution Impact	100
			Social Impact	92
			Alternate/Modified Route Suggested	41
			Health - Impact	85
			Noise - Impact	105
Gittoes	Mark	177	General Dissatisfaction	18
			Property Value	78
			Alternate/Modified Route Suggested	41
			Flooding/Drainage - Issue	43
			Interchanges - Town/Motorway Access	22
			Agricultural Land - Impact	86
			Property Compensation	79
Graham	Mark	458	Route Selection Process	75
			Route Length	103
			Environment Concerns	62
			Value Management Workshop	7
			Unhappy with route options submission process	10
			RTA - Community Relations	14
			RTA not listening to community	7
Graham	Robert	917	Outside the original study area	40
			Noise - Impact	105
			Value Management Workshop	7
			Air Pollution - Impact	100
			RTA not listening to community	1

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			Social Impact	92
			Environment Concerns	49
			Environment Concerns	53
			Route Length	103
			Question Validity of Studies	51
			Construction - Cost	27
			Route Selection Process	2
Grant	R	1442	Inaccurate Data Used	62
			Question Validity of Studies	53
			Global Warming	103
			Habitat - Wildlife Impact	53
Gray	Martin	181	Traffic Issue	115
			Route Selection Process	77
			Environment Concerns	52
			Tourism Impact	95
			RTA - Community Relations	5
			Environment Concerns	53
Gregurio	D	1440	Global Warming	103
			Habitat - Wildlife Impact	53
			Question Validity of Studies	53
			Inaccurate Data Used	62
Hammond	Keith	592	Alternate/Modified Route Suggested	41
Hammond	Eli	1439	Global Warming	103
			Inaccurate Data Used	62
			Habitat - Wildlife Impact	53
			Question Validity of Studies	53
			Use rail for freight transport	117
Jukes	Brian	1437	Interchanges - Town/Motorway Access	23
Kay	Jennifer	420	Time frame for assessment too long	19
Kelly	Kerry	472	Environment Concerns	53
			Traffic Issue	116
			Social Impact	8
			Residential Area - Impact	92

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			Noise - Impact	105
			Global Warming	103
			Supports Summerland Way	71
			Air Pollution - Impact	100
			RTA - Community Relations	14
Keys	Ralph & Sue	303	RTA not listening to community	70
			Traffic Issue	116
			Use rail for freight transport	117
			Outside the original study area	40
			Social Impact	92
			Newly Affected	40
			Existing Corridor - Utilise	30
			Alternate/Modified Route Suggested	41
Knox	Tracey	577	Interchanges - Town/Motorway Access	22
			Business - Impact	95
			Noise - Impact	105
Law	Dallas	46	Location of preferred route - mist/fog/sun	32
			Social Impact	90
			RTA - Community Relations	65
			Alternate/Modified Route Suggested	41
			Habitat - Wildlife Impact	52
			Access to Property	25
Law	George	86	Environment Concerns	53
			Health - Impact	100
			Emotional issue	88
			Safety Issue	111
			Global Warming	102
			Air Pollution - Impact	100
			Geotechnical Comment	31
			Social Impact	63
			Water Pollution - Impact	104
			Flooding/Drainage - Issue	43

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			Noise - Impact	105
			Disappointed with Routes Selected	42
			Alternate/Modified Route Suggested	71
			Time frame for assessment too short	76
			Property Impact	79
			Visual Impact Issue	109
			Travel Time Issue	119
			Construction - Cost	26
Law	Margaret	173	RTA - Community Relations	3
			Environment Concerns	53
			CLG Issues	5
			CLG Issues	2
			Historical Significance Issue	65
Lickiss	Arthur	15	Disappointed with Routes Selected	96
			Disappointed with Routes Selected	97
			Safety Issue	24
			Flooding/Drainage - Issue	43
			Disappointed with Routes Selected	37
			Alternate/Modified Route Suggested	37
			Geotechnical Comment	31
			RTA not listening to community	37
			Agricultural Land - Impact	86
Limbert	Timothy	262	Road material offered for use	34
			Access to Property	25
Lock	WL & MJ	282	Property Compensation	78
			Flooding/Drainage - Issue	43
			Agricultural Land - Impact	86
Lumley	Warren	275	Agricultural Land - Impact	86
			Social Impact	92
			Timing of the project	19

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
Lumley	Warren	275	Emotional issue	89
Lymburner	Julian & Stephanie	327	Environment Concerns	53
			CLG Issues	5
			Noise - Impact	105
			Newly Affected	8
			Residential Area - Impact	108
			CLG Issues	9
			Display/Brochure Material Accuracy and Clarity	39
			Alternate/Modified Route Suggested	37
			Habitat - Wildlife Impact	49
Matthes	Jack	364	Routes don't reflect CLG discussions	37
			Flooding/Drainage - Issue	43
			Route Selection Process	14
			Route Selection Process	37
			RTA - Community Relations	3
			Alternate/Modified Route Suggested	37
			Alternate/Modified Route Suggested	5
			Agricultural Land - Impact	86
			CLG Issues	37
			General Dissatisfaction	37
			Social Impact	92
			Geotechnical Comment	31
			Access Across Highway	25
McAndrew	Col	931	RTA - Community Relations	15
			RTA - Council co-operation	10
			Question Validity of Studies	62
McDonald	David	49	Alternate/Modified Route Suggested	41
Melino	Michael	1412	Air Pollution - Impact	100
			Construction - Cost	27
			Environment Concerns	49

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			RTA - Community Relations	7
			Environment Concerns	53
			Value Management Workshop	7
			Social Impact	92
			RTA not listening to community	1
			RTA - Community Relations	10
			Route Length	103
			RTA not listening to community	3
			Geotechnical Comment	29
			Noise - Impact	105
			General Dissatisfaction	13
			Outside the original study area	40
			Route Selection Process	1
Monti	Allan	322	CLG Issues	5
			Social Impact	92
			Agricultural Land - Impact	79
			Habitat - Wildlife Impact	53
			Route Length	103
Monti	Trevor	323	RTA - Community Relations	5
			Alternate/Modified Route Suggested	37
			Agricultural Land - Impact	79
			General Dissatisfaction	37
			Flooding/Drainage - Issue	43
			Noise - Impact	107
			CLG Issues	8
			Habitat - Wildlife Impact	49
Monti	Phillip	324	Noise - Impact	107
			Access Across Highway	25
			Social Impact	90
			Flooding/Drainage - Issue	44
Monti	Christopher	966	Social Impact	90
			Access to Property	25
			Habitat - Wildlife Impact	53
			Access Across Highway	25

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			Route Selection Process	70
Moore	Peter	519	Route Selection Process	2
			Alternate/Modified Route Suggested	41
Nott	Tim	1450	General Dissatisfaction	84
			Environment Concerns	53
			Construction - Cost	29
			Question Validity of Studies	21
NSW Nature Conservation Council		940	Value Management Workshop	7
			Environment Concerns	53
			Environment Concerns	51
			Environment Concerns	49
			Construction - Cost	27
			Noise - Impact	105
			Route Selection Process	7
			Air Pollution - Impact	100
			Outside the original study area	40
			Route Length	103
NSW Sugar Milling Co-Operative Ltd		199	Flooding/Drainage - Issue	43
			Construction - Impact	36
			Disappointed with Routes Selected	37
			Residential Area - Impact	22
			Alternate/Modified Route Suggested	117
			Alternate/Modified Route Suggested	37
			Access to Towns	22
Nutt	Rik	432	Alternate/Modified Route Suggested	41
			Broadwater National Park	61
			CLG Issues	5
			Service Roads	22
			Proposed Development	36
			Environment Concerns	53

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
Owers	Garry & Angela	471	Alternate/Modified Route Suggested	77
			Air Pollution - Impact	100
			Route Selection Process	75
			Environment Concerns	63
			Social Impact	92
			Question Validity of Studies	62
			Route Length	103
			Geotechnical Comment	31
			Access to Towns	22
			Habitat - Wildlife Impact	53
			Disappointed with Routes Selected	3
			Disappointed with Routes Selected	73
			Flooding/Drainage - Issue	43
			Noise - Impact	105
Pankhurst	Don & Sandra	407	Interchanges - Town/Motorway Access	22
Peaston	Anne	1425	Tourism Impact	95
			Environment Concerns	53
Plenkovich	Bartholomew (Bert)	22	Property Impact	82
			Alternate/Modified Route Suggested	41
			CLG Issues	38
			Route Selection Process	37
			Flooding/Drainage - Issue	43
			Flooding/Drainage - Issue	45
			Property Acquisition Process	83
			Broadwater - Impact	41
			Service Roads	22
Regan	Jason	118	Farm/property viability	79
			General Dissatisfaction	41
			Disappointed with Routes Selected	97
			Alternate/Modified Route Suggested	41

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
Rijs	Cassandra	1441	Habitat - Wildlife Impact	53
			Inaccurate Data Used	62
			Question Validity of Studies	53
			Global Warming	103
Roberts	Christine	586	Noise - Impact	105
			Value Management Workshop	27
			Air Pollution - Impact	100
			Construction - Cost	27
			Environment Concerns	49
			Disappointed with Routes Selected	1
			Route Length	103
			Global Warming	103
Rumsby	Ken	486	Environment Concerns	52
Russell	Kathyrn	1424	Habitat - Wildlife Impact	53
			Environment Concerns	53
			Tourism Impact	95
Seznec	Gwenaelle	536	Alternate/Modified Route Suggested	77
			Property Compensation	80
			Property Compensation	81
			Tourism Impact	95
			Inaccurate Data Used	62
			Water Pollution - Impact	104
			RTA - Community Relations	12
			General Dissatisfaction	20
			Geotechnical Comment	31
			Service Roads	35
			Agricultural Land - Impact	87
			Social Impact	92
			Environment Concerns	53
			Environment Concerns	48
			Environment Concerns	47
			Environment Concerns	52
			Air Pollution - Impact	100
			Access to Towns	25

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			Disappointed with Routes Selected	10
			Disappointed with Routes Selected	74
			Disappointed with Routes Selected	3
			Habitat - Wildlife Impact	59
			Flooding/Drainage - Issue	44
Shepherd	Sandra	242	Air Pollution - Impact	100
			Noise - Impact	106
			Question Validity of Studies	62
			General Dissatisfaction	87
			CLG Issues	6
			Property Compensation	80
			Social Impact	91
Small	Peter	219	Disappointed with Routes Selected	72
Stevenson	Alan	3	Route Selection Process	64
			General Dissatisfaction	71
			Social Impact	92
			Environment Concerns	10
			Route Length	103
			Habitat - Wildlife Impact	53
Sunshine Electricity Management P/L		1448	Proposed Development	36
Tall	Suzanne	993	Time frame for assessment too long	89
			Newly Affected	40
			Property Acquisition Process	78
			Social Impact	92
			Supports Summerland Way	71
			Property Value	78
Tall	Benjamin	1378	Supports Summerland Way	71
			Property Value	78
			Newly Affected	40
			Time frame for assessment too long	76

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
Threlfo	Lorna	163	Flooding/Drainage - Issue	43
			Access Across Highway	25
			Flooding/Drainage - Issue	44
			Route Selection Process	70
			RTA not listening to community	5
			Social Impact	90
			Property Impact	79
Tindley	Sarah	618	Non Indigenous Heritage Issue	68
			Use rail for freight transport	117
			Noise - Impact	105
			Environment Concerns	53
			Social Impact	92
			Property Compensation	80
			Habitat - Wildlife Impact	60
			Disappointed with Routes Selected	2
Vale	Edward	65	Geotechnical Comment	31
			Access to Property	25
			Flooding/Drainage - Issue	43
			Asbestos Issue	101
Vass	Lorraine	473	Habitat - Wildlife Impact	53
			Value Management Workshop	1
			Disappointed with Routes Selected	7
			Environment Concerns	50
			Environment Concerns	49
			Question Validity of Studies	62
			Habitat - Wildlife Impact	58
Walke	Emma	945	Social Impact	92
			Social Impact	93
			Safety Issue	114
			RTA - Community Relations	99
			Access to Towns	25
			General Dissatisfaction	10
			Environment Concerns	57
			CLG Issues	6

Surname	First Name	Stakeholder ID	Issue Summary	Response ID
			CLG Issues	5
			Disappointed with Routes Selected	77
			Environment Concerns	53
			Noise - Impact	105
Ward	Michael & Kathryne	877	Air Pollution - Impact	100
			Construction - Cost	27
			Route Selection Process	2
			Disappointed with Routes Selected	98
			Environment Concerns	55
			Outside the original study area	2
			Noise - Impact	105
			Environment Concerns	56
			Environment Concerns	49
Whiteman	Suzanne	1451	Environment Concerns	53
			Social Impact	94
Wilson-McAndrew	Nancy	929	Notification of Project - Issue	17
			RTA - Community Relations	15
			RTA - Council co-operation	10
			Question Validity of Studies	62
Witchard	Lorraine	164	General Dissatisfaction	17
Woodburn to Broadwater Community Group		1454	Alternate/Modified Route Suggested	41

Appendix D

Community submissions and responses

This Appendix provides a summary of the issues raised in submissions from the community and responses prepared by the project team.

1 Consultation process 1

2 Route selection process 10

3 Concept design 12

4 Hydrology 20

5 Biodiversity 22

6 Indigenous heritage 31

7 Non-Indigenous heritage 32

8 Property issues 34

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10 Socio-economic impact 38

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12 Noise 46

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14 Transport 49

1 Consultation process

Response No.	Consultation process issue	Response
1	Route 2C was unanimously opposed; other route options presented to the public during consultation had greater public support than Route 2C.	The Route Options Submissions Report did not identify the details of public support indicated in written submissions for any of the route options. Appendix E of the Submissions Report provided details only of community preferences contained in 383 Feedback Forms. With regard to the route options, 173 of the feedback forms (45%) did not indicate a preference for any option, therefore, it is not correct to state that route option 2C was unanimously opposed.
2	Modified Option 2C was not discussed with the public or the CLG and no information was provided on this option until the preferred route was announced.	As a result of the community submissions, the value management workshop (VMW) and the technical studies, Option 2C was examined to determine if it could be realigned to reduce the ecological impact. Option 2C was subsequently realigned outside the Wardell Heath/Wetlands which reduced the overall impact on native vegetation and habitats. As discussed in the Preferred Route Report Modified Option 2C was compared to the other Short Listed Options and provided the best balance between all the impacts and constraints.
3	Issues raised by the community will be disregarded by the RTA. The RTA takes no notice of the community submissions.	The RTA has welcomed issues raised by the community since the commencement of the Woodburn to Ballina upgrade project. By looking through the issues that have been included in this report it is obvious that all issues raised in community submissions have been reviewed. As a result of these submissions, a number of modifications have been made to the alignment of the proposed upgrade. All issues raised by the community have been, and will continue to be, treated with respect and will be used to assist in locating and designing the upgraded highway taking into consideration

Response No.	Consultation process issue	Response
		engineering, environmental, financial and social matters.
4	CLG members were gagged by confidentiality and could not inform the public. They were forbidden to liaise, thus effectively precluding any meaningful public input.	CLG members were never prevented from talking to the larger community about the study. The members were allowed to relay most information they received or heard at CLG meetings back to the community. The RTA certainly expected that CLG members would provide two-way feedback with their communities and the study team. There was some confidential information, relating to the long list of route options, provided to the CLG on a few occasions prior to the Route Options Display. This was subsequently made public with the release of the Route Options Display and the release of the Route Options Development Report. These details were asked to be kept confidential, in the most part because the widespread release of this information would have unnecessarily upset members of the broader community. Since the Route Options Display there has been no confidential information presented to the CLG. Notes from all the CLG meetings have been publicly available on the RTA's project web site http://www.woodburntoballina.com.au/
5	The entire CLG process was a farce orchestrated by the RTA and carried out by Hyder. The CLG was misled from start to finish and no notice was taken of any of their ideas, with the exception of small group of vocal members. The decision on the preferred route was made before the CLG ever met and was only a cover up to make the RTA look good in the eyes of the community. The process has divided the community.	The CLG was formed to enable community representatives to have input into the project and that the project team could draw on the widest possible range of community interests and views. The CLG included representatives of local residents, property owners, local businesses and those concerned about the natural environment, flooding and sugar cane and a range of other issues. The RTA and Hyder acknowledge the time and effort that CLG members contributed over many months and this involvement was very much appreciated by the project team.

Response No.	Consultation process issue	Response
		Throughout the route selection process and the announcement of the preferred route there have been assertions that the preferred route had been decided before the study process commenced. The Route Options Development Report and the Preferred Route Report fully describe the route selection process and demonstrate that views and contributions of the CLG were considered at all times. That the project team did not always agree with the requests of CLG members does not mean that their contributions to the study were ignored. As demonstrated with the Community Alternative route proposed by some CLG members, additional studies were undertaken and the reasons for not adopting this were included in the Preferred Route Report.
6	There seems to be a lack of real ability in the RTA's behalf to communicate effectively and find some reasoning through the process.	The RTA endeavours to provide effective community consultation throughout the process and would welcome any suggestions to improve the consultation process.
7	The Community Liaison Group was supposed to be set up to give the RTA and its consultants a view to what the community thinks. However the CLG group was a biased group where the overwhelming majority were residents living adjacent to the existing highway or from groups with other vested interests. The community were not asked by any CLG member to give any input as to what route was preferred. No group of that size can speak completely for the people who may lose their properties, or whose lands will be cut in half by the road.	Community consultation is part of the decision making process. The community consultation for the project included a broad range of activities, and was not limited just to the CLG process. These activities include, but are not limited to: the formation of the CLG which attempts to provide a representative group across the study area; the formation of single issue focus groups; provision of a (toll free) Project Information Line; provision of project website; public displays of the route options and the preferred route; and, discussions with individuals and stakeholders.
8	There is no faith in a process which determines a route that was not the preferred route in the Value Management Workshop held in Ballina in July 2005.	The preferred route was not determined at the value management workshop (VMW) The VMW is just one part of the process of selecting a preferred route and it's purpose was to:

Response No.	Consultation process issue	Response
	.	▪ Clarify how the shortlist of corridor options were determined. ▪ Review the shortlisted options using the specialist assessments undertaken. ▪ Canvass the issues and concerns of stakeholders. ▪ Examine the corridor options developed and recommend a preferred direction, if appropriate to do so, to assist in progressing the project to the next stage of development. ▪ Develop an action plan to progress the study. Participants at the VMW agreed on the preferred options in Section 1 and Section 3 of the study area. In Section 2, the participants agreed that options 2C, 2D, 2E and 2F had potential subject to resolving various issues which were noted in the VMW Report.
9	The announcement by the RTA of 2C as the preferred route in the Woodburn to Ballina Upgrade directly contravenes the RTA's publicly stated framework for determining preferred routes.	The process for selecting the preferred route is described in the Preferred Route Report. The selection of the preferred route included input from the community during the Route Options Display, the results of the VMW, input from the technical reports prepared for the route options and the assessment of the route options against the assessment criteria. All these inputs were used to determine the performance of the route options against four guiding principles.
10	There is a perception that this decision is being rushed through and it is important that this not be done. The RTA initial timeline had route options for public discussion occurring September 2005 at the earliest, and final selection occurring in 2006. The whole process has been rushed through, 12 months ahead of schedule, despite concerns over RTA study flaws, the potential for major problems and the absence of public consultation.	The selection of a preferred route option for the Woodburn to Ballina section of the Pacific Highway was not rushed. Preliminary studies commenced in 2004 and during May/June 2005 shortlisted options were identified for community discussion. In November 2005 a preferred route was selected. A preferred route concept design has now been made public and the required environmental assessment will be undertaken. Finalisation of this planning stage will take some years.

Response No.	Consultation process issue	Response
		While construction works are not likely to occur within the next few years, it is important that an approved route alignment is incorporated in the Local Environmental Plans of Ballina and Richmond Valley Councils as soon as possible. The public knowledge of the road alignment will provide residents, the community, businesses and government agencies more certainty when making decisions to renovate or build homes and invest in businesses.
11	RTA should provide professional counselling to community members who need it.	The RTA understands the distress caused by the announcement of the preferred route, particularly on property owners directly or indirectly affected by the route. The need for counselling or other support is seen to be a solution that needs to be sought by an individual, based on their needs and is not generally provided by the RTA.
12	The CLG meetings would have been more beneficial to have had an independent facilitator to allow CLG members to speak more freely and openly.	The records of all the CLG meetings reflect the free and open discussions that occurred at each meeting. Members of the CLG were able to provide presentations at the meetings if they wished and their opinions were respected by the facilitator. The facilitator of these meetings was selected for her extensive experience in conducting community meetings. She provided opportunities for all CLG members to speak freely and encouraged those who were more anxious about stating their concerns or opinions in a public forum. The RTA has provided independent facilitators in the past, where the community has requested it.
13	There are apparent flaws in the assessment of the route options which negates the legitimacy of the preferred route. This has been identified by the Parliamentary Inquiry Interim Report (December 2005) and has been raised by various	Everyone is entitled to express their opinions about all aspects of a study whether during the preparation of a study such as the Woodburn to Ballina upgrade or at the Parliamentary Inquiry. Where some people have expressed concerns about some of the studies

Response No.	Consultation process issue	Response
	Government agencies, including DECC, Ballina Shire Council and Lismore City Council.	the RTA has required a review of the documentation and in some instances has requested the engagement of an independent peer reviewer. All concerns raised about the content and conclusions of specialist studies have been investigated. The findings of this investigation are that for preliminary specialist investigations, a reasonable level of investigation has been undertaken to select a preferred route. While a preferred route has been announced, it is expected that preparation of the concept design and any requirements for the environmental assessment of this project will need further investigation and will refine the location and design of the route.
14	The RTA stands out amongst government agencies in the fact that there is absolutely no complaint management system or dispute resolution scheme. This to me confirms the fact that the RTA is really not interested in any feedback sent, unless it supports their views.	The RTA provides the same opportunities as any other government agency for members of the community to complain about aspects of project development and resolve differences of opinion. The RTA does not believe that a dispute resolution scheme is required for project development purposes. All issues raised by the community have been and will continue to be treated with respect and will be used to assist in locating and designing the upgraded highway taking into consideration engineering, environmental, financial and social matters The RTA's project manager very carefully explained at the beginning of this study that while the community will be involved in the study process, at the end of the day it is the Minister for Roads who has to make the final decision.
15	This is not a highway upgrade, but as we have heard recently, it will be a 6 lane expressway which will be funded by a toll.	No decision has been made as to whether this or any section of the Pacific Highway will be a toll road. The upgrade of the Pacific Highway will initially involve construction of a four-lane highway in accordance with the Pacific Highway design standards.

Response No.	Consultation process issue	Response
		Provision has been made in the design for a future widening to six lanes, when needed to meet future traffic demands. Project approval will be sought for the ultimate road design (six lanes) to set aside the entire area of land required for the highway rather than returning on different occasions to negotiate additional property acquisitions.
16	The NSW Roads and Traffic Authority (RTA) project management staff and consultants (Hyder Consulting and Geolyse Consultants) have acted in a deceptive and deceitful fashion on numerous occasions in the route selection process.	The RTA does not agree with sentiments expressed in this submission. The RTA has made technical reports available to the public and has appreciated constructive comments received during the course of the project. Where there have been areas of dispute and disagreement the RTA has sought to resolve the issues although not always to the satisfaction of those concerned.
17	The route option development and consultation process undertaken by the RTA is unsatisfactory. This process cannot in any way be regarded as a legitimate expression of adequate research, real public consultation or government transparency. The project team are obviously unable to deal with the public in a professional manner. The public find it difficult to accept any of the decisions and methods used in the selection process.	The RTA has followed established procedures in the route options development process and the selection of the preferred route in informing and consulting with the community and other stakeholders. The study process commenced in 2004 with three Community Information Sessions and the establishment of a Community Liaison Group (CLG) which continued to meet through 2005. Focus Groups were established in 2005 to address sugar cane, flooding, ecology and Aboriginal areas of interest. Community Updates were circulated in the study area and the Freecall Information Line was advertised. A Community Information Centre was established at Woodburn and it was staffed at nominated times. Various meetings involving CLG representatives were held including the Community Mapping Workshop and the VMW and members of the project team attended meetings with Lismore, Richmond Valley and Ballina Councils, community meetings and met with many property owners. Every opportunity has been provided for community members to become involved in the consultation process.
18	The public were not allowed access to the process prior to the	Various specialist documents have been made available during the

Response No.	Consultation process issue	Response
	selection of the preferred options and have thus been excluded from any influence in the selection of those options.	study period and it is considered that sufficient time has been provided at this stage of the study for people to become more informed about various environmental, geotechnical, hydrological, engineering and heritage aspects of the project. The process for selecting the preferred route is described in the Preferred Route Report. The selection of the preferred route included: ▪ input from the community during the Route Options Display including submissions and interviews with landowners ▪ the results of the VMW ▪ input from the technical reports prepared for the route options ▪ the assessment of the route options against the assessment criteria. All these inputs were used to determine the performance of the route options against four guiding principles to determine the preferred route.
19	I was not notified by the RTA of their decision on the Highway affecting my residence. A phone call was made and a letter sent to the wrong person concerning my property. The lack of care towards the affected community in relation to incorrect mail addresses concerning the preferred route impacts has raised serious doubts over the professionalism of the RTA.	There have been some instances of mail not having the correct address and being sent to other property owners. Hyder has issued letters of apology for these mistakes.
20	We have sacrificed many hours of our time and allowed investigations to occur on our property throughout the project and we feel that we will be severely affected financially by the preferred route.	The RTA has certainly appreciated the willingness of many property owners in allowing technical specialists access to their properties despite owners being adversely affected by the location of the preferred route. Opportunities to investigate particular areas where

Response No.	Consultation process issue	Response
	To reduce trauma and shock on property owners the RTA needs to provide fair consultation and solid compensation.	additional information was required have assisted in identifying opportunities and constraints relating to the preferred route in greater detail. At the time of the announcement of the preferred route the RTA has endeavoured to assist all property owners and concerned community members to understand the implications of property acquisition, the project time frame and potential environmental and social impacts. In settling property matters there will be ongoing consultation with property owners to agree on compensation and meet legal requirements.

2 Route selection process

Response No.	Route selection process issue	Response
21	The road needs to be upgraded immediately to ensure that the death toll does not rise further.	The RTA is aware of the need to upgrade the highway. The timeframe for this project has been undertaken to provide the best balance between undertaking a robust process, minimising the strong impact this project has on the local community and upgrading the safety of the road as quickly as possible.
22	I am appalled that the RTA was able to summarise the key issues of 214 submissions and 383 feedback forms in less than 2 pages in its Preferred Route Report, but uses 15 pages to reiterate their processes, objectives, methods etc,. Multiple other issues were raised in submissions, but are not included as key issues in the Preferred Route Report.	The purpose of the Preferred Route Report was to provide details of the preferred route. It summarises some background information including the route options development process and the submissions received on the route options. Details of all the submissions received and the study team's responses were documented in detail in the Route Options Submissions Report (RTA, 2005) which was referenced in the Preferred Route Report. Copies of the Route Options Submissions Report were made available to the public at the public display of route options for those people wishing to see the issues raised and the responses provided and is available on the project website.
23	Have any of the people making these decisions on the road routes even been to the site and know anything about appropriate value tradeoffs, mitigation and compensation?	Yes. The RTA has conducted extensive site investigations as part of the process to select a preferred route. This included investigations into the potential ecological impacts, socio-economic impacts, geotechnical conditions, exact property boundary locations, background noise levels, traffic volumes and impacts on individual property owners. Also during the preferred route display, affected landowners have had the opportunity to meet with the study team members to discuss individual property concerns.
24	How was the preferred route selected?	The process used to select the preferred route is detailed in the Preferred Route Report.

Response No.	Route selection process issue	Response
		The selection of a preferred route is complex with many competing constraints which need to be identified and assessed. These constraints are broadly grouped into social, economic, environmental and engineering. The preferred route was selected using an assessment of the relative importance of the constraints and the identification of the route option that provides the best balance across them.

3 Concept design

Response No.	Concept design issue	Response
25	A number of submissions have been received regarding the location of interchanges and the network of service roads including: ▪ Using Rileys Hill Road as a service road is not acceptable and there is concern about the increase in traffic along this road if it was made the service road ▪ From a sugar industry point of view a full or half diamond interchange at Broadwater is not necessary ▪ There should be a local road provided to join the proposed Wardell interchange and Whytes Lane. ▪ Two half access interchanges should be provided at Woodburn. One south of Woodburn using the existing bridge over Tuckombil Canal, the other east of Woodburn on the Evans Head Road. ▪ Using Pimlico Road as a service road is not acceptable ▪ The preferred route should definitely have an on/off ramp located at Broadwater, however it should be located at the new bridge over the Richmond River at Broadwater linking up with the existing Pacific Highway. ▪ The preferred route as it passes through Broadwater National Park should be widened to accommodate a local traffic route from Woodburn to Broadwater. ▪ The diversion of cane transport traffic through Rileys Hill and South Broadwater would result in an estimated 26,000 additional truck movements per annum through	The final interchange and service road arrangements have been determined based on submissions, community consultation, discussions with local Councils and investigations concerning traffic performance, functionality and accessibility. The community was consulted via a leaflet distributed in October 2006 which explained the options for interchanges and local road arrangements. Community members could respond via a reply paid feedback form included with the leaflet or at a CIC open day held on Thursday 2 November 2006.

Response No.	Concept design issue	Response
	these two residential areas.	
26	What is a half diamond interchange and how does it affect access?	A half diamond interchange is an interchange that provides access to and from the highway in one direction only, as opposed to a full diamond interchange which provides access to and from the highway in both directions. For example a south-facing half diamond interchange would allow local traffic to join the highway to head south, and allow traffic coming from the south to leave the highway.
27	Safety concerns with the highway built on an embankment considering that this section of the Pacific Highway is already recognised as a fatigue zone.	The primary driver in the proposal to upgrade the entire length of the Pacific Highway is to improve the safety for all road users. To achieve this the highway must be upgraded to a high quality and consistency in terms of geometric alignment, interchanges, road pavement, flood immunity and visibility. Raised sections of the highway would include appropriate safety railings and embankments with moderate batters to ensure road safety for all road users and people adjacent to the highway.
28	The upgrade will impact on local access to towns and services, farming operations, movement of farming equipment and access to cane loading pads.	The RTA has consulted with the community including local councils with regard to changes to local public roads and inter-farm accesses to suit traffic patterns, pedestrian routes, property owner needs and to ensure safety. Access requirements of property owners are being examined on a property by property basis and in consultation with landowners.
29	The preferred route will be built at an exorbitant expense based upon a negative cost benefit ratio and data that is significantly ignored or manipulated to justify its construction. All this for an estimated increase of 5000 vehicles in 10 years.	The RTA, as an agency of the NSW Government, is required to carry out the relevant aspects of the Government's policy in relation to roads and transport. Improving the safety of the Pacific Highway is a top priority for the RTA, which is committed to improving the safety record of this section of the highway. The preferred route economic evaluation indicates a negative Net Present Value (NPV) and a Benefit Cost Ratio (BCR) less than 1. However, there are a number of non-quantifiable factors that should

Response No.	Concept design issue	Response
		be considered in the evaluation decision that could not be quantified in the economic analysis including: ▪ Intangible benefits that have been excluded since they cannot be easily quantified in monetary terms; ▪ The Woodburn to Ballina section of the Pacific Highway is part of a much larger route between Sydney and Brisbane that has strategic importance; and ▪ The importance of this section to the entire highway, and the highway as a whole to entire economy.
30	Surely a more cost effective route is preferable and is the correct way to go. The preferred route is not the cheapest route.	The development of a preferred route is complex, with many competing constraints which need to be identified and assessed. These constraints can be broadly grouped into social, economic, environmental and engineering and includes agricultural land- use. The RTA has endeavoured to select a preferred route that provides a balance between all these constraints. The decision was not based purely on the cost of the preferred route.
31	A significant cost saving, as well as reduced environmental impact would be achieved by reducing the highway design from the current 100 metre wide route, designed for B-double trucks at 110kph, to a dual carriageway designed for 90kph maximum speeds.	Design standards for the Pacific Highway Upgrade Program require two lanes in each direction with consideration for the future addition of another lane each way, separated by a median of a desirable width of 12 metres. These standards arose from the RTA objectives for upgrading the Pacific Highway, including a high priority on safety improvements and consistency of design standards. The 100 m wide preferred route corridor allowed for further design development following the preferred route announcement, and is not necessarily the final width that will be acquired for construction purposes.
32	The route has only been chosen as it goes near gravel extraction pits and shale quarries that will save the RTA	The selection of a preferred route is complex with many competing constraints which need to be identified and assessed. These

Response No.	Concept design issue	Response
	thousands of dollars and will cost the community irreplaceable values whether they be cultural or environmental.	constraints are broadly grouped into social, economic, environmental and engineering. The preferred route was selected using an assessment of the relative importance of the constraints and the identification of the route option that provides the best balance across them. The location of the preferred route close to gravel extraction pits and shale quarries, whilst being potentially beneficial, was not a key factor for route selection.
33	Many sections of the proposed route will traverse locations that do not have soil/rock suitable for construction of a highway of the nature suggested. The preferred route impacts on acid sulphate soils	Geotechnical investigations were undertaken as an input to the route selection process. Further detailed geotechnical studies are currently being carried out along the preferred route. Given that construction of approximately 5km of road embankment would be required over areas underlain by deep soft sediments as identified in the geotechnical studies, minimising the time for embankment settlement and optimising construction timing/costing will present a geotechnical challenge for the project. Where the preferred route does go through potential acid sulphate soils, extensive planning and investigation would go into the design and construction of the highway. Established ground treatment and protection techniques would be used to ensure the impacts on the local environment and watercourses would be mitigated to approved levels.
34	Due to the nature of the cane varieties and crop cycles, there is a need to burn the cane before it is harvested. With the blocks running adjacent to the motorway it will be impossible to guarantee the smoke does not affect visibility across the road.	Drivers using the existing Pacific Highway have had to drive in smoky conditions due to cane burning. It is likely that cane burning would lessen in future due to the construction of the electricity co-generation plant at the Broadwater Sugar Mill, however, adequate advisory signage may be considered to warn drivers of adverse driving conditions on the upgraded highway.
35	Safety concern for sections of the preferred route where drivers would be travelling into the sun in either the morning or	Sun glare is an issue that will be considered in the “Safety Audit” of the preferred route. Where it is a concern appropriate design can be

Response No.	Concept design issue	Response
	the afternoon sun.	used to mitigate the issue.
36	The preferred route will require a large amount of imported fill. Has the source of this fill been nominated?	The engineering design team is currently investigating the fill requirements for the preferred route, and any opportunities to reduce these volumes. Options currently under consideration for the source of fill material include obtaining material locally from the vicinity of the route, obtaining material from local quarries, or obtaining material from quarries further afield. At present no specific sources have been nominated.
37	New and/or larger access roads will be required, which will carry more traffic as a result of the limited access to the highway. This has not been communicated to the residents and will add further to the disruption caused by the new highway. These access roads will be the source of increased pollution, noise, and accidents, as a result of the increase in traffic.	Traffic counts on local roads have been used to create a traffic model of the local road network. Using this model the effect on local road traffic of several different highway access options have been modelled. This has been used as part of the selection of the location and configuration of interchanges. The community have also be consulted to assist in this selection. Following this modelling and consultation, the final configuration of the highway and interchanges has been agreed. Based on the results of the initial modelling some improvements and alterations to existing roads are being proposed. The configuration will undergo more detailed traffic modelling during the environmental assessment stage to assess if changes or improvements need to be made to local access roads.
38	There is no mention of the conveyer from the Ponderosa to the mill. Construction of the overpass should not interfere with conveyor operations (to the Broadwater Sugar Mill).	The Preferred Route Report does not mention the conveyor belt between the Ponderosa and the Broadwater Sugar Mill in detail as it was addressed in the Route Options Development Report - Stage 1 (RTA, June 2005). Details of the approved electricity co-generation plant, the bio-mass fuel stockpile and the conveyor system have been provided to the RTA and Hyder. Preparation of the concept design of the preferred route has proceeded in full knowledge of the location and consent requirements of the plant including the

Response No.	Concept design issue	Response
		conveyor between the Ponderosa and the mill. The concept design for the highway upgrade has taken into account the location of the conveyor belt and the various requirements under the Conditions of Approval for the co-generation plant. This consideration includes a minor alignment alteration to minimise the impact on the conveyor arrangement. If the upgrade is approved, Construction Management Plans will be prepared which will ensure that conveyor operations can continue during the construction phase of the project.
39	Lack of positive identification in the preferred route map to the whereabouts of interchanges along the whole route.	The purpose of the Preferred Route brochure was to indicate the general alignment of the route, to provide some information on aspects of the route, and to suggest possible interchange arrangements at the Woodburn-Evans Head Road, at the Broadwater-Evans Head Road, and north of Wardell. At that stage of development of the concept design it was not possible to identify more detailed aspects of the design including interchange details. The community has now been consulted about interchange locations via a leaflet distributed in October 2006 which explained the options for interchanges and local road arrangements. Community members responded via a reply paid feedback form included with the leaflet or at a CIC open day held on Thursday 2 November 2006.
40	Modified Option 2C is further outside the study area and impacts on previously unaffected property owners.	In response to specialist ecological information concerning Wardell Heath the preferred route was extended further outside the original study area in some locations to reduce the environmental impacts. As a result some properties which were not previously affected became impacted by the preferred route.
41	A number of submissions included requests for alternatives/modifications to the preferred route. These	Since the receipt of all submissions on the Preferred Route, the project team has examined all the suggested modifications to the

Response No.	Concept design issue	Response
	included: ▪ Modified Route 1C East - follows the preferred route but slightly further east. ▪ A new alignment was proposed in the vicinity of Lumleys Lane, Hillside Lane and Wardell Road to reduce property impacts, to avoid scarred trees near Wardell Road and to not encroach on Jali land. ▪ Alternative Richmond River crossing proposed. ▪ Resort to the old 1C option (as displayed during the route options display). ▪ Move the preferred route closer to Broadwater National Park to reduce farming impacts. ▪ The road should be moved slightly south of where 2C was on the original maps, ie instead of pushing further north onto Lumleys Lane. ▪ Why would it not be possible to divert from Lumleys Lane as soon as the road clears the bush so that the effect on surrounding housing is minimised and there is less isolation of parcels of land and less destruction of agricultural land. ▪ Move the proposed highway route further eastwards around Broadwater Evans Head Road to minimise the impact on both the properties and lifestyles, and without creating any major impact on the lifestyles of other property owners. ▪ Broadwater has a limited amount of private flood free land and what is available must be preserved for future development. The route through property north of	preferred route alignment. These modifications were examined in accordance with the existing constraints (eg ecology, heritage, social, engineering), results of field investigations since the announcement of the Preferred Route and in accordance with the selection criteria. Property owners who have requested a modification to the Preferred Route alignment have been advised of the outcome of the investigations.

Response No.	Concept design issue	Response
	Broadwater National Park must be changed and moved to the east to allow for further expansion for the town of Broadwater.	
42	The premise or concept of creating a new highway in the same area as the existing highway is flawed.	The approach to upgrading the Pacific Highway is to investigate opportunities to retain the existing alignment if it meets the required Pacific Highway design standards. As flooding is a major issue in the Woodburn to Ballina section, highway locations away from the existing alignment have been selected in some locations.

4 Hydrology

Response No.	Hydrology issue	Response
43	The preferred route goes through a major floodplain and will cause flooding in the area to be worse. A major levee bank will be created at the bottom end of the proposed Ballina to Woodburn highway upgrade as a result of a proposed bridge like structure of some 800 metres necessary to cross a difficult area of the floodplain. This structure will undoubtedly collect debris and other rubbish during flood events and cause flooding around Woodburn and possibly down river as far as Wardell. The duration of flooding in the area will also be lengthened.	Extensive flood modelling of the route options was undertaken as part of the route selection process. The flood modelling consisted of a two dimensional hydraulic model that covered the majority of the floodplain between Coraki and Ballina. This represents the most comprehensive and complete model that has yet been carried out for the Richmond River floodplain in this area. Comparison of predicted results against past floods demonstrated that results were not contradictory. This approach provided results that were of an order of accuracy sufficient to provide input to a comparative analysis between the initial route options to enable the preferred route to be identified. Additional analysis was carried out to determine the increase in inundation times across the floodplain and this analysis demonstrated that the maximum increase in inundation times was less than half a day, and generally much less than this. Where the preferred route lies in the floodplain the level of the road would be raised on an embankment to provide flood immunity. Viaducts and culverts would be provided within the proposed embankments to convey floodwaters under the road. Where bridges, viaducts or culverts are used and included in the modelling the blockage affect of debris is factored into their design to ensure that they provide sufficient waterway openings even with some blockage.
44	Flooding near the Blackwall Range has not been addressed.	Since the announcement of the preferred route hydraulic modelling has been undertaken of the proposed upgrade, including the area near the Blackwall Range. The proposed upgrade through this area has been subject to

Response No.	Hydrology issue	Response
		hydraulic modelling of the localised catchments and culverts and viaducts will be sized appropriately to allow floodwater to pass beneath the highway.
45	Why should the road go across the flood plain causing more flooding problems to the communities in this area?	A large portion of the study area for the route selection study lies within the coastal flood plain of the Richmond River catchment. This presented a major consideration for the development of route options and the selection of the preferred route. The flood modelling and analysis indicated that it was possible to build a highway within the floodplain provided that appropriate mitigation measures were incorporated into the road design. Where the preferred route lies in the floodplain the level of the road would be raised on an embankment to provide flood immunity. Viaducts and culverts would be provided within the proposed embankments to convey floodwaters under the road.
46	The preferred route will remove flood free land for moving cattle to and will mean that the house has to be moved to another part of the property, which is very wet and not ideal for building a home on. We need to know how high the flood levels will go after the road is built.	During the concept design refinement further flood modelling will be undertaken utilising new survey information. The base case and the preferred route case will be analysed using a finer grid to ensure results obtained are accurate. This work would provide information that can be made available to property owners with regards to flood levels and inundation times, so that they can plan for flood events. Individual discussions will be held with landowners to ensure that any farming operations during flooding, such as moving cattle to higher ground, can continue.

5 Biodiversity

Response No.	Biodiversity issue	Response
47	Draining of lands surrounding the new highway will destroy the surrounding wetlands and therefore the remaining fauna and flora that survived the initial destruction caused by the construction of a brand new highway. This has not been investigated appropriately.	The highway only has the potential to drain the surrounding land where it is below the existing ground level. Construction of the highway below the existing ground level will only take place following extensive investigation into local groundwater flows and assessment and mitigation of the impacts of the highway on the area. As part of the preferred route geotechnical investigations Coffey Geosciences installed groundwater monitoring equipment at regular intervals along the length of the route. This equipment has enabled Coffey Geosciences to monitor the groundwater levels over the length of a year, completing their monitoring in April 2007. In addition, Coffey Geosciences has carried out hydrogeological studies on the groundwater flow to the Wardell Heath/Wetland and on the water table at the Rous Water Borefields at the Woodburn Evans Head Road.
48	Constructing a new highway through Acid Sulphate Soils in areas of mangroves, swamps and wetlands will result in major impacts on fish life and breeding, with the significant risk of increased acid leaching into surrounding waters and destroying fish and their habitat, including important breeding sites.	Where the preferred route does go through Potential Acid Sulphate Soils, extensive planning and investigation would go into the design and construction of the highway. Established ground treatment and protection techniques would be used to ensure the impacts on the local environment, wetlands and watercourses would be mitigated to approved levels.
49	The preferred route has the greatest ecological impact of all the route options put forward by the RTA (particularly Option 2C) and divides two fragile ecosystems; the Wardell coastal heath lands and the Blackwall Range. Blackwall Range and the valley below on the eastern side is one of the very few ecologically significant areas almost totally unspoilt by human	The ecological assessment of the short listed options found that in Section 2 of the study area Option 2A and 2B had higher ecological impacts than Option 2C. However Option 2C had higher impacts than Option 2D, 2E and Option 2F. The VMW in July 2005 confirmed this comparative assessment of the ecological impact of each option, which was attended by various

Response No.	Biodiversity issue	Response
	folly left on the east coast of NSW.	government agencies and community members. As a result of this assessment, and in considering other factors, Option 2C was examined to determine if it could be realigned to reduce the ecological impact. Option 2C was subsequently realigned outside the Wardell Heath which reduced the overall impact on native vegetation and habitats. It is recognised that the modified alignment of Option 2C does fragment regionally significant fauna corridors, however this impact was reduced by locating the alignment mostly in existing cleared land which in itself is a fragmentation barrier between Wardell Heath, the Blackwall Range and the Tuckean Nature Reserve. This was considered as part of the ecological assessment of the short listed options. Mitigation measures have been carefully developed for safe fauna movement through this area as part of the concept design refinement. In response to issues raised by DECC, Ballina Shire Council and the community an independent peer review of the Phase 1 and 2 Ecology Investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken. Further ecological investigations and a route selection review have also been undertaken to ensure the ecology input to the route options assessment is scientifically robust. The results of these reviews have been made available to the public on the project website.
50	The 2C route (along with Options 2 A and 2B) is of greatest peril to the koala populations as it will fragment to the point of destruction known dispersal corridors in the Riley's Hill, Bagotville, Meerschaum Vale, Lumleys Lane and Buckomobil areas.	The RTA is aware of the importance of the koala habitat in the study area and the current fauna movement patterns. The concept design has been developed to minimise impacts on flora and fauna. Where known fauna corridors are identified, mitigation measures have been developed to ensure that the fauna corridor is maintained. Prior to construction of the preferred route the RTA will undertake an

Response No.	Biodiversity issue	Response
		environmental assessment of the preferred route.
51	The RTA Pacific Highway Manager gave undertakings at the Value Management Workshop held in Ballina in July 2005 that major errors and shortcomings in environmental studies undertaken along Route 2C would be rectified prior to the announcement of a preferred route. No further studies were undertaken nor any of the major errors rectified. As a result the announcement of Route 2C as the preferred route is invalidated.	The VMW in July 2005 confirmed the ecological assessment of the short listed options and the conclusion that in Section 2 of the study area Option 2A and 2B had higher ecological impacts than Option 2C and Option 2C had higher impacts than Option 2D, 2E and Option 2F. Issues identified at the VMW included investigating further the impact of Option 2C. Further ecological desktop investigations and additional field surveys were carried out on Option 2C and as a result of this investigation Option 2C was realigned outside the Wardell Heath/Wetland which reduced the overall impact on native vegetation and habitats. In response to issues raised by DECC, Ballina Shire Council and the community an independent peer review of the Phase 1 and 2 Ecology Investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken. Further ecological investigations and a route selection review have also been undertaken to ensure the ecology input to the route options assessment is scientifically robust. The results of these reviews have been made available to the public on the project website.
52	The preferred route impacts on the biodiversity of the whole area, sensitive environmental areas, core habitat and threatened species including: ▪ native orchids ▪ wetlands near the Blackwall Range ▪ endangered species ▪ endangered ecological communities (as defined by both the Environment Protection and Biodiversity	The development of route options is complex with many competing constraints which need to be identified and assessed. These constraints were broadly grouped into social, economic, environmental and engineering. The preferred route selection process included an assessment of constraints and the selection of the route option that provided the best balance across all areas including environmental constraints. The RTA is aware of the environmental value of the area and the preferred route concept development process aims to integrate the

Response No.	Biodiversity issue	Response
	Conservation Act 1999 and Threatened Species Conservation Act 1995) ▪ koalas ▪ areas of national and international environmental significance ▪ old growth forest ▪ Bush Hen ▪ Mangrove Honeyeater ▪ Migratory Rainbow birds ▪ Wedge tail Eagles ▪ Osprey ▪ Wallum Froglet ▪ Eastern Grey Kangaroos ▪ Long nose potoroo Mitigation measures are not going to reduce these impacts and there is some doubt that they even work.	highway into the natural environment to minimise impacts on threatened species and communities. Prior to construction of the project, the RTA would undertake an environmental assessment of the preferred route. Appropriate mitigation measures would be designed and implemented to avoid disturbance and provide opportunities for fauna movements across the new highway.
53	It appears obvious that the RTA considers environmental concerns to be of less importance compared to geotechnical and cost concerns. Ecological considerations should be given highest priority in RTA decision-making	When selecting the preferred route the RTA considered many competing constraints which can be broadly grouped into social, economic, environmental and engineering. The preferred route was considered to be the route option that provided the best balance across all areas including environmental constraints.
54	The natural bushland near Cooks Hill has been left untouched by property owners in the area. The preferred route will impact on this native vegetation. This vegetation was not	Acknowledged. This has been investigated, and it was found that the vegetation in this area was missed when the map was made. This was rectified, and the presence of this vegetation was included in the mapping that was used to as part of the route selection process.

Response No.	Biodiversity issue	Response
	identified in the Route Options Development Report.	The Preferred Route Report shows an updated map (Figure 7.20) which includes the vegetation near Cooks Hill.
55	The RTA have lied and deceived the community about the amount of significant vegetation to be affected	The RTA has undertaken vegetation mapping which has assisted in identifying the major ecological constraints in the study area. Areas of likely/potential endangered ecological communities (EEC) were also identified as part of the route development process. The total area of native vegetation that would be removed by each option was calculated using GIS tools, to provide a comparison between the options.
56	The RTA have tried to ignore SEPP 71 coastal zoning. The preferred route for the Woodburn to Ballina Upgrade is in breach of SEPP 71	State Environmental Planning Policy 71 (SEPP 71) was gazetted on 1 November 2002 and applies to coastal development applications and to local environmental plans. The provisions of this SEPP do not apply to the Woodburn to Ballina project as Clause 9, Section 2(b) states that this SEPP does not apply to development that is subject to approval by the Minister for Planning under any other environmental planning instrument. The RTA proposes to submit the Woodburn to Ballina project to the Department of Planning for approval under Part 3A of the Environmental Planning and Assessment Act 1979.
57	While there are extensive studies done on the flora and fauna occurring inside a footprint, none have been undertaken outside the footprint	During the initial development of route options vegetated areas were mapped as constraints. Where possible (depending on other constraints) routes were developed to avoid vegetated areas. The ecological studies during the route option development stage were undertaken to provide a comparison between the route options. As such the mapping of vegetation was only undertaken within the corridors identified. It is considered that this was sufficient to compare the route options. It should be noted that although vegetation was only mapped within the route options, fragmentation issues were investigated utilising

Response No.	Biodiversity issue	Response
		aerial photography and site inspections. During the preferred route selection process further consideration was given to ecological impacts. As a result modifications were made to some of the options to reduce their ecological impact. In response to issues raised by DECC, Ballina Shire Council and the community an independent peer review of the Phase 1 and 2 Ecology Investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken. Further ecological investigations and a route selection review have also been undertaken to ensure the ecology input to the route options assessment is scientifically robust. This included mapping outside the footprint of the route options. The results of these reviews have been made available to the public on the project website. The result of the review of the route options in Section 2 was that all options except for Option 2F had high ecological impacts. However the selection of a modified Option 2C is still supported when considering all the factors that need to be considered as part of the preferred route selection process. Further ecological impact assessment would be undertaken of the preferred route during the preparation of an environmental assessment for the project.
58	The very limited field surveys undertaken for the assessment of route options failed to locate any koalas in areas known to support high density populations. In our view, a far greater effort was needed to assess the presence, density and habitat utilization patterns of koalas in the study area before any sound decisions can be made in relation to impacts upon them.	The survey methodology undertaken was aimed at identifying threatened species and endangered population habitats and the location of endangered ecological communities within each of the options. These surveys were intended to add to the large amount of existing data held by government agencies, community members and previous ecological assessments. Given the detailed records provided by database searches, information from local Councils and members of the community in

Response No.	Biodiversity issue	Response
		the study area, particularly with regards to koalas, it is unlikely that additional species or species groups and their distribution will be discovered that are not already known and identified. Further surveys have been undertaken on the preferred route as part of the concept design refinement.
59	Local extinctions are a real threat due to fragmentation of populations and habitats, increased road strikes, and impact of pollution (including noise) on local fauna and flora. A new highway will be disastrous to the fragile biodiversity that has managed to survive in an area, which despite having been disturbed, still contains large areas of good quality habitats.	The RTA has endeavoured to minimise the impact on threatened species and native vegetation by utilising cleared areas for the preferred route. One key issue addressed by the ecological assessment was the likelihood of the preferred route causing impacts on threatened species. Where the assessment indicated a possible impact on threatened species the alignment was moved (where possible) to reduce that impact. Mitigation measures would be developed to further reduce the likelihood during the Environmental Assessment phase. It is considered that an upgraded highway will reduce road strikes through the development of mitigation measures such as a fencing system to keep fauna off the highway and underpasses or overpasses to provide for fauna movement.
60	The preferred route will have an unacceptable impact on key habitats and regional fauna corridors identified by DECC.	The DECC key habitats and regional fauna corridors were identified as part of the ecological assessment. The development of the preferred route took these into consideration when determining the alignment of the preferred route. Mitigation measures would be developed as part of the Part 3A environmental assessment to reduce the impact of the highway through the key habitats and regional fauna corridors.
61	The RTA does not wish to take some small amount of land from National Parks between Langs Hill and Broadwater, and parallel to the highway.	The preferred route currently follows the existing highway through Broadwater National Park. The amount of National Park land required for the project has not been finalised and will depend on further investigations regarding the location of local access roads,

Response No.	Biodiversity issue	Response
		interchanges, road drainage and ecological mitigation measures. RTA are currently consulting with DECC regarding any impacts on National Park land.
62	Various ecological assessment reports appeared to lack scientific rigour, to contain significant ecological errors, and to oversimplify the impacts and the appropriateness of the mitigation measures to be utilised to offset the impacts of the Highway on threatened species and Endangered Ecological Communities. Reports contained substantial errors and drew ecological conclusions which were not justified by any scientific validity with the texts. The inadequate research and high value conservation area threatened mandate an independent assessment prior to any construction.	As a result of the reviews provided by agencies and community members throughout the process the ecology reports were reviewed and where necessary updated to provide a clearer understanding of the assessment process and results. We believe that for the purposes of identifying ecological constraints for the route corridors selected to determine a preferred route, the methodology, results and interpretation of constraints is more than adequate. An environmental assessment of the preferred route would be undertaken in the future. This environmental assessment will include an ecology impact assessment for the preferred route. In addition, the draft Phase 2 ecology report was peer reviewed by Dr Andrew Benwell, a well known and respected botanist from the North Coast region. Dr Benwell provided comments and a subsequent Addendum Report was prepared in October 2005 to address his comments. Dr Benwell provided a letter to the project t[ea]m on the 1st November 2005 stating that the work undertaken was acceptable for this phase of investigations to determine a preferred route. In response to issues raised by DECC, Ballina Shire Council and the community an independent peer review of the Phase 1 and 2 Ecology Investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken. Further ecological investigations and a route selection review have also been undertaken to ensure the ecology input to the route options assessment is scientifically robust. The results of these reviews have been made available to the public on the project website.

Response No.	Biodiversity issue	Response
63	The RTA like all other government agencies is supposed to adopt the four principles of Ecologically Sustainable Development being (a) the precautionary principle, (b) inter generational equity, (c) conservation of biological diversity and ecological integrity and (d) improved valuation, pricing and incentive mechanisms (EP&A Regs, 2000). The principles of ESD have not even been considered in the planning process.	Preliminary consideration of the ESD principles commenced during the route options development stage. This consisted of gathering information through initial specialist studies and investigations and community feedback. Following development of the route options a broad range of social, environmental and design factors were used to assess the suitability of the route options to provide a basis for the selection of a preferred route. The preferred route chosen was the route option that provided the best balance between all the constraints. The ESD principles will be assessed again in detail during the environmental assessment.
64	Concerns were raised regarding ecological information contained within the Preferred Route Report.	The Preferred Route Report was prepared to describe the selection and assessment of the short listed options and the subsequent development and refinement of the preferred route. It was not intended to provide a full ecological assessment of the short listed options. The Phase 2 Ecological Report (which formed an appendix to the Route Options Development Report) should be referred to for detailed ecological information regarding the short listed options, including the preferred route. Further ecological investigations will be undertaken as part of the environmental assessment for the preferred route, including a detailed ecological impact assessment in accordance with DECC guidelines.

6 Indigenous heritage

All issues regarding indigenous heritage are contained and responded to in **Appendix D**

7 Non-Indigenous heritage

Response No.	Non-indigenous heritage issue	Response
65	The preferred route impacts on the Stonehenge property, however the Preferred Route Report did not identify this impact.	The project team acknowledges that an error was made in not identifying the Stonehenge homestead as being affected by the preferred route. Unfortunately the incorrect house was identified as 'Stonehenge' and as a result did not identify the impact on the house, 'Stonehenge', in the Preferred Route Report. Further heritage assessments will be undertaken as part of the environmental assessment and the error will be rectified in the Non-Aboriginal Heritage Assessment Report.
66	Some farming properties are significant to the history of the settlement of the study area. Remnants of these settlements exist on properties, including a quarry, agricultural remains and an old brickworks.	The study team is aware of heritage items and heritage values in various properties that are affected by the preferred route. As outlined in the Preferred Route Report these impacts were considered during the route selection process. Concept designs have been developed to minimise impact on these areas and further investigations, including developing appropriate mitigation measures, would be undertaken as part of the environmental assessment for the project.
67	Heritage values have not been considered seriously enough in the selection of the preferred route.	Investigations to date and consultation with Councils, the local community and historians in the study area have endeavoured to identify the location of heritage sites and to minimise the impact on these as part of the route selection process. Where the preferred route impacts on sites of heritage importance, management measures would be determined to ensure that sites and areas of importance are protected and conserved where possible.
68	The preferred route destroys magnificent historic properties i.e. Stonehenge and Oakvale.	The preferred route does not impact directly on the homestead known as 'Oakvale' but does affect part of the property. The preferred route does impact on the homestead known as

Response No.	Non-indigenous heritage issue	Response
		'Stonehenge' as discussed above. Further investigations would be undertaken as part of the environmental assessment for the preferred route and management measures would be developed in consultation with the owners.
69	The heritage significance of the Byrne property at Broadwater is at the core of the sugar industry and the preservation of the property is fundamental to the heritage of the Broadwater community.	It is acknowledged that there will be impacts on the Byrnes' property and any potential measures to mitigate these impacts will be discussed directly with the property owners. Following the preferred route announcement the project team, together with the project heritage consultants, surveyed the Byrne property to accurately locate the heritage sites and to assess the impact the route may have on them.

8 Property issues

Response No.	Property issue	Response
70	Property owners impacted by the preferred route should be well compensated by the RTA. Property owners are concerned they will not get a fair value for their impacted property. Where a house needs to be moved to another part of the property due to impacts from the preferred route, who pays these costs? This is of particular concern where the new site needs preparation prior to moving the house.	Compensation for land acquired by the RTA is assessed in accordance with the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991*. The Act guarantees that, if and when the land is acquired by the Roads and Traffic Authority under that Act, the amount of compensation will not be less than market value (assessed under that Act), unaffected by the proposal. If the RTA only requires a portion of a lot or property to build a road, the amount of compensation to be paid is assessed using the 'before and after' method, involving two separate valuations. The first valuation is of the property unaffected by the road proposal. The second valuation is of the residue land at the same date, on the basis that the new road has been constructed and is in use. The difference between the two valuations is compensation which takes into consideration the loss of improvements. The affected landowner may then wish to use the compensation amount paid by the RTA to establish new improvements on the property, subject to council approval.
71	Farm production will be lost as a result of the property impact of the preferred route. This will in turn impact on the viability of farms.	As well as purchasing property that becomes untenable after reduction in size as a result of the preferred route, the RTA will purchase businesses that can demonstrate they can no longer function without the land lost to the highway. Individual negotiations are being undertaken with all directly affected property owners to determine potential impacts, appropriate mitigation measures and/or compensation.

Response No.	Property issue	Response
72	What compensation or mitigation measures are available to property owners whose property may lose value by being alongside the preferred route if no part of the property is required to be purchased for construction.	Under the *Land Acquisition (Just Terms Compensation) Act 1991*, compensation is payable to landowners where part or all of their land is required for roadworks. For property owners living close to, but whose land is not directly affected by the highway (i.e. no part is required to be purchased for road construction), there are no provisions for the RTA to provide financial compensation from the impact of the highway on the land or dwellings. Investigations undertaken as part of concept design development and to be undertaken for the environmental assessment will consider all reasonable and feasible options for mitigation of potential impacts such as noise and visual in accordance with RTA and other agency guidelines. Adoption of a particular mitigation option would follow a cost/benefit analysis for all design issues, e.g. efficiency, durability and maintenance.
73	The RTA's Route Options Development Report Phase 1 includes costings where houses are affected, using a standard cost of $250,000 per house. This is extremely inadequate and underpriced, as most rural residential properties in Section 2 and 3 fetch upwards of $400,000.	The average cost per house outlined in the Route Options Development Report was based on an average purchase price for houses in the study area. This information was obtained from local real estate agents, councils and other property agencies.
74	Why does the preferred route impact on prime agricultural land and therefore the livelihood of the occupants of that land.	The selection of a preferred route is a complex process that involves assessing many different constraints, and finding a balance between all the impacts. Throughout the route selection process and during concept design, the impact on property has influenced the alignment of the highway and the provision of accompanying infrastructure. The amount of land lost to the highway and the severance caused by it has been monitored and where possible minimised to reduce the impact on the local community. If the preferred route impacts on an agricultural

Response No.	Property issue	Response
		property to the extent that the property becomes unviable, the RTA would consider purchase of the whole property.
75	The project team should again approach the Aboriginal community to negotiate a deal to gain access through their land. The present situation is creating a lot of ill feeling within the community.	The RTA is continuing to discuss the preferred route alignment with all impacted property owners and other community members and government agencies.

9 Landuse, planning and zoning

Response No.	Landuse, planning and zoning issue	Response
76	As the road is still unfunded, why is there planning going ahead when there are many other roads needing upgrading yesterday? In the mean time people keep dieing on our national highway.	Planning for a major highway upgrade takes many years. It is necessary to select and undertake the necessary statutory approval process to provide some certainty to local community members as to the location of the highway upgrade. The cost of planning the upgrade is only a small portion of the total costs, and, therefore spending money on planning will not obstruct the construction of other projects. Although this section of the Pacific Highway may not be built for some years, by including an approved alignment on council environmental planning instruments it will enable people to conduct their livelihoods with knowledge of the position of the future highway upgraded. The purpose of the entire Pacific Highway upgrade is to improve travelling conditions for all road users and to prevent serious accidents occurring.

10 Socio-economic impact

Response No.	Socio-economic issue	Response
77	The worry caused by the Woodburn to Ballina Upgrade is causing health problems for people in the community.	The RTA is aware of the effects the route selection process would have on people within the study area and those affected by the preferred route. Public consultation on other projects revealed that the local communities thought that the longer period of uncertainty prolonged the stress, was more disruptive and was more damaging financially and socially. As a result the RTA has endeavoured to undertake the process as quickly as possible but still ensured a robust and thorough assessment.
78	The preferred route impacts on a large amount of important agricultural land. This impact will reduce agricultural production in the area.	The development of a preferred route is a complex process that takes into account all the constraints and potential impacts, selecting a route that provides a good balance between all the impacts. The preferred route does impact on some agricultural properties. The RTA have refined the concept design of the preferred route and endeavoured to minimise property impacts and disturbance to agricultural activities.
79	The preferred route is biased in favour of the cane industry and should impact on more cane land because the industry is heavily subsidised and has a questionable future.	The selection of a preferred route is complex with many competing constraints which need to be identified and assessed. These constraints are broadly grouped into social, economic, environmental and engineering. Included in these are agricultural constraints and the cane industry. The preferred route was selected using an assessment of the relative importance of the constraints and the identification of the route option that provides the best balance across them. It should be noted that some of the land in the study area where sugar cane is produced has been identified as Regionally Significant Farmland by the Department of Planning. This status recognises the importance of this land for agricultural purposes regardless of the

Response No.	Socio-economic issue	Response
		crop grown.
80	A motorway is not needed to improve safety. Government money would be better spent on driver education and a more robust examination system to create better drivers and hence less accidents.	In January 1996, the NSW and Commonwealth Governments announced their joint commitment to the Pacific Highway Upgrading Program, a $2.2 billion, ten year program to improve the condition of the highway, reduce road accidents and injuries and improve transport efficiency. The New South Wales Government released Road Safety 2010 as part of its commitment to making NSW roads the safest in the world. This document sets out the many initiatives that will be undertaken from now until the year 2010 that will help us realise this goal. Initiatives include the graduated licensing scheme, safe speeding campaigns, lower urban speed limits, increased penalties for drink driving and excessive speeding, double demerit point weekends and driver fatigue campaigns. Implementing Road Safety 2010 will require close cooperation and consultation between the community, government agencies and all organisations involved in road safety. It is also important to note that accident data collected by the RTA and the NRMA clearly highlights the improved safety benefits for sections of the Pacific Highway that have already been upgraded.
81	It is vital that a decision be made as quickly as possible to understand the impact the highway will have on properties so that property owners can plan their future.	Following the preferred route announcement it was necessary to undertake surveys of the route in more detail. Some of these, such as ecological surveys have to cover all seasons to provide enough detail to design the upgrade. Following the results of these surveys it has taken some months to develop the concept design. Following the concept design display it will take time to prepare the necessary environmental assessment prior to receiving an approval for the project. Selecting a preferred route provides the community with more certainty about the location of proposed upgrade and enables

Response No.	Socio-economic issue	Response
		the road corridor to be included on council environmental planning instruments.
82	The preferred route impacts on families who have been farming their properties for generations.	The RTA is aware that there are a number of farming families in the area who have been farming their land for generations. Impact on agricultural land was one of the issues that was assessed during the process of selecting the preferred route. The preferred route does impact on agricultural land, however the preferred route provides a balance between all the constraints in the study area.
83	Moving the highway from one side of Broadwater to the other does not improve the impact on Broadwater.	The preferred route goes behind Cooks Hill. The noise and visual assessment undertaken for this option indicates that this will be an improvement on the noise and visual impact on Broadwater compared to the existing highway impacts.
84	The preferred route will impact on the quiet lifestyle, the way of life for many families, the amenity and homes of many people previously unaffected by the Pacific Highway.	The construction and presence of a new highway through any locality will alter the local area and potentially affect people's lifestyles. The RTA aims to limit the negative impacts on the local area's economy, community, environment and history. It is also an important goal of the RTA to introduce positive changes such as reduced traffic and improved safety on local roads, stimulate rural economies, improve local residents access to and from the area and return rural townships to quiet safe areas. For this reason the various parts of the route assessment criteria are designed to provide a measure of these impacts and this formed the basis of the selection of the preferred route. An environmental assessment will be undertaken for the concept design to determine impacts and develop mitigation measures which will be incorporated into the concept design.
85	There is very little existing information about the appropriation of lands to build roads and the social effects that this has on communities.	Typically the development of upgrade options for highways includes an assessment of the social impact of options. Social impacts formed a key factor in the development of route options and the

Response No.	Socio-economic issue	Response
		selection of a preferred route. One of the objectives for the Woodburn to Ballina Upgrade was to minimise socio-economic effects on the local community and maximise socio-economic benefits arising from the project. Further assessment of the socio-economic impacts of the preferred route will be undertaken in the environmental assessment phase of the project.
86	What is more important, B Doubles or people?	One of the major aims of the upgrade of the Pacific Highway is to improve safety for all road users. The development of the preferred route has attempted to find a balance between all the constraints including impacts on local residents, and the requirements for a safe road for all road users.
87	The largest industry in our immediate region is tourism, the preferred route will impact on this industry. The preferred route would mean the death of hundreds of small tourist enterprises along the existing route increasing unemployment and thereby decreasing income to the local area.	The construction of a new highway will have impacts on the surrounding locality. However it is an important goal of the RTA to introduce positive changes such as reduced traffic and improved safety on local roads, stimulate rural economies, improve local resident access to and from the area and return rural townships to quiet safe areas. The improvement of amenity within the towns is intended to make a positive impact to tourism in the area.
88	It is very inappropriate that the RTA is prepared to pander to a range of green groups who simply call for the preservation of so called important "environmental" areas at the expense of all other concerns such as industry and individual producer viability.	The selection of a preferred route is complex with many competing constraints which need to be identified and assessed. These constraints are broadly grouped into social, economic, environmental and engineering. The preferred route was selected using an assessment of the relative importance of the constraints and the identification of the route option that provides the best balance across them.
89	Land (in Section 1) has been sacrificed in preference to the route passing through a commonly considered low grade national park.	The location of the preferred route in the southern section of the upgrade are constrained by two major factors; the necessity to cross the Tuckombil Canal rather than the Evans River, and the border of Broadwater National Park.

Response No.	Socio-economic issue	Response
		To cross the natural banks of the Evans River would have impacts on the ecology, visual amenity and water quality of the watercourse, and an option exists to cross the man-made Tuckombil Canal which is of far lower environmental and visual importance. Several submissions suggest taking the preferred route east into the western fringe of Broadwater National Park to avoid prime agricultural land. The Broadwater National Park consists of coastal heath and wetland. As the Park is not of a tropical, lush nature it is often incorrectly assumed to be of low environmental significance. This type of heathland is actually environmentally significant and biologically diverse, and it is for this reason it is protected as a National Park. Parts of the heathland in the National Park have been disturbed in the past by activities such as sand mining and as such during route development were considered to form less of an ecological constraint than other areas of the National Park. The vegetation and biodiversity is slowly regenerating to its original condition. Additionally, Broadwater National Park is one of the few remaining areas of coastal wallum heath which is a vital habitat for the fish species oxleyan pygmy perch. The oxleyan pygmy perch is listed as: ▪ 'Endangered' in NSW under the Fisheries Management Act 1994. ▪ 'Endangered' under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999. ▪ 'Endangered' on the IUCN (World Conservation Union) international 'Red List' of threatened flora and fauna. The resumption of National Parks to be used for highway construction requires an Act of Parliament; for this to occur it must be

Response No.	Socio-economic issue	Response
		demonstrated that there is no other viable option. The current preferred route demonstrates that there is a viable alternative, making this argument unfeasible.
90	Why has the RTA chosen the route which will impact adversely on the largest body of people in the Broadwater area?	By moving the Pacific Highway behind Cooks Hill, the RTA has attempted to improve the amenity of the township of Broadwater.
91	Concerned that RTA only looks at the economic effects, and the monetary costs of the highway, and that social, community and ecology impacts and the impacts on people rate lowly.	The selection of a preferred route is complex with many competing constraints which need to be identified and assessed. These constraints are broadly grouped into social, economic, environmental and engineering. The preferred route was selected using an assessment of the relative importance of the constraints and the identification of the route option that provides the best balance across them. That there have been numerous community meetings, public displays of route options and the preferred route, seeking community submissions and individual property owner meetings, and the establishment of the CLG and focus groups is indicative of the project team's commitment to all people affected by or interested in the location of the preferred route. During the environmental assessment process further consultation will be undertaken with property owners and other stakeholders to minimise social impacts as far as possible.

11 Pollution and global warming

Response No.	Pollution and global warming issue	Response
92	The preferred route will increase pollution fumes and airborne particles when down wind of the highway and would and create an environment of unbearable noise, dust and traffic during the construction process of the road and consequently impact on the lives of the community and seriously affect the health of residents near the highway. Pollution from vehicle emissions will be trapped against the Blackwall Range polluting the air, soil and water. The preferred route will generate air pollution which will directly impact on Broadwater due to the location of the proposed highway. The sugar mill and proposed cogeneration plant will add to this air pollution, ensuring that Broadwater is surrounded by air polluting activities.	Most of the pollutants with localised effects (carbon monoxide, nitrogen dioxide, benzene and 1, 3 butadiene) disperse to acceptable levels within 10m of the road edge. Regional pollutants, such as particulate matter, nitrogen dioxide and ozone only become an issue when there is a high background level of these pollutants, as is the case in major cities. It is, therefore, unlikely that the air pollutants associated with the upgrade of the Pacific Highway between Woodburn and Ballina would have a noticeable impact in the study area. Most emissions from vehicles are not soluble in water. The emissions of concern for water quality would be sulphur dioxide (SO_2) and lead (Pb). SO_2 represents a minor component of vehicle emissions and is expected to decrease as the Commonwealth Government continues to mandate a program for low sulphur content fuels. Particle pollution in high quantities has the potential to increase the turbidity of water but is unlikely to in this case as the background particle levels in the study are quite low due to the rural nature of the area. An investigation of air quality impacts including cumulative effects would be undertaken as part of the environmental assessment phase of the project.
93	There is a large amount of asbestos open to the atmosphere in Broadwater National Park, east of the old tip. A pit could be excavated, this asbestos buried and sealed in cement and a highway built on top. This would alleviate what is considered in some sections of the community as a very serious problem.	The current alignment of the preferred route does not impact on the asbestos dump in the Broadwater National Park. It is currently not the RTA's intention to remediate this site as part of the Woodburn to Ballina Upgrade.

Response No.	Pollution and global warming issue	Response
94	The rising sea level (as a result of climate change) will impact on the proposed location for the preferred route. This has not been considered in the Preferred Route Report.	Climate change and the resulting sea levels are a concern for all coastal developments, however the exact changes to sea levels are not known. The RTA, as an agency of the NSW Government, is required to carry out the relevant aspects of the Government's policy in relation to roads and transport. Improving the safety of the Pacific Highway is a top priority for the RTA which is committed to improving the safety record of this section of the highway. The RTA is committed to meet the challenge of reducing greenhouse gas emissions and the potential impacts of climate change. An assessment of the net effects of the project in terms greenhouse gas emissions produced during both construction and operation would be undertaken as part of the environmental assessment.
95	The preferred route is longer than the existing Pacific Highway. This will increase greenhouse gas emissions and contribute to global warming.	The RTA is committed to meet the challenge of reducing greenhouse gas emissions and the potential impacts of climate change. The preferred routes is approximately 4 km longer than the existing Pacific Highway, however experience on other road upgrades indicates that other features of the proposed upgrade including reduced corners, constant speeds and better gradients will create a positive impact on fuel consumption and greenhouse gas emissions. An assessment of the net effects of the project in terms greenhouse gas emissions produced during both construction and operation would be undertaken as part of the environmental assessment.
96	The preferred route impacts on wetlands due to runoff from the road draining into the nearby waterways particularly at times of excessive rains when water from collection points along the road will empty into the nearby environment. All the road runoff from the western side of Laws Hill will drain into protected mangrove conservation areas.	The design guidelines for upgrading the Pacific Highway requires the construction of containment structures which capture road runoff before the waters are discharged beyond the highway reserve into sensitive areas. The containment structures are designed to reduce pollutant concentrations before reaching waterways or adjacent lands.

12 Noise

Response No.	Noise issue	Response
97	Traffic noise, especially from trucks will impact amenity in houses by making it impossible to hold a conversation and it will impact on sleep. RTA should consider relocating houses or providing noise mounds to reduce noise impacts.	It is acknowledged that some members of the community are likely to experience an impact from road traffic noise; however the studies to date have indicated that the overall impact to the entire community will be reduced. The RTA would discuss noise abatement measures with all property owners and residents if traffic noise was to exceed DECC goals. The most appropriate noise mitigation measures would be selected and may include low noise pavements, construction of noise barriers and architectural treatment of homes.
98	No studies have been done regarding the impact of noise to residents who are close to the preferred route. We are concerned about the compression brakes from traffic coming from the bridge heading south toward Cooks Hill. The noise is going to be unbearable.	Noise studies were undertaken as part of the route selection process for all the route options. Noise loggers and monitors were placed in selected locations as discussed in the Preferred Route Report to provide background levels as input to the noise assessment for the entire length of each route option. Investigations undertaken as part of concept design development and to be undertaken for the environmental assessment will consider all reasonable and feasible options for mitigation of road traffic noise in accordance with DECC and RTA guidelines. Adoption of a particular noise mitigation option would follow a cost/benefit analysis for all design issues, e.g. acoustic efficacy, durability and maintenance.
99	Noise impacts would be increased by the noise echoing off the Blackwall Range	Noise modelling will be undertaken during the environmental assessment phase of the project. The modelling would take into account topographic features such as the Blackwall range.
100	The Meridian Heights rural residential development will be significantly affected by the preferred route with noise impact -	Meridian Heights is not zoned as a residential area on the Ballina Shire Council Local Environmental Plan 1987 as are Rileys Hill,

Response No.	Noise issue	Response
	this area is NOT shown on the map as being residential as is the case with other areas - eg Rileys Hill and the villages	Woodburn, Broadwater and Wardell which are zoned 2(v) Village. Figure 2-4 in the Preferred Route Report depicts Meridian Heights as an urban area in terms of land use within the study area. There is certainly the potential that traffic noise levels would change with the preferred alignment being closer to Meridian Heights than the existing highway. More details of the existing and predicted noise levels will be available when the noise assessment has been undertaken as part of the environmental assessment process.

13 Visual impact

Response No.	Issue	Response
101	Many properties enjoy panoramic rural views. The proposed preferred route will be passing through the centre of this view and will create visual pollution. Presently, the significant views of our heritage landscape adds value to the property; a road development will detrimentally affect this view.	The preferred route would be designed to highway geometric standards, enable grade separation with other roads, optimise earthworks balance and follow the local terrain as much as possible. The design would be in accordance with the RTA's *Pacific Highway Urban Design Framework – urban design guidelines for the SH10 from Hexham to Tweed Heads.* In addition, landscaping will be undertaken to blend the highway into the surroundings whilst providing an interesting and rewarding journey for road users. A visual impact assessment would be undertaken as part of the environmental assessment for the preferred route.
102	What proposals are there for vegetating this section (in the vicinity of Lumleys Lane), how soon would this be in any way effective, and what do you intend to do in the interim to protect local houses from the adverse effects of your proposal?	As construction of the Woodburn to Ballina upgrade is not proposed for some years, no landscape treatments would be undertaken by the RTA until the project is approved and construction timing is known. Details of proposed landscape treatments would be presented in the environmental assessment documentation.

14 Transport

Response No.	Issue	Response
103	New roads are boring to drive and as new roads encourage drivers to drive faster and longer with no physical or mental stimulation or enforced stops, there will always be road accidents. The upgrade is supposed to improve safety on the roads, but questions should be raised as to the actual safety of a wider, faster road. The money for the upgrade would be better spent providing more driver education.	The proposed upgrade standards for the Pacific Highway project are designed to ensure that the new road will be safe at the design speed (nominally 110 km/hr). A high safety standard is achieved by additional traffic capacity, high quality road pavements, separated carriageways, wide shoulders, restricted access for pedestrians and fauna, pavements above flood levels, lighting at interchanges etc. The cumulative effect of these improvements is that the upgrade is measurably safer than the existing highway even with the faster travel speeds. The RTA, as an agency of the NSW government, is required to carry out the relevant aspects of the government's policy in relation to roads and transport. Improving the safety of the Pacific Highway is a top priority for the RTA, which is committed to improving the safety record of this section of the highway. It is also important to note that accident data collected by the RTA and the NRMA clearly highlights the improved safety benefits for sections of the Pacific Highway that have been upgraded.
104	We fear for the safety of our children as they regularly ride their bikes along the side of the road.	Cyclist safety on local roads and on the old highway would be improved as a result of the reduced existing highway traffic volumes.
105	Road safety and transport needs are the rationale for the upgrade. The concept of peak oil tells us that the use of freight trucks is not economically viable in the long term. The same reasoning indicates a likely long-term reduction in private vehicular traffic.	The traffic assessment takes traffic growth factors based on recent (5 year horizon) time frames. This traffic growth is extrapolated 20 years from the date of opening. The data of recent traffic growth trends in heavy vehicles shows a growth in vehicle haulage with increased fuel costs rather than a decline. Therefore the assessment assumes there will be no shift in traffic transport mode.

Response No.	Issue	Response
106	Isn't the highway being built for our safety?	Yes, improving the safety of the Pacific Highway is a top priority for the RTA, which is committed to improving the safety record of this section of the highway.
107	It would appear as if this is going to be an M class motorway and once up and running at 110 km/ph will allow for the approval of triple semi-trailers to be used.	The current design standards for the Pacific Highway are to cater for B-doubles. The RTA has no plans to allow B-triples on the Pacific Highway.
108	The upgrade needs to be a less invasive highway that will support local & tourist traffic along the coast and not just a tollway for the trucking Industry.	The RTA, as an agency of the NSW Government, is required to carry out the relevant aspects of the Government's policy in relation to roads and transport. Improving the safety of the Pacific Highway is a top priority for the RTA, and it is using whatever means that are at its disposal to improve the safety record of this section of the highway. In doing this the RTA must provide a solution that provides this improved safety, whilst at the same time integrating the design into the local environment, community and landscape in the best manner possible. Extensive studies are being carried out to ensure the preferred route with the most effective mitigation measures will be provided. Whilst major corporations and the trucking industry, not to mention their customers, will benefit from improved transport facilities, another benefit is to the local communities who no longer have to share a two lane road with heavy vehicles whilst on short local trips.
109	Trucks should go on the New England Highway or Summerland Way. More freight should be put on rail. Develop a long term transport plan not reliant upon non-sustainable road freight. Use the money for the Pacific Highway Upgrade to improve	The proposed Woodburn to Ballina Upgrade, part of the Pacific Highway Upgrading Program, is funded by the NSW and Commonwealth Governments. The RTA, as an agency of the NSW Government, is required to carry out the relevant aspects of the Government's policy in respect to roads and transport. The Commonwealth Government's Auslink White Paper outlines the

Response No.	Issue	Response
	freight and passenger rail services.	policy in respect to major transport routes, and sets the development strategy framework for freight movement across all of Australia for all transport infrastructure, including rail, road and sea transport. There has been widespread community support for the upgrading of the Pacific Highway so that levels of road safety are considerably improved. Road safety improvements to the Pacific Highway are a high priority for the RTA. Traffic studies in the early 1990s and detailed in the 'North Coast Road Strategy Report' (1992) have shown that the amount of traffic that would divert to the New England Highway if it was upgraded would not substantially reduce the traffic volumes on the Pacific Highway. The NSW Government asked the RTA to examine the feasibility of other complementary routes to the west of the Pacific Highway in meeting the transport needs of the State and the region. The RTA undertook a preliminary assessment of the proposal put forward by the Member for Ballina, Mr Don Page MP, and others to upgrade the Summerland Way. From the investigations it was determined that the inland corridor is not a viable alternative to upgrading the Pacific Highway between Grafton and Tyagarah/Ewingsdale For further details and the full report refer to the RTA website: www.rta.nsw.gov.au/constructionmaintenance/majorconstructionprojectsregional/pacifichighwayupgrade/summerland The RTA has no plans to remove B-doubles from the Pacific Highway.
110	The RTA should implement better monitoring systems for trucks to ensure safer driving behaviour and enforce plausible travel times for trips.	The RTA already undertakes campaigns to educate heavy vehicle operators on appropriate driving behaviour and has implemented a number of programs to improve heavy vehicle safety including Safe-T-Cam. This is an RTA initiative that aims to reduce the incidence of

Response No.	Issue	Response
		heavy vehicle speed and fatigue in an effort to prevent heavy vehicle accidents. Safe-T-Cam is an automated monitoring system that uses digital camera technology capable of reading the front number plate of heavy vehicles. On the Woodburn to Ballina Project, a heavy vehicle inspection bay is proposed adjacent to the proposed rest area to enforce regulations on trucks on the Pacific Highway. Whilst awareness training and driver responsibility are important factors of road safety, provision of a highway designed to an appropriate standard is another. This project is specifically tasked with that second goal. In doing this, the RTA must provide a solution that provides this improved safety.
111	The route chosen is longer than the existing highway and even at speeds of 110kms/hr will only save 6 minutes travel time.	One of the main aims of the upgrade is to improve road safety on the Pacific Highway. The proposed upgrade standards for the Pacific Highway project are designed to ensure that the new road will be safe at the design speed (nominally 110 km/hr). A high safety standard is achieved by additional traffic capacity, high quality road pavements, separated carriageways, wide shoulders, restricted access for pedestrians and fauna, pavements above flood levels, lighting at interchanges etc. The cumulative effect of these improvements is that the upgrade is measurably safer than the existing highway. An added benefit to the upgrade is that the travel time through this section will be reduced, however this is ancillary to the main aim of improving safety.

Appendix E

Agency submissions

Ballina Shire Council

Biodiversity

The preferred route has the greatest ecological impact of all the route options put forward by the RTA (particularly Option 2C) and divides two fragile ecosystems; the Wardell coastal heath lands and the Blackwall Range.
The ecological assessment of the short listed options found that in Section 2 of the study area Option 2A and 2B had higher ecological impacts than Option 2C. However Option 2C had higher impacts than Option 2D, 2E and Option 2F. The VMW in July 2005 confirmed this comparative assessment of the ecological impact of each option, which was attended by various government agencies and community members. As a result of this assessment, and in considering other factors, Option 2C was examined to determine if it could be realigned to reduce the ecological impact. Option 2C was subsequently realigned outside the Wardell Heath which reduced the overall impact on native vegetation and habitats. It is recognised that the modified alignment of Option 2C does fragment regionally significant fauna corridors, however this impact was reduced by locating the alignment mostly in existing cleared land which in itself is a fragmentation barrier between Wardell Heath, the Blackwall Range and the Tuckean Nature Reserve. This was considered as part of the ecological assessment of the short listed options. Mitigation measures will be carefully developed for safe fauna movement through this area as part of the concept design refinement. Further investigations since the preferred route announcement, which have included an independent peer review, have resulted in small realignments and a range of mitigation measures to reduce the ecological impact of the upgrade.
The very limited field surveys undertaken for the assessment of route options failed to locate any koalas in areas known to support high density populations. In our view, a far greater effort was needed to assess the presence, density and habitat utilization patterns of koalas in the study area before any sound decisions can be made in relation to impacts upon them.
The survey methodology undertaken was aimed at identifying threatened species and endangered population habitats and the location of endangered ecological communities within each of the options. These surveys were intended to add to the large amount of existing data held by government agencies, community members and previous ecological assessments. Given the detailed records provided by database searches, information from local Councils and members of the community in the study area, particularly with regard to koalas, it is unlikely that additional species or species groups and their distribution will be discovered that are not already known and identified. Further surveys will be undertaken on the preferred route as part of the concept design refinement and the environmental assessment.
The RTA and its consultants should undertake a robust review of the finalised Ecology Report and subsequent Preferred Route Option Report by accounting for the range of assessment matters raised by submissions. ***Such a review would more clearly demonstrate that the RTA's identification of the Preferred Route, in an ecological context, was based on correct and substantiable scientific information.*** ***Various ecological assessment reports appeared to lack scientific rigour, to contain significant ecological errors, and to oversimplify the impacts and the appropriateness of the mitigation measures to be utilised to offset the impacts of the Highway on***

threatened species and Endangered Ecological Communities. Reports contained substantial errors and drew ecological conclusions which were not justified by any scientific validity with the texts.

As a result of the reviews provided by agencies and community members early in the route selection process the ecology reports were reviewed and where necessary updated to provide a clearer understanding of the assessment process and results.

We believe that for the purposes of identifying ecological constraints for the route corridors selected to determine a preferred route, the methodology, results and interpretation of constraints is more than adequate. An environmental assessment of the preferred route would be undertaken in the future. This environmental assessment will include an ecology impact assessment for the preferred route.

In addition, the draft Phase 2 ecology report was peer reviewed by Dr Andrew Benwell, a well known and respected botanist from the North Coast region. Dr Benwell provided comments and a subsequent Addendum Report was prepared in October 2005 to address his comments. Dr Benwell provided a letter to the project team on the 1st November 2005 stating that the work undertaken was acceptable for this phase of investigations to determine a preferred route.

Following the concerns raised by Ballina Shire Council, and other concerned parties, an independent peer review of the Phase 1 and 2 Ecology investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken.

A route selection review has also been undertaken to ensure the ecology input to the route options assessment is scientifically robust.

The route selection review re-ranked the options and found that all options other than 2F had high ecological impacts. Of all the high impact options Option 2C had the highest impact.

Using these findings the project team reconsidered the preferred route selection using the criteria as previously used for the original ranking. The new ranking found that Option 2C, with modifications to reduce ecological impacts, was still considered to be the most suitable option for the preferred route.

It was determined at the VMW that precise vegetation mapping including the mapping of old growth areas was to be expanded outside the identified route corridors. This work has not been undertaken.

The VMW identified 18 key ecological issues that needed to be addressed prior to the project proceeding. The RTA's consultants concluded that 12 of the tasks have been completed, Council's view is that only 4 of the 18 issues have been addressed to any level of finality.

An amount of new data presented at the VMW was later found to be incorrect/or inaccurate and as such the validity of the resulting rankings for each route option is questioned.

During the proceedings of the VMW a number of issues, including ecology issues, were identified where further work was required to enable a better understanding of the impacts of the route options. The issues were documented in the VMW Report which is in Appendix B of the Preferred Route Report. Following the VMW the project team assessed these issues, identified the ones that were relevant to this phase of investigations and undertook further investigations to ensure the issues were addressed in the selection of a preferred route.

The Phase 1 and 2 Ecology Report was prepared to provide a comparison between the routes. The mapping of vegetation was only undertaken within the corridors of the route options identified. This did not preclude impacts such as fragmentation from being considered.

Following the concerns raised by Ballina Shire Council, and other concerned parties, an independent peer review of the Phase 1 and 2 Ecology investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken.

A route selection review has also been undertaken to ensure the ecology input to the route options assessment is scientifically robust.

The route selection review re-ranked the options and found that all options other than 2F had high ecological impacts. Of all the high impact options Option 2C had the highest impact.

Using these findings the project team reconsidered the preferred route selection using the criteria as previously used for the original ranking. The new ranking found that Option 2C, with modifications to reduce ecological impacts, was still considered to be the most suitable option for the preferred route.

The ecological consultants concentration on records of threatened fauna species occurring within each of the route options is considered to be too narrow to determine the impact of proposed route options on fauna species. Flora and fauna habitats located outside the identified routes should have been assessed as these areas would be indirectly impacted by the upgrade.

The Phase 1 and 2 Ecology Report was prepared to provide a comparison between the routes. It was not intended to be a detailed ecological impact assessment. The mapping of vegetation has been undertaken within the corridors of the route options identified and the location of mapped threatened species was limited to the study area, with fauna surveys being undertaken on the route option alignments. This did not then preclude impacts such as fragmentation from being considered.

As mentioned in the previous response a review of the ecological investigations of the route options has been undertaken and this includes new terrestrial vegetation mapping of the entire study area.

The RTA's published reports also exclude reference to and analysis of threatened fauna species records provided to them during the course of the project. The Friends of the Koala supplied 139 Koala records prior to the finalisation of the September flora and fauna report. They were not included nor do they appear to have been analysed for the finalised September 2005 Report.

The relative importance of the 3 Koala populations affected by the preferred route is not detailed in the published assessment hence the reasoning behind the conclusions that have been drawn by the RTA is not evident.

Koala data was provided to the Project ecologists prior to the submission of the Phase 1 and 2 Ecology Report. However while the data was reviewed, there was insufficient time to include koala sighting details on the map. However, the information was taken into consideration to determine the impact on koalas (see Table 3.7 and 4.2 of the ecology report) and does not alter any of the conclusions drawn from the ecological investigations undertaken so far.

It is unclear from the documents that the RTA's consultants have completed a primary task to identify whether the proposed upgrade is likely to pose the potential for significant impact and hence whether a Species Impact Statement is required.

Council is concerned about the accuracy of detailed assessment techniques to detect threatened flora and fauna species within the preferred route options and the subsequent information derived from these surveys.

The primary purpose of the ecology reports were to assess the potential ecological impact at a level that allows a robust comparison between the different route options. There was no intention that the ecology reports would form an environmental assessment to determine if a Species Impact Statement is required.

To date the RTA has undertaken the most detailed level of survey effort ever undertaken for this stage of route selection on the Pacific Highway Upgrade projects in recognition of the high biodiversity issues associated with the study area.

The field surveys which formed part of the ecological assessment of the short listed options were undertaken generally in accordance with DECC guidelines for environmental impact assessment. The Phase 2 Ecological Assessment included an appendix listing the survey methods and where these surveys varied from the DECC guidelines. At this stage of the process it is considered acceptable to vary from the DECC guidelines

It is important to note that the draft Threatened Biodiversity Guidelines were only placed on public exhibition on 10 December 2004 for public comment until 30 April 2005 and that these guidelines have not been finalised.

It is agreed that some surveys have been undertaken outside the optimal time for particular species or species groups for this initial investigation. It is also agreed that the unusual seasonal conditions have affected findings, but the ecological assessment is required irrespective of the current climatic conditions. However, based on the climate records for the survey time the season was appropriate for some species.

Further surveys have now been undertaken on the preferred corridor in order to seasonally target specific species, addressing this issue.

Given the detailed records provided by database searches, information from local Councils and members of the community, it is unlikely that additional species or species groups and their distribution will be discovered that are not already known and identified.

As such the project team believes that the surveys and the subsequent information derived from them are acceptable for the selection of a preferred route. It should also be noted that an ecological assessment will be undertaken on the concept design in the environmental assessment phase of investigations.

DECC fine scale mapping should have been used. Due to using PATN analysis major vegetation communities were either unmapped and/or incorrectly mapped.

DECC provided extensive datasets to the project team at the beginning of the project. This included NPWS CRAFTI (Upper North East CRA). This data and mapping was used as part of the ecological assessment of the short listed options.

PATN is a statistical tool that is used to validate or confirm vegetation communities that have been recorded from field surveys and is used to assist in minimising the subjective nature of interpretation of vegetation communities. It is therefore a rigorous, objective, benchmark scientific method and is often required for DECC vegetation survey contracts.

For the purposes of identifying ecological constraints for the route corridors selected, the methodology, results and interpretation of constraints based on the PATN analysis is more than adequate. This view is supported by the peer review undertaken by Dr Andrew Benwell.

The independent peer review found that the route selection ecological assessments should have made more use of Aerial Photo Interpretation, ground-truthing and existing mapping. The independent peer review team undertook new terrestrial vegetation mapping for the entire study area using Aerial Photo Interpretation, ground-truthing and existing mapping. The review team identified and accurately mapped Endangered Ecological Communities and regionally significant vegetation communities.

The RTA's reports do not appear to include reference to any scientific literature review of the known ecological impacts of highway construction on the environment. The inclusion of such information would have provided a more demonstrably rigorous basis to support the conclusions drawn about the impact of road construction on flora and fauna species.

The ecology reports were prepared with reference to many pieces of scientific literature as evidenced by the reference lists and the detailed methodology outlined in both the Phase 1 Ecology Report and the Phase 2 Ecology Report.

Concept Design

Council's services, particularly water and sewerage for Wardell, may be impacted. It is unlikely that any detailed information will be available at this stage. It would likely require more design information for assessment of impact and relocation effects.

The location of services such as water, sewerage, power and telecommunications in relation to the preferred route was identified as an input to the concept design. The effect on all services will be the subject of further consultation and agreement with the services and utility providers.

There is no further information that can be offered regarding the impact of the preferred route option to the local road network. Council received advice from the RTA's consultants that a meeting will be scheduled for January 2006 to discuss the matter. At this stage a date has not been established.

Council officers were advised at the meeting with the RTA and Hyder Consulting on 8 March 2006 that a meeting would be arranged to discuss traffic and transport matters. This meeting was held on 10 April 2006. At this meeting information concerning current and future traffic volumes and traffic composition was discussed together with design matters regarding proposed interchanges; local road crossings of the new roadway; possible changes to local traffic movements; and, service roads to provide an off-highway alternative for local traffic.

Council was advised of the options for interchanges and intentions for local road arrangements at the time of the community consultation on this issue in October 2006. No comment was received from council following this consultation.

Consultation

Council is disappointed in the clarity of communication between the RTA and Council during the highway planning process to date. It could be improved by clearer and more focussed response to submissions.

The provision of information by all the Councils within the study area has been of assistance during the project to date. The RTA has met with Richmond Valley, Lismore and Ballina Council officers and Councillors through the route selection and preferred option selection phases of the project. Additional meetings have been arranged to resolve issues and every effort has been made to keep Councils informed. While all issues raised in Council submissions have been dealt with either in writing or by face to face meetings, there are some instances where issues have not been resolved to the satisfaction of all parties concerned.

Hydrology

It is important that the RTA's flood work is accurate and directly comparable to Ballina Council's flood work (Ballina Flood Study Update and data and the Wardell-Cabbage Tree Island Floodplain Management Study and Plan) with respect to assessing impacts of any future highway. For example, the RTA has assessed their highway options to limit impacts on existing flooding by not more than 50mm, however their base data (the 'course' model) is not calibrated to read absolute flood levels to that accuracy.

Flood work undertaken by Brown Consulting (on the Richmond River flooding) and WBM Oceanic's (on the Duck Creek/Emigrant Creek Flooding) is accurate and comparable with Council's flood work. Flood modelling undertaken by Brown Consulting uses the same survey and roughness model used for the Wardell-Cabbage Tree Island Study and survey data used for the Ballina Flood Study. The current model achieves a better result in terms of matching historical flood levels compared to the Wardell and Cabbage Tree Island Floodplain Management Study and Brown Consulting believes that other models it used (SOBEK and ESTRY) provide far superior results to the Wardell & Cabbage Tree Island Study. The assumption that Brown Consulting's model should match the previous flood study or the Floodplain Management Plan is not supported. A finer grid model, being used for the concept design, was checked against 2 floods of record between Broadwater and Wardell and achieved a better match to the flood of record (within 1-10mm) compared to the RMA2 model used previously in this area. Although the Department of Natural Resources (DNR) and Ballina Council were asked to provide historical flood models developed for early studies to further calibrate the model this information does not appear to be available. Neither DNR, Council or their respective consultants have copies of those models. The RTA will ensure that its consultants will maintain contact with Ballina Shire Council in any further flood work to be undertaken.
Ballina Shire Council is currently undertaking a Ballina Flood Study Update and data which is now available should be included. Also, Council is nearing completion with the Wardell and Cabbage Tree Island Floodplain Management Study and Plan. Part of this study will include a reassessment and confirmation of development controls for fill heights and building heights for Wardell and Cabbage Tree Island.
The hydrological and hydraulic modelling undertaken for the route options assessment process formed the basis for the flooding impact assessment of the preferred route. Following the announcement of the preferred route and reviewing community comment on it, there were further refinements of the route based on the results of additional environmental and engineering investigations. Following this the RTA undertook further hydraulic and hydrological modelling of the route. The RTA will ensure that any information that Ballina Shire Council can provide concerning the Ballina Flood Study Update and the Wardell and Cabbage Tree Island Floodplain Management Study and Plan will be addressed in any future hydrological assessments.

Richmond Valley Shire Council

Property

Concerned about that status of the old Pacific Highway once the new highway is opened.
The remaining sections of the existing highway would become part of the local road network under the management of the local council. The RTA would discuss this with the relevant Councils prior to the handover.
Concerned about impact on land under Councils care and control
Individual negotiations would be undertaken with all directly affected property owners, including Council, to determine potential impacts on properties, to identify appropriate mitigation measures and/or compensation. Property required for the project would be acquired by the RTA in accordance with the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991*.

Transport

Need for development of integrated regional transport plan to assess the impact of the preferred route on regional transport.
The RTA, as an agency of the NSW Government, is required to carry out the relevant aspects of the Government's policy in relation to roads and transport. Improving the safety of the Pacific Highway is a top priority for the RTA, and it is using whatever means that are at its disposal to improve the safety record of this section of the highway. In doing this, the RTA must provide a solution that provides this improved safety, whilst at the same time integrating the design into the local environment, community and landscape in the best manner possible.

Department of Environment and Climate Change (DECC)

Biodiversity

DECC recommends that potential impacts on the endangered Emu population of the NSW North Coast Bioregion be identified and mitigations discussed since recent records of this species have been concentrated between Coffs Harbour and Ballina (NSW Scientific Committee Final Determination 2002).
The RTA is aware of the endangered Emu population of the NSW North Coast Bioregion and Emus have been sited in Broadwater National Park. As part of the ongoing environmental investigations and the environmental assessment of the preferred route appropriate mitigation measures are being developed to minimise project impacts on emu populations within the study area.
The preferred route has the potential to adversely impact on the biodiversity and landscape ecological integrity of the study area, especially in the areas south of Woodburn to north of McDonalds Creek near Broadwater NP and the area from Broadwater village to Coolgardie Road, north of Wardell.
The development of route options is complex with many competing constraints which need to be identified and assessed. These constraints were broadly grouped into social, economic, environmental and engineering. The preferred route selection process included an assessment of constraints and the selection of the route option that provided the best balance across all areas including environmental constraints. The RTA is aware of the environmental value of the area and the preferred route concept development process has aimed to integrate the highway into the natural environment to minimise impacts on threatened species and communities. Prior to construction of the project, the RTA would undertake an environmental assessment of the preferred route. Appropriate mitigation measures have been designed and and would be implemented to avoid disturbance and provide opportunities for fauna movements across the new highway.
The preferred route has the potential to encroach on Broadwater National Park through increased edge effects (pest plant and animal incursions and entry of road surface pollutants), habitat loss and fragmentation, and bisection of the Broadwater Regional Corridor. The preferred route should be located at least 100 metres from the boundaries of Broadwater National Park. ***Widening of the existing highway through Broadwater NP would remove parts of an EEC - Swamp Sclerophyll Forest on Coastal Floodplains, and tracts of Banksi-Callitris dry heathy woodland. There is potential to reduce the availability of habitat trees for a range of fauna.***
The existing Pacific Highway currently bisects Broadwater National Park. The preferred route will follow this alignment and will include a range of mitigation measures that would be developed to minimise the impact of the highway. The mitigation measures could include fauna fencing to minimise fauna access to the highway and human access to the National Park, underpasses and/or overpasses to maintain fauna movements and better drainage to reduce the impact of road runoff in the national park. The exact amount of native vegetation impacted by the preferred route has not been finalised and will depend on further investigations regarding the final location of local access roads, interchanges, road drainage and ecological mitigation measures. A meeting was held with DECC in late 2006 to discuss the impacts on Broadwater National Park and discuss mitigation measures and concept design features. Further consultation will be undertaken with DECC with regards to the impact on Broadwater National Park

DECC has previously raised issues relating to the rigour or completeness of the biodiversity assessments for the route selection process. These issues have remained unaddressed or inadequately addressed in the PRR

As a result of the reviews provided by agencies and community members early in the route selection process the ecology reports were reviewed and where necessary updated to provide a clearer understanding of the assessment process and results.

We believe that for the purposes of identifying ecological constraints for the route corridors selected to determine a preferred route, the methodology, results and interpretation of constraints is more than adequate. An environmental assessment of the preferred route would be undertaken in the future. This environmental assessment will include an ecology impact assessment for the preferred route.

In addition, the draft Phase 2 ecology report was peer reviewed by Dr Andrew Benwell, a well known and respected botanist from the North Coast region. Dr Benwell provided comments and a subsequent Addendum Report was prepared in October 2005 to address his comments. Dr Benwell provided a letter to the project team on the 1st November 2005 stating that the work undertaken was acceptable for this phase of investigations to determine a preferred route.

Following the concerns raised by Ballina Shire Council, and others concerned parties, an independent peer review of the Phase 1 and 2 Ecology investigations, reported in the 'Flora and Fauna Assessment of Options Report', has been undertaken.

A route selection review has also been undertaken to ensure the ecology input to the route options assessment is scientifically robust.

The route selection review re-ranked the options and found that all options other than 2F had high ecological impacts. Of all the high impact options Option 2C had the highest impact.

Using these findings the project team reconsidered the preferred route selection using the criteria as previously used for the original ranking. The new ranking found that Option 2C, with modifications to reduce ecological impacts, was still considered to be the most suitable option for the preferred route.

It was determined at the VMW that precise vegetation mapping including the mapping of old growth areas was to be expanded outside the identified route corridors. This work has not been undertaken.

The VMW identified 18 key ecological issues that needed to be addressed prior to the project proceeding. The RTA's consultants concluded that 12 of the tasks have been completed, Council's view is that only 4 of the 18 issues have been addressed to any level of finality.

An amount of new data presented at the VMW was later found to be incorrect/or inaccurate and as such the validity of the resulting rankings for each route option is questioned.

During the proceedings of the VMW a number of issues, including ecology issues, were identified where further work was required to enable a better understanding of the impacts of the route options. The issues were documented in the VMW Report which is in Appendix B of the Preferred Route Report. Following the VMW the project team assessed these issues, identified the ones that were relevant to this phase of investigations and undertook further investigations to ensure the issues were addressed in the selection of a preferred route.

The Phase 1 and 2 Ecology Report was prepared to provide a comparison between the routes. As such the mapping of vegetation was only undertaken within the corridors identified. This did not preclude impacts such as fragmentation from being considered.

The independent peer review found that the route selection ecological assessments should have made more use of Aerial Photo Interpretation, ground-truthing and existing mapping. The independent peer review team undertook new terrestrial vegetation mapping for the entire study

area using Aerial Photo Interpretation, ground-truthing and existing mapping. The review team identified and accurately mapped Endangered Ecological Communities and regionally significant vegetation communities.

The exclusion of steps from the ecological impact assessment process prior to the selection the preferred route, especially of Option 2C, is of significant concern to DECC. This is despite assurances made on page 127 of the PRR that more detailed ecological assessments will be undertaken during the concept design phase of the project.

Another deficiency include avifauna surveys being undertaken only in the southern and western sections of the study area and sampling that did not capture interseasonal variation in the distribution and abundance of taxa, especially of migratory and nomadic species in and off the preferred route. These deficiencies have weakened the ability of the surveys to provide an adequate basis for the assessment of potential impacts on fauna within and outside the preferred route, especially regarding options 1C and 2C but also for proposed widening activities along Option 3B and through Broadwater NP.

DECC notes that there were a number of deficiencies in Geolyse's sampling of vegetation in the study area such as adequate stratification, apparent absence of a data collection protocol, and lack of sampling on land situated outside the proposed route options. These shortcomings have made the drawing of valid conclusions regarding the conservation significance of vegetation communities on the preferred route a difficult, if not, speculative exercise.

Other issues that have reduced the rigour of the vegetation impact assessment include uncertainty over the degree of field verification of mapped communities and a lack of consideration of the impact of the preferred route on vegetation condition as opposed to simply area of vegetation affected.

The rigour of the fauna survey and assessment component of the project is of concern. DECC advised that all terrestrial fauna surveys should comply with the DECC Working Draft of Threatened Species Survey and Assessment Guidelines (November 2004). It appears that this has not occurred for all surveyed taxa. There has been limited survey effort in Wardell Heath, not all stratification units were sampled and the level of replication of sampling effort was less that the specified amount for some taxa.

The primary purpose of the investigations was to identify major ecological constraints and characteristics of the different route options. At this stage it is not practical or appropriate to undertake exhaustive flora and fauna surveys for each of the different route options, or indeed the entire study area. Instead, the methodology used has utilised flora and fauna field surveys in key areas (where access was available) to supplement existing ecological information and assisted with habitat assessment for threatened species.

The field surveys which formed part of the ecological assessment of the short listed options were undertaken generally in accordance with DECC guidelines for environmental impact assessment. The Phase 2 Ecological Assessment included an appendix listing the survey methods and where these surveys varied from the DECC guidelines. At this stage of the process it is considered acceptable to vary from the DECC guidelines

It is important to note that the draft Threatened Biodiversity Guidelines were only placed on public exhibition on 10 December 2005 for public comment until 30 April 2006 and that these guidelines have not been finalised.

It is agreed that some surveys have been undertaken outside the optimal time for particular species or species groups for this initial investigation. It is also agreed that the unusual seasonal conditions have affected findings, but the ecological assessment is required irrespective of the current climatic conditions. However, based on the climate records for the survey time the season was appropriate for some species.

Given the detailed records provided by database searches, information from local Councils and

members of the community, it is unlikely that additional species or species groups and their distribution will be discovered that are not already known and identified. Further surveys have been undertaken on the preferred corridor since the announcement in order to seasonally target specific species to address this issue. As such the project team believes that the surveys and the subsequent information derived from them are acceptable for the selection of a preferred route. It should also be noted that further ecological assessments will be undertaken on the preferred route in the environmental assessment phase of investigations.
Concerned about the use of PATN to determine the vegetation communities. DECC fine scale mapping should have been used. Due to using PATN analysis major vegetation communities were either unmapped and/or incorrectly mapped. ***The mapping scheme applied for the project describes vegetation communities based on understorey floristic characteristics, rather than the accepted convention of overstorey floristic dominance.***
DECC provided extensive datasets to the project team at the beginning of the project. This included NPWS CRAFTI (Upper North East CRA). This data and mapping was used as part of the ecological assessment of the short listed options. PATN is a statistical tool that is used to validate or confirm vegetation communities that have been recorded from field surveys and is used to assist in minimising the subjective nature of interpretation of vegetation communities. It is therefore a rigorous, objective, benchmark scientific method and is required for DECC vegetation survey contracts. For the purposes of identifying ecological constraints for the route corridors selected, the methodology, results and interpretation of constraints based on the PATN analysis is more than adequate. This view is supported by the peer review by Dr Andrew Benwell. The independent peer review found that the route selection ecological assessments should have made more use of Aerial Photo Interpretation, ground-truthing and existing mapping. The independent peer review team undertook new terrestrial vegetation mapping for the entire study area using Aerial Photo Interpretation, ground-truthing and existing mapping. The review team identified and accurately mapped Endangered Ecological Communities and regionally significant vegetation communities.
Some concerns were raised regarding information contained within the Preferred Route Report. These include: ▪ ***The PRR should also consult a number of DECC recovery plans prepared for threatened species*** ▪ ***The PRR should include a discussion of the biogeographical significance of the study area and potential impacts of the proposal on centres of vertebrate endemism.*** ▪ ***The PRR should consider the potential impact of the proposal on aquatic and riparian ecosystems, including SEPP14 wetlands, situated along and downstream of the preferred route*** ▪ ***The PRR does not list nine species of regional conservation significance that could be affected by the preferred route*** ▪ ***The PRR should define ecological constraints and explain how they have been used to assess the performance of one route option relative to another. This should include a discussion of the application of weightings to performance outcomes.*** ▪ ***The PRR does not identify the location or address mechanisms to mitigate impacts associated with the severance of four regional wildlife corridors and several areas of key habitat which are important links for fauna movement across the local and***

regional landscape.

- ***The PRR does not distinguish between those species listed as threatened under the Threatened Species Conservation Act 1995 and species listed under the Rare or Threatened Australian Plants (ROTAP).***
- ***Species of migratory birds subject to JAMBA and CAMBA protection should be identified and potential impacts discussed in the PRR.***
- ***The PRR should consider the influence of key threatening processes (KTPs) under Schedule 3 of the TSC Act.***
- ***The PRR does not evaluate the indirect impact of the preferred route on EECs nor does it propose measures to mitigate this impact.***
- ***A total of 26 threatened fauna species have been omitted from Table 7-12 of the PRR.***
- ***DECC recommends that the PRR be reviewed to consider the potential impact of the preferred route on the full complement of threatened and regionally significant fauna, especially in areas within and near Options 2C and 1C.***
- ***The PRR should include lists of the 13 ROTAP species that occur within the study area in addition to plant species listed under the TSC Act and indicate which are termed threatened under the TSC/EPBC Acts and classified under the ROTAP system. Table 7-11 should be modified to reflect this distinction.***
- ***The omission of consideration of the preferred route's potential impacts on additional species and their key habitats questions the assessment of ecological constraints and substantially weakens the overall evaluation of the ecological impacts of the project.***

The Preferred Route Report was prepared to describe the selection and assessment of the short listed options and the subsequent development and refinement of the preferred route. It was not intended to provide a full ecological assessment of the short listed options. The Phase 2 Ecological Report (which formed an appendix to the Route Options Development Report) should be referred to for detailed ecological information regarding the short listed options, including the preferred route.

Further surveys have now been undertaken on the preferred corridor in order to seasonally target specific species and a detailed ecological impact assessment will be prepared in accordance with DECC guidelines as part of the environmental assessment for the preferred route.

There are a number of errors in the Preferred Route Reports description of vegetation communities of the study area. Community 2 should be referred to as Paperbark-Swamp Mahogany Wet Heathy Woodlands. Community 6 is Forest Red Gum-Tuckeroo Riperian Emergent Closed Forests. The Coastal Saltmarsh community has been omitted.

The vegetation communities are named with regard to the dominant species. It is agreed that the Mahogany species referred to in Community 2 is Swamp Mahogany, and the Red Gum species referred to in Community 6 is Forest Red Gum. Future vegetation community names will contain the full species name.

A total of 7 endangered ecological communities were considered as occurring within the route options. These endangered ecological communities included Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions. The preferred route does not impact on this EEC and as such was not mentioned in the PRR.

There is potential for the proposed crossing of Tuckombil Canal south of Woodburn to degrade a Swamp Sclerophyll Forest EEC and reduce the quality of water entering SEPP14 wetlands located downstream along the Evans River and in Bundjalung NP.

The preferred route does impact on some endangered ecological communities near the Tuckombil Canal. The preferred route alignment was located at the edge of these native vegetation patches to limit the impact. Measures to minimise impacts on water quality in the Tuckombil Canal will be incorporated into the road and drainage design for the preferred route.
The engineering and designs for all bridges and culverts must fully consider all environmental impacts associated with their construction and operation, the feasibility and maintenance of any mitigation measures should also be considered when finalising the designs for the preferred route.
Agreed. A full environment assessment would be undertaken for the preferred route. This will include developing mitigation measures to be incorporated into the design of the bridges and culverts, and mitigation measures for the construction and operation of the highway.
Fauna crossings should be considered at sites within wildlife corridors such as east of Cooks Hill and south of Lang Hill.
Mitigation measures, such as fauna crossings have been developed as part of the concept design and will be developed as part of the environmental assessment for the preferred route.
The ecological report has identified only five EECs when nine exist in the study area.
The study area does contain 9 Endangered Ecological Communities. However, the ecological report referred to in the submission, the Phase 2 Ecological Report, details ecological information about the short listed options and not the entire study area. The short listed options potentially impact on 7 Endangered Ecological Communities: ▪ Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions ▪ River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions ▪ Subtropical Coastal Floodplain Forest of the NSW North Coast Bioregion ▪ Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner Bioregions ▪ Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions ▪ Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion ▪ Coastal saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions.
It is critical that the feasibility of mitigation measures to address specific issues and impacts is assessed and the results of this assessment considered through the route development process.
Specific mitigation measures have been developed during the concept design refinement and will be developed as part of the environmental assessment of the preferred route. The feasibility of these mitigation measures will be continuously assessed and refined as the project progresses.
The PRR should discuss impacts of noise generated by new highway traffic on grassland birds as the impact zone can extend for more than 600 metres from the source. This should be considered in the development of mitigative measures.
Impacts on all native wildlife will be assessed as part of the environmental assessment for the preferred route.

Indigenous Heritage

The preferred route is likely to directly impact on the presence of a number of highly significant scarred trees located in the Back Channel Road area at Bagotville. Other scarred trees may occur at other sites along or near the preferred route or within its footprint. There are two Aboriginal burial sites located within the footprint. There is high potential for the occurrence of a number of sites of significance to the Jali people in or near the northern section of Broadwater NP.

Page 116 does not mention what the appropriate mitigation measures for Aboriginal heritage are or how or where they would be implemented.

The draft Aboriginal Heritage Assessment report (Adise, May 2005) identified the presence of scarred trees and other sites of cultural, anthropological and archaeological significance to Aboriginal people in the study area. Field investigations were undertaken with the participation of a representative of the Jali LALC and matters of concern to Aboriginal people have been discussed at Aboriginal Focus Group meetings in 2005-2006. These details were summarised in the PRR.

During the preparation of the environmental assessment further field investigations undertaken where required, in accordance with published DECC guidelines. Throughout the concept design appropriate mitigation measures have been identified where necessary and would be further refined during the environmental assessment. A mitigation strategy will be prepared in direct consultation with Aboriginal stakeholders and DECC's Aboriginal Heritage Unit and will be addressed in detail in the Environmental Assessment documentation. If the project is approved these measures will be included in a Cultural Heritage Management Plan.

Comments are made in the PRR indicating direct consultation with the Jali Local Aboriginal Land Council (LALC) may have occurred, [but] this is not implicitly stated in Section. 7.2.7.

The draft Aboriginal Heritage Assessment Report (Adise Pty Ltd, May, 2005) which was referenced in the Preferred Route Report, describes the process of involvement and consultation with the Jali LALC as well as with Elders and knowledge-holders. Since that report was prepared there have been further meetings with the Jali LALC. The Aboriginal Focus Group was established to facilitate consultation with all Aboriginal people in or near the study area.

Section 7.2.7 of the Preferred Route Report only contained a summary of the contents of the draft report.

Noise

DECC is concerned that the Community Noise Burden (CNB) methodology used to evaluate the noise impacts from the various route options do not accurately reflect the extent of actual noise impacts that will be experienced by new noise receivers. The concept design for the preferred route must explore all options for noise mitigation to reduce noise impacts and in particular, impacts on new receivers, who currently experience low ambient noise levels, for both the construction and operation stages of the project.

As part of Hyder's noise assessments, investigations into the impact of upward changes in noise level experienced by new receivers, i.e. in the year of opening, were undertaken. These were documented in the Route Options Development Report Stage 1 (Hyder ref. 5004-NS02500-NSR-11, dated 14 June 2005). The impact was assessed following the Community Noise Burden (CNB) methodology, using a documented dose-response relationship for increase in traffic noise level.

CNB is an effective method for determining the relative noise impacts between the route options. It is important to note that this method also takes into account the benefits achieved

across the community in terms of reducing road traffic noise levels. These 'noise change' CNB assessments were revised for each route modification, with the outcomes tending to support the findings of the 'steady-state' noise assessments. Consequently, it was not considered to be of benefit to report these findings in the Preferred Route Submissions Report. Further investigations to be undertaken as part of the environmental assessment will consider all reasonable and feasible options for mitigation of road traffic noise in accordance with DECC and RTA guidelines. Construction noise impacts would be controlled in accordance with these guidelines through implementation of noise and vibration management plans, the requirements of which will be investigated and detailed in the environmental assessment.
In Section 7.2.6 Noise, DECC notes that the impacts of the preferred route north of Wardell is expected to be worse than if the current highway was not upgraded, predominately due to changing to a noisier pavement and that Table 7.7 - Predicted numbers of noise affected dwellings - indicates that in Section 2 of the preferred route 114 residences are predicted to experience a noise increase as a result of the project. Whilst DECC acknowledges that detailed noise and vibration assessments are yet to be undertaken, consideration should be given to the use of quieter pavement surfaces along the preferred route to reduce the need for further noise mitigation measures such as noise barriers which have been identified in the PRR as potentially causing adverse effects to visual amenity."
Investigations to be undertaken as part of the environmental assessment will consider all reasonable and feasible options for mitigation of road traffic noise in accordance with DECC and RTA guidelines. Adoption of a particular noise mitigation option would follow a cost/benefit analysis for all design issues, e.g. acoustic efficacy, durability and maintenance.
It is important to ensure that the urban design reflects the requirement for effective noise mitigation and that reasonable and feasible mitigation measures are not compromised by urban design constraints.
During the environmental assessment of the project, details regarding any necessary noise mitigation measures will be developed in accordance with DECC and RTA requirements. It may be possible to incorporate noise mitigation measures as part of a design approach to integrate them into the surrounding landscape. Noise mitigation measures would be considered in relation to the RTA's *Pacific Highway Urban Design Framework – urban design guidelines for the SH10 from Hexham to Tweed Heads.*
Whilst DECC acknowledges that detailed noise and vibration assessments are yet to be undertaken, consideration should be given to the use of quieter pavement surfaces along the preferred route to reduce the need for further noise mitigation measures such as noise barriers which have been identified in the PRR as potentially causing adverse effects to visual amenity.
In the noise assessment to be undertaken for the preferred route, consideration will be given to various design aspects including the alignment of the new roadway, height of the roadway above ground level, design speeds, and pavement surfaces as they contribute to various noise levels within a noise catchment area. A range of noise mitigation options would be considered if noise levels at noise-sensitive receptors exceeded DECC criteria for new roads.

Department of Lands

Property

All Crown public roads affected by the preferred route should be acquired by the RTA under the provisions of the Land Acquisitions (Just Terms Compensation) Act 1991 prior to the commencement of any works.
Clause 56 of schedule 2 of the *Roads Act 1993* dedicated all Crown Roads as public road so that the RTA uses Crown Road (it does not acquire Crown Road) for its projects. For projects involving Controlled Access Roads and Public Roads, the RTA will usually ensure that the Local Council is the Roads Authority for all new road works by gaining concurrence to transfer to Council under Section 151 of the Roads Act all such parcels of Crown Road. For projects involving Freeways (including tollways and motorways) the RTA gains title of such parcels of Crown Road upon declaration as Freeway.
The new bridge proposed across the Richmond River north of Broadwater will presumably entail structures being placed on or in the bed or banks of the River. Land below the Mean High Water Mark of the Richmond River is Crown land (comprising part Reserve 56146 from Sale or Lease Generally (notified 11 May 1923)) under the control of the Department of Lands. Should this area be affected by the preferred route it should be acquired by the RTA under the provisions of the Land Acquisitions (Just Terms Compensation) Act 1991 prior to the commencement of any works.
If any part of the Richmond River or its banks which comprises Crown land were required for the preferred route it would be Compulsorily Acquired under the *Land Acquisition (Just Terms Compensation Act 1991*. The amount of compensation for the Crown Land would be determined by the NSW Valuer-General
The issue of Native Title should be addressed by the RTA in the acquisition of Crown lands.
Areas of Crown land within the study area which were subject to a Native Title claim were identified. As a result, Option 1C was realigned to the west to avoid this Crown land parcel. No other areas of Crown land subject to Native Title claim would be affected by the preferred route.

Department of Primary Industries

Biodiversity

DPI (AHPU) wish to flag the issue of compensatory habitat for potential destruction of aquatic habitat along the Richmond River and potential impacts on Tuckombil Canal.
During the ecological assessment for the environment assessment process, contact will be maintained with DPI regarding any potential impacts on aquatic habitat along the Richmond River and Tuckombil Canal. Any requirement for compensatory habitat will be established and the RTA would arrange further meetings with DPI to reach an acceptable outcome.

Jali Local Aboriginal Land Council

Biodiversity

The preferred route impacts on the biodiversity of the whole area, sensitive environmental areas, core habitat and threatened species. We are horrified to see that the RTA is prepared to unnecessarily destroy rare ecological systems in their endeavour to upgrade this highway.
The development of route options is complex with many competing constraints which need to be identified and assessed. These constraints were broadly grouped into social, economic, environmental and engineering. The preferred route selection process included an assessment of constraints and the selection of the route option that provided the best balance across all areas including environmental constraints. The RTA is aware of the environmental value of the area and the preferred route concept development process aims to integrate the highway into the natural environment to minimise impacts on threatened species and communities. Prior to construction of the project, the RTA would undertake an environmental assessment of the preferred route. Appropriate mitigation measures would be designed and implemented to avoid disturbance and provide opportunities for fauna movements across the new highway.
There seems to be a real lack of ability on the RTA's behalf to communicate effectively and find some reasoning through the process
The consultation process undertaken was consistent with all the Pacific Highway upgrade projects to enable the community to become informed and to inform the project team of their views and opinions. The CLG was formed to enable community representatives to have input into the project and that the project team could draw on the widest possible range of community interests and views. The CLG included representatives of local residents, property owners, local businesses and those concerned about the natural environment, flooding and sugar cane and a range of other issues.
Jali LALC was always receptive to a fair, open and transparent process. A meeting with Jali LALC to discuss the RTA's intentions prior to the announcement in December 2005 could well have proven more fruitful than the RTA may of thought. ***Jali LALC was always prepared to negotiate with the RTA to devise a better route that may of included some Jali LALC owned land and produce a better result for people of this area. This is something that we were prepared to put to the Jali LALC members for their consideration.***
During the course of the route options development and selection of the preferred route there have been a number of meetings and discussions with members of the Jali LALC. Jali LALC representatives were members of the CLG and the Aboriginal Focus Group. The RTA was certainly made aware of the opposition of Jali LALC members to option 2D near Cabbage Tree Island and Wardell and was sensitive to Jali LALC's ownership and cultural significance of an extensive area of land to the west of the Richmond River and Wardell. Submissions were received from several property owners, including the Jali LALC, requesting alignment changes. The project team reviewed these alignment change requests in accordance with results of additional fieldwork, existing constraints (eg, ecology, heritage, agriculture, flooding) and using the selection criteria that were applied to selecting the entire preferred route.
Since the announcement of the preferred route in December 2005, the Aboriginal Community and Jali Land Council have been subjected to much anger and angst by those affected by the route and by some members of the Community Liaison Group. This choice has not only physically split, what is a close community, but has also split

the community into groups or factions, causing disharmony.
It is not the intent of the RTA to create divisions in the community. It is understood that this can happen and that the route selection process does have an impact on the community. The project team has undertaken a rigorous and transparent route selection process with considerable community input in order to select the preferred route. Affected landowners have had the opportunity to meet with the project team members to discuss individual property concerns. The consultation process allows for all of the community to present their views, concerns and issues to the project team for consideration. The RTA does not set out to divide the community and would welcome any suggestions to improve the consultation process. The responsibility for selecting a preferred route is with the RTA and the Minister for Roads.
The RTA has now ceased the CLG and has basically left this mess of its own accord. We are not convinced that keeping the community out of the next stage is again the best method of operation.
The purpose of the CLG was to assist in the development and selection of route options and to participate in the selection of the preferred route. While the CLG will not be required to meet formally again there will be many other opportunities to inform the community of progress with the project. There has been continued consultation on specific matters such as the location of interchanges, crossings of the new highway and other issues.

Indigenous Heritage

Concern was raised that the RTA is prepared to unnecessarily destroy Indigenous cultural heritage sites in their endeavour to upgrade this highway and that there were many Indigenous cultural heritage issues that were not considered in the selection of the preferred route.
Investigations to date by Jacqueline Collins (Adise Pty Ltd) and consultation with traditional owners in the study area have endeavoured to identify the location of sacred sites and areas of importance. The route selection process took into account many different factors including the impact on Aboriginal cultural heritage. There will be ongoing contact with Aboriginal people and with DECC to ensure that appropriate management measures are undertaken to ensure that sites and areas of importance are protected and conserved.

Richmond River County Council

Concept Design

The preferred route will impact substantially on Richmond River County Council's business infrastructure and operational procedures.
The location of services such as water, sewerage, power and telecommunications in relation to the preferred route have been identified and input to the initial concept design. The effect on all services will be the subject of further consultation and agreement with the services and utility providers.

Hydrology

The proposed construction will cross the Tuckombil Canal approximately 700 metres from the Highway Bridge. This will also cross the Woodburn Town Drain, which services Woodburn by removing residual floodwaters and storm water. This site is also a part of the controlled tidal flushing program. Council has also been engaged in consultation with the Woodburn and greater mid Richmond communities to develop a long term management plan for the Tuckombil Canal.
Extensive flood modelling of the route options was undertaken as part of the route selection process. The flood modelling consisted of a two dimensional hydraulic model that covered the majority of the floodplain between Coraki and Ballina. This represents the most comprehensive and complete model that has yet been carried out for the Richmond River floodplain in this area. Comparison of predicted results against past floods demonstrated that results were not contradictory. This approach provided results that were of an order of accuracy sufficient to provide input to a comparative analysis between the initial route options to enable the preferred route to be identified. Additional analysis was carried out to determine the increase in inundation times across the floodplain and this analysis demonstrated that the maximum increase in inundation times was less than half a day, and generally much less than this. This modelling was updated following the announcement of the preferred route and throughout the concept design to ensure the hydraulic modelling reflects the latest design. The flood model was last updated in February 2007 to reflect all changes to the concept design since the preferred route announcement. Where the concept design lies in the floodplain the level of the road will be raised on an embankment to provide flood immunity against the 1 in 20 year flood. Viaducts and culverts would be provided within the proposed embankments to convey floodwaters under the road.
A great deal of work and negotiation with landholders and State agencies has been undertaken to facilitate tidal flushing programs together with significant financial investment. The upgraded highway must accommodate and if possible enhance the tidal flushing programs run by local authorities.
The concept design has been developed ensuring designs are compatible with existing water infrastructure and activities to ensure that they continue to operate efficiently. Further consultation has been undertaken with agencies and property owners to ensure that the concept design integrates with the existing infrastructure.
At this stage the flood modelling can be described as being 'coarse'. It is expected that the RTA will undertake rigorous flood modelling in the future for a preferred route option, which will include a level of detail not included in the existing work to date. ***It is essential that close consultation during both planning and construction phase is***

maintained with the Richmond River County Council to mitigate adverse impacts on community flood mitigation systems.
The hydrological and hydraulic modelling undertaken for the route options assessment process formed the basis of the flooding impact assessment of the preferred route. Following the announcement of the preferred route and reviewing community comment on it, there have been further refinements of the route based on the results of additional environmental and engineering investigations. Following these the RTA undertook a further hydraulic and hydrological assessment of the route. There will be close consultation with all agencies during the environmental assessment and construction phases of this project.