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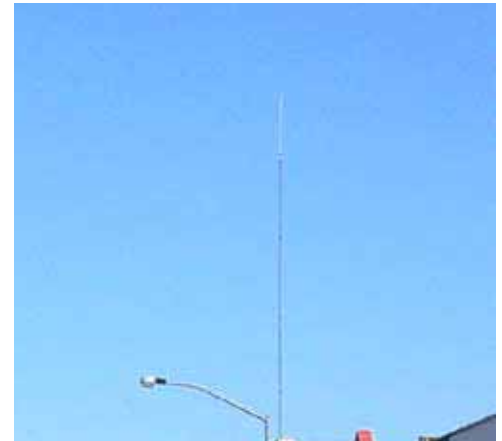


Kempsey to Eungai

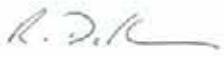
Upgrading the Pacific Highway

SUBMISSIONS REPORT

MARCH 2008



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1. Introduction and background

1.1 Purpose of this report

The proposed upgrade of the Pacific Highway between Kempsey and Eungai would involve the construction and operation of approximately 40.8 kilometres of four-lane divided carriageway highway from south of Kempsey to Eungai. The proposed upgrade would replace the existing Pacific Highway in this location, which currently passes through the towns of Kempsey and Frederickton.

The project is being assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). In accordance with the requirements of the Act, an Environmental Assessment was prepared to assess the potential impacts of the project.

The Environmental Assessment was placed on public exhibition from 1 August 2007 to 31 August 2007 at the locations detailed in Table 1-1. During this period, submissions were invited from anyone with an interest in the project. Comments (including late submissions) were received up until 8 October 2007. All necessary reference material was made available for review at the nominated locations and the Environmental Assessment was also available on the NSW Department of Planning (DoP) and the New South Wales (NSW) Roads and Traffic Authority (RTA) websites.

The DoP provided the RTA with copies of the 49 submissions received in response to the public exhibition.

Under Section 75H(6) of the EP&A Act, the RTA is now required to prepare and submit a formal response to the received submissions together with a revised Statement of Commitments (SoC) to reflect any changes to the proposed project arising from the submissions. This Submissions Report documents and considers the submissions received on the proposed upgrade Environmental Assessment (the Environmental Assessment) and outlines the RTA's responses to these submissions.

Following the consideration of submissions, no significant changes to the design described in the Environmental Assessment are proposed. The RTA considers therefore that the preparation of a Preferred Project Report is not necessary.

Table 1-1 Environmental Assessment display locations

Location	Address
Nambucca Heads Motor Registry	Seascope Shopping Centre, Shop 11-13, Ridge Street, Nambucca Heads
Nambucca Heads Council	44 Princess Street Macksville
Eungai Rail Post Office and General Store	8 Station Street, Eungai Rail
Clybucca BP truck stop	Pacific Highway 2440, Clybucca
Frederickton Newsagent	7 Macleay Street, Frederickton
Kempsey Shire Council Customer First Centre	22 Tozer Street, West Kempsey
Dunghutti Elders Council	Shop 5 & 6, 1 John Street, Kempsey
Booroongen Djugun Aboriginal Corporation (Nursing Home)	337-351 Riverview Street Greenhill
South West Rocks Country Club	2 Sportmans Way, South West Rocks,
Gladstone Post Office	54 Barnard Street, Gladstone
Kempsey Motor Registry	55 Elbow Street, West Kempsey
Port Macquarie Motor Registry	Corner Central Road and Barton Crescent, Port Macquarie
Kempsey Visitor Information Centre	Lachlan Street (Pacific Highway), South Kempsey
Stuarts Point Newsagency	2/16 Marine Parade, Stuarts Point
Crescent Head Newsagency	10 Main Street Crescent Head
RTA Pacific Highway Office	21 Prince Street, Grafton
RTA Head Office	Ground Floor, Centennial Plaza, 260 Elizabeth Street, Surry Hills
NSW Department of Planning Information Centre	23-33 Bridge Street, Sydney
Project shopfront	Shop 1, 37 Forth Street, Kempsey

1.2 Project information

The Kempsey to Eungai Pacific Highway upgrade project information line (1800 306 004) will remain open throughout the duration of the approval, detailed design and construction phases of the project. The RTA project staff will be available on the information line to respond to ongoing queries with regard to the project.

The Environmental Assessment display period and the DOP's formal submissions period have both closed. However, the RTA will continue to respond to other correspondence with regard to any ongoing project issues.

2. Consideration of submissions

2.1 Approach

A total of 49 submissions were received during the exhibition period. Each submission was reviewed individually and issues were extracted. Table 2-1 provides a reference, tracking where each issue and response is provided.

A summary of all submissions received is provided in Appendix A.

Table 2-1 Matrix of responses to submissions

Submission No.	Respondent	Organisation	Section where issues are addressed
1	M. Lucas	Crescent Head Chamber of Commerce	2.2.6, 2.2.16
2	J. Clark	Department of Planning – North Coast	2.2.2, 2.2.13
3	E. Walker	Individual	2.2.13, 2.2.17
4	A. & S. Firkin	Individual	2.2.8, 2.2.12, 2.2.13, 2.2.14, 2.2.17, 2.2.18
5	M. Mushalik	Individual	2.2.1
6	A. & L. Barrett	Individual	2.2.14, 2.2.16, 2.2.17, 2.2.18
7	S. & B. Grima	Individual	2.2.14, 2.2.17
8	B. Grima,	Individual	2.2.8, 2.2.11
9	M. Grima	Individual	2.2.9, 2.2.12, 2.2.14, 2.2.17, 2.2.18
10	M. Grima	Individual	2.2.5, 2.2.11, 2.2.14, 2.2.16
11	M. McLennan	Individual	2.2.6
12	P. Whittington	Individual	2.2.6
13	G. & P. Capararo	Individual	2.2.14
14	J. Biddle	Individual	2.2.8, 2.2.13, 2.2.14, 2.2.17, 2.2.18
15	K. Morrissey	Individual	2.2.13
16	Chapman	Individual	2.2.8, 2.2.9, 2.2.11,

Submission No.	Respondent	Organisation	Section where issues are addressed
			2.2.12, 2.2.14, 2.2.15, 2.2.18
17	J. Dring	Railway Technical Society of Australasia	2.2.1, 2.2.11, 2.2.18
18	P. Degens	Individual	2.2.1
19	M & M. Durda	Individual	2.2.13, 2.2.18
20	K. Whalen	Individual	2.2.8, 2.2.9, 2.2.10, 2.2.14
21	K. Eadie	Action for Public Transport (NSW) Inc.	2.2.4
22	B. Ferguson	Individual	2.2.5, 2.2.13, 2.2.16
23	P. Laird	Individual	2.2.1, 2.2.5, 2.2.11
24	J. Haberfield	Individual	2.2.12, 2.2.13, 2.2.14, 2.2.17, 2.2.19
25	P. Johns	Department of Water and Energy - Newcastle	2.2.3
26	D. & J. Dornan	Individual	2.2.4, 2.2.5, 2.2.8, 2.2.10, 2.2.12, 2.2.13, 2.2.15, 2.2.16, 2.2.17, 2.2.19
27	P. Worthing	Individual	2.2.4, 2.2.9, 2.2.14, 2.2.16, 2.2.19
28	J. Schroder & K. Davidson	Individual	2.2.11, 2.2.12, 2.2.13, 2.2.14, 2.2.16
29	C. Riffs	Individual	2.2.5, 2.2.8, 2.2.11, 2.2.16
30	V. Sicari	Heritage Council of New South Wales	2.2.15
31	K. Jones	Department of Primary Industries - Forests NSW, Central Region	2.2.9, 2.2.11, 2.2.12
32	A. Pearson	Individual	2.2.14, 2.2.18
33	S. McCudden	Individual	2.2.13
34	D. Clarke & T. Konieczny	Individual	2.2.4, 2.2.16
35	G. Parker	Individual	2.2.8, 2.2.13, 2.2.14
36	T. & A. McCloskey	Individual	2.2.6, 2.2.17
37	M. & K. Scafidi	Individual	2.2.5, 2.2.9, 2.2.11, 2.2.14, 2.2.16, 2.2.19
38	J. Willey	Kempsey Rural Lands Protection Board	2.2.4, 2.2.8
39	R. & G.Saul	Individual	2.2.8, 2.2.13, 2.2.16
40	P. Dalley & J. Kesby	Individual	2.2.4, 2.2.5, 2.2.6, 2.2.9, 2.2.13, 2.2.14, 2.2.16, 2.2.17, 2.2.20
41	R. Elsley	Community Action Group	2.2.4, 2.2.7, 2.2.8, 2.2.9, 2.2.12, 2.2.14,

Submission No.	Respondent	Organisation	Section where issues are addressed
			2.2.16, 2.2.19
42	A. Brodie	Individual	2.2.4, 2.2.16
43	A. Purvis	Department of Environment and Climate Change - North Coast Region	2.2.3, 2.2.9, 2.2.14, 2.2.15, 2.2.20
44	A. Vermeulen	Kempsey Shire Council	2.2.1, 2.2.4, 2.2.6, 2.2.7, 2.2.8, 2.2.9, 2.2.10, 2.2.12, 2.2.13, 2.2.14, 2.2.16, 2.2.17, 2.2.19
45	J. Chivers	Department of Environment and Climate Change - Coastal Management	2.2.6, 2.2.9
46	M. Enklaar	Department of Primary Industries	2.2.4, 2.2.7, 2.2.8, 2.2.9, 2.2.11, 2.2.12, 2.2.13, 2.2.16, 2.2.20
47	N. & B. Gibson	Individual	2.2.11, 2.2.16
48	V. Standing	Individual	2.2.9
49	J. Norton	Individual	2.2.12, 2.2.13

Due to the number of submissions and the similarity of issues raised in various submissions it was determined that responses would not be given to individual submissions but to the various issues raised. Where submissions raised the same or similar issues, a consolidated issue that encapsulated each of these was formulated.

Consideration of each issue was undertaken by the RTA and a written response provided. Issues were categorised according to the relevant chapter of the Environmental Assessment.

2.2 Responses to submissions

2.2.1 Context and need for the proposed upgrade

Sustainability of road transport

The following submissions were received with regards to the sustainability of the proposed upgrade.

- The Pacific Highway Upgrade Program does not support sustainable means of transport, particularly rail.
- The Environmental Assessment fails to prove that the necessary fuel supply that would support the assumed traffic growth will actually be available.
Submission No. 5, 17, 18, 23

The Pacific Highway Upgrade Program is focused on major improvement of the Pacific Highway between Hexham and the Queensland border. The program objectives and the State and Commonwealth strategies that it is based on also deal with the broader environmental context of the highway. The objectives of the program address a range of key issues, in particular the reduction of road crashes and injuries, but also community interests, economic development, value for money, transport efficiency and ecologically sustainable development. The principles of ecologically sustainable development have been applied throughout the development of the project, and the application of these principles is discussed in sections 2.4 and 22.2 of the Environmental Assessment (EA).

The relationship of the State and Commonwealth strategies to the Pacific Highway Upgrade Program are detailed in Section 2.2 of the EA. The AusLink 'Sydney – Brisbane Corridor Strategy' (2007) in particular considers the transport and freight efficiencies of not only the Pacific Highway, but also the North Coast rail line and the New England Highway, all of which are integral parts of the Sydney – Brisbane transport corridor. This study identifies that the Pacific Highway is the key transport mode in this region. It also highlights the fact that the Main Northern railway is unlikely to meet the future inter-regional transport task even if major rail infrastructure upgrades were to occur.

There is considerable debate about the possibility of a peak in the production of oil, the timing of this event should the supply of oil begin to decline (BTRE Working Paper 61: Is the world running out of oil?) and the impact on transport and infrastructure requirements if in fact there is a decline in the availability of oil.

Government and industry are taking the view that, whilst the timing remains problematic, it is prudent to assume that peak oil is likely to occur and that there is a need to establish alternatives to oil as a fuel for transport, and to improve the energy efficiency of transport. This aligns with recognition of the greenhouse effect and the need to reduce greenhouse gas emissions.

There is a close link between economic growth and transport growth. As the Australian and NSW economies continue to grow the need for transport also grows. Freight transport, for example, is predicted to more than double between 2000 and 2020 (BTRE Report 107: Greenhouse gas emissions from transport - Australian trends to 2020).

Historically, there has been a link between transport growth and growth in the demand for fuel. Action is now being taken through Government-supported programs and commercial initiatives to identify alternative sources of fuel and to develop technology to reduce the fuel consumed by vehicles — as evidenced by the commercial availability of bio-diesel, ethanol blended fuels and hybrid cars. This would enable the economic benefits provided by road transport to continue to be delivered with a reduced need for fossil fuels.

Therefore, the Pacific Highway Upgrade Program is justifiable as it forms part of both the State and Commonwealth governments' strategies for a sustainable transport system. On the basis of these strategies, the highway is expected to remain the key interstate transport route for both freight and people between Sydney and Brisbane well into the foreseeable future. The highway will also continue to serve the ever-expanding coastal communities of the North and mid-North Coast of NSW.

- The rail line (Sydney to Melbourne?) should be upgraded.
Submission No. 5, 17, 18, 23

It is assumed that the reference to the "Sydney to Melbourne rail line" is meant to be the "Sydney to Brisbane rail line".

The Pacific Highway Upgrade Program forms an important part of both State and Commonwealth strategies for the improvement of the Sydney – Brisbane transport corridor (see Section 2.2 of the EA). The AusLink 'Sydney – Brisbane Corridor Strategy' (2007) identifies the Pacific Highway as the key transport mode in the Sydney – Brisbane transport corridor. It also highlights the fact that the Main Northern railway is unlikely to meet the future inter-regional transport task even if major rail infrastructure upgrades were to occur.

Further to this, the upgrade of rail networks is the responsibility of the relevant rail transport/infrastructure authorities rather than the RTA, which is responsible for the development and maintenance of the road network in NSW. Any decision on the upgrading of the rail network, as well as the timing and availability of funding for such works would rest with the State and/or Commonwealth authorities responsible for the rail network and is, therefore, outside the scope of the Kempsey to Eungai Pacific Highway upgrade project.

- The principle of integrated transport corridors needs to be considered.
Submission No. 17, 18, 23

The issue of integrated transport corridors has been raised previously for this and other Pacific Highway Upgrade Program projects. There has been some discussion between the RTA and rail authorities (ARTC) regarding the possibility of a combined road/rail corridor; however, no suitable proposal has

yet been put forward. Constraints hindering an integrated transport corridor include timing, funding and design constraints such as corridor width and grade. The RTA would be willing to discuss this matter further with ARTC if a suitable proposal were put forward.

- The Pacific Highway Upgrade Program has led to increased heavy truck numbers and domination of freight by road transport rather than rail. Submission No. 18, 23

One of the objectives of the Pacific Highway Upgrade Program is to reduce freight transport costs, which would thus encourage its use by heavy vehicles. The increase in the number of heavy vehicles using the Pacific Highway is, therefore, an outcome of the achieving one of the program's objectives.

It is also relevant to note that only relatively small proportion of the heavy vehicle traffic on the Pacific Highway is purely Sydney-Brisbane traffic, as the north coast area of New South Wales generates a large volume of freight movement in itself. A reasonable amount of the heavy vehicle traffic on the Pacific Highway is of inter/intra regional nature, having either an origin/destination or a number of pick-up/drop-off points within the north coastal area. As evidence, a recent Pacific Highway origin/destination survey (September 2006) indicates that approximately 60% of northbound heavy vehicle traffic passing through South Kempsey on the Pacific Highway had a destination in the section of the highway between South Kempsey and Woolgoolga. The survey also indicates a similar percentage of southbound heavy vehicles passing through Woolgoolga had destinations between Woolgoolga and South Kempsey.

The AusLink 'Sydney – Brisbane Corridor Strategy' (2007) identifies that road transport (on both the Pacific and New England Highways) currently carries 76% of the Sydney-Brisbane corridors inter-capital freight task, with rail carrying only 11%. Modelling of the future corridor improvements and opportunities in this report found that even with significant improvements to the rail network planned for implementation by 2009, the road transport share of freight would remain at 70%.

The Pacific Highway Upgrade Program is just one part of the wider State and Commonwealth Government strategy to improve the transport network in the Sydney-Brisbane corridor. The distribution of funds to support road and rail transport improvements within this corridor is a matter determined at a State and Australian Government level, which is outside the scope of both the Pacific Highway Upgrade Program and this project.

Project need

The following submissions were received with regards to the project need.

- In terms of Kempsey's intended strategic direction, Kempsey Shire Council supports the proposed highway alignment.
Submission No. 44

It is noted that Kempsey Shire Council supports the proposed highway alignment in terms of Kempsey's intended strategic direction.

2.2.2 Planning and approvals

The following submissions were received with regards to planning and approvals.

Regional planning

- The Draft Mid North Coast Regional Strategy needs to be specifically addressed.
Submission No. 2

The Draft Mid North Coast Regional Strategy 2006-31 (Department of Planning 2006b) is addressed in Section 2.2.3 (pg 15) of the Environmental Assessment. The draft strategy was released in January 2007, with the draft growth area maps currently on display for public comment until 8 February 2008. The proposed upgrade would complement the draft Strategy by providing road transport infrastructure through the Macleay Valley, connecting the Kempsey area to other regional centres and presenting opportunities for employment. Importantly, the proposed upgrade would not adversely impact identified growth areas in the Kempsey local government area.

2.2.3 Further approvals and licences

The following submissions were received with regards to further approvals and licences.

- The Department of Water and Energy advise that there is no requirement for bore licences under Part 5 of the *Water Act 1912* for the project.
- The Department of Environment and Climate Change advise that the RTA requires an operation licence for construction.
Submission No. 25, 43

The licensing and permit requirements for groundwater bores and water usage under the *Water Act 1912* and *Water Management Act 2000* are noted.

The requirements to obtain an operating licence under *Protection of the Environment Operations Act 1997* are noted. All licence and approval requirements for the project are outlined in Section 3.2 of the Environmental Assessment.

2.2.4 Community and stakeholder involvement

The following submissions were received with regards to community and stakeholder involvement.

Individual consultation

- Property owners were not consulted earlier in person as requested.
- Consultation with businesses on properties 9 and 12 was inadequate.
Submission No. 26, 40, 42

While a meeting was not held with these particular landowners at the time of their request due to a number of issues (including the pending Environmental Assessment display, which would involve individual landowner consultation and the release of much more detailed information than was previously available), they were consulted in person on a number of occasions during the project development phase. The RTA has been aware throughout the project of the issues raised by these land owners and has considered these issues during route selection, preparation of the concept design and the environmental assessment. The RTA has addressed the issues raised where appropriate during the development of the project and in the concept design. The land owners were also consulted on numerous occasions during the Environmental Assessment exhibition period.

As a directly affected land owner, the owners of Property No.9 have been included in all relevant correspondence regarding the project, including newsletters and letters, and have been provided with the details of the project website and information line (free call).

Consultation with Property No.12 is considered adequate as a representative of the company was a member of the South Kempsey precinct community liaison group, which met in April 2005, December 2005 and July 2007. The RTA also met or spoke with a representative of the company on three other occasions during the Environmental Assessment exhibition period in August 2007. As a directly affected landholder, the company also received newsletters and letters and was provided with the details of the project website and information line (free call).

The RTA will continue to consult with all directly affected land owners during the property acquisition and compensation negotiations.

- Lessees of the Kempsey Indoor Sports Centre were not consulted formally.
Submission No.34

Whilst the RTA typically deals with land owners with regard to property impacts, the RTA is available to consult with lessees of affected premises, in the same way that it consults with other members of the community who are not directly affected land owners. Avenues for consultation have included the project information line (toll free) and the three shopfront exhibitions held in Kempsey in October 2002 during the route selection display, during the preferred route/sub-

options display (December 2003/January 2004) and during the Environmental Assessment exhibition period in August 2007. Further to this, the opportunity for consultation with the RTA for all members of the community is always available by contacting the Project team members via the Kempsey to Eungai Upgrade project telephone number 1800 306004 (Toll free). The RTA would approach the lessees to commence negotiations with regard to their interest in the property during the property acquisition/detailed design phase of the project.

- The agricultural consultant appointed by the RTA was not made available to all.

Submission No.40

In February 2005 the RTA engaged a local agricultural consultant to help the project team and the community gain a clearer understanding of flooding issues, the design proposals and potential agricultural impacts, particularly in the Frogmore and Collombatti areas. In addition, during the property acquisition and construction phase of the project, the RTA will make the services of a suitable agricultural specialist available as necessary to help with the identification and resolution of issues for non-traditional agricultural businesses such as a specialty nursery or organic dairy.

The availability of the agricultural consultant was advertised in the February 2005 Community Update and interested community members were invited to call the project information line to arrange a meeting. The Community Update was distributed by Australia Post to more than 6,800 letterboxes in Kempsey and the surrounding areas. A meeting with the agricultural consultant was not requested by the owners of this property.

- The Rural Lands Protection Board (RLPB) is pleased to note the progress that has been made with affected landowners and the actions taken to lessen the impact of the bypass on agricultural land.

Submission No.38

The RLPB's satisfaction with the project to date in terms of consulting with land owners and lessening the impact of the project on agricultural land is noted.

General consultation

- Object, as RTA has not addressed community concerns, more consultation, investigation and information made publicly available required.
- The consultation process was inadequate and did not consider community concerns.

Submission No.41

A comprehensive community consultation strategy has been implemented throughout the course of the project, with up to 11,000 households and businesses involved in consultation activities to date. Consultation activities have included community meetings, three shopfront exhibitions, distribution of newsletters to stakeholders and the wider community, and maintenance of a project website. Avenues to consult with the Project Team have been available

throughout the duration of the project via the project information line (free call). These activities are discussed in Chapter 4 of the Environmental Assessment and also in the Project Application Report (July 2006) and the Preferred Route Option Report (July 2004).

The consultation process has involved a broad cross-section of the community, and as such the RTA considers that it is aware of and has considered the majority of the issues raised during the project development process. Concerns raised during the route options display were considered as part of the route selection process. The community involvement approach for the concept design and environmental assessment phase of the project sought to address issues identified during the route selection phase, and to respond to any further issues raised by local community members, and affected or adjacent land owners.

A summary of the key issues raised by the community and stakeholders during the concept design and environmental assessment phase of the project are provided in Table 4-2 of the Environmental Assessment. These issues have been considered and are addressed in the environmental assessment documentation, including in the Project Application Report and the Environmental Assessment. In addition, they formed part of the specialist investigations undertaken as part of the concept design and environmental assessment phase.

The RTA has sought to provide extensive and rigorous assessment and consideration of environmental impacts, community concerns and technical requirements in determining the optimum route, alignment and design for the Kempsey to Eungai Pacific Highway upgrade. Since the inception of the project in 2001, the RTA has consulted extensively with the community and stakeholders at all levels, from individual landowners and precinct-based community liaison groups to the wider public, Council and State Government agencies. The Environmental Assessment documents this process and marks the culmination of all technical investigations to determine the biophysical and socio-economic impacts of the proposal.

- The exhibition period was not long enough.
Submission No.27

The Department of Planning set the public exhibition period, which was based on the statutory timeframe of at least 30 days as described under Section 75H(3) of the EP&A Act. The formal exhibition period for the Project continued for 31 days (1 August to 31 August 2007), however submissions were accepted by the Department of Planning as late as 8 October 2007. The Environmental Assessment and information about it has also been readily available to members of the public since the beginning of the display period through the website (both the DoP and RTA project websites) and the project information line (freecall).

During the exhibition period the RTA also staffed a shopfront location in Kempsey for a total of 5 days, held 4 community liaison group meetings and invited directly affected landowners to individual meetings at the shopfront to

discuss the project and the submissions process, and also explain details of the Environmental Assessment as required.

- [Is the proposal subject to a public hearing?](#)
[Submission No.21](#)

Under Part 3A of the EP&A Act the Project is subject to approval by the Minister for Planning. At the time of preparing the Submissions Report, the Project is not subject to a public hearing. However, at his discretion, the Minister may choose to constitute an independent hearing and assessment panel to assess any aspect of the project. For the purposes of the assessment the panel may receive or hear submissions from interested persons (refer to Clause 75G of the EP&A Act).

Further consultation

- [Consultation with Kempsey Shire Council and residents affected by Frederickton flood levee must be ongoing.](#)
- [Continued consultation with landholders will need to be carried out to implement appropriate mitigation measures.](#)
[Submission No. 44, 46](#)

Consultation with Kempsey Shire Council and the community will be ongoing throughout the detailed design and construction phase of the project.

The design of the Frederickton flood levee would be refined during the detailed design phase of the project. The RTA would continue to consult with residents and Kempsey Shire Council throughout the detailed design and construction phase to minimise, where reasonable and feasible, impacts of the flood levee.

As discussed in Technical Report 1, Supplementary Flooding Report, the dimensions of stock mounds would be determined in consultation with landowners to allow appropriate sizing to accommodate the numbers of stock likely to use the mounds.

Consultation with affected landowners would continue, particularly during the detailed design and construction phase. This process allows for landowners impacted by the proposal to be consulted with and informed of any proposed mitigation measures on or adjacent to their properties.

2.2.5 Approach to route selection and design

The following submissions were received with regards to the approach to route selection and design.

Route selection

- Object to the eastern route on the basis that the route selection process was biased and ignored cheaper and more practical route alternatives.
- There was not enough detail on route selection in the Environmental Assessment.

Submission No. 10, 22, 23, 26, 29, 37, 40

The route selection process is discussed in Section 5.1 of the Environmental Assessment. This section outlines the development of options and selection of the preferred route. The discussion also refers to documentation supporting the decision on the preferred route, including the Preferred Route Option Report – Kempsey to Eungai – Upgrading the Pacific Highway (NSW Roads and Traffic Authority 2004) and five volumes of technical reports, which were placed on the RTA website immediately following the announcement of the preferred route. These documents are available on the website.

Eighteen feasible options were initially assessed as part of the route development and selection phase. The final route options were described as the western and eastern options. The assessment of these options did indicate that the western option would have lower costs than the eastern route in terms of the estimated cost of utility adjustments and the cost of operation. However the eastern option was selected as the preferred route because it:

- had the potential to be staged
- performed better on balance than the western option according to most criteria
- provided good access to both the Kempsey town centre and the coast
- impacted fewer people
- had less impact on the industrial area south of Kempsey
- had less impact on schools
- reduced severance of local communities compared to the western option
- provided better access to commercial centres.

The route selection process was considered to be an open and well documented process, involving consultation with the community, relevant agencies and other stakeholders including a community information evening, community focus group meetings, flooding group meetings, distribution of Community Updates and two shopfront exhibitions held in October 2002 during the route selection display and in December 2003/January 2004 during the preferred route/sub-options display.

Design approach

- The Environmental Assessment does not comply with Australian Transport Council's Guidelines Assessment Methodology Working Group Guidelines for Transport System Management.
Submission No.23

While the Environmental Assessment for this project may not comply with the Australian Transport Council's Guidelines Assessment Methodology Working Group Guidelines for Transport System Management, major infrastructure projects in New South Wales are normally prepared and assessed under the *Environmental Planning and Assessment (EP&A) Act 1979*. The only exception to this would be if it was identified that the project had the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land. In that circumstance, the project would have to be referred to the Commonwealth Minister for Environment and Water Resources for consideration under the *Environmental Protection and Biodiversity Conservation Act 1999*. As no such Commonwealth matters were identified, the Environmental Assessment for this project was prepared to comply with Part 3A of the EP&A Act and the environmental assessment requirements issued by the Director General of the Department of Planning on 22 September 2006 under Section 75F of the EP&A Act (see Appendix A of the Environmental Assessment).

2.2.6 Concept design

The following submissions were received with regards to the concept design.

Road design

- Consideration needs to be given to provision of an interchange at Crescent Head Road.
Submission No.1

The preferred route including sub-options for the Kempsey to Eungai Pacific Highway upgrade was displayed in December 2003 and finally announced in July 2004. The Preferred Route Option report (NSW Roads and Traffic Authority 2004) outlined possible locations of interchanges along the alignment. Interchanges were strategically located to match the project constraints, regional traffic patterns/needs and best serve all major centres and regional roads in the study area.

The South Kempsey interchange is located to best serve the township of Kempsey and adjoining local roads, including Crescent Head Road. An interchange located at Crescent Head Road was not considered to be cost-effective, given low traffic volumes and the high cost of providing an additional interchange close to the South Kempsey interchange. An interchange at this location would also result in significant additional impacts, particularly associated with noise and visual amenity, and would require significant land acquisition to accommodate interchange facilities.

Furthermore, an interchange would introduce additional heavy vehicle traffic to Crescent Head Road and affect local hydrology and amenity. The RTA believes that the proposed South Kempsey interchange adequately services the existing local road network, including Crescent Head Road. Appropriate signage would be developed in consultation with Kempsey Shire Council and the community to alert travellers to the Macleay Valley tourist area and the attractions within it, including coastal towns such as Crescent Head and South West Rocks.

- The alignment at Shannon Close needs to be further east to allow landowner access.

Submission No.12

The existing property access for this property via Shannon Close would be retained as part of this proposal. Access to this property is illustrated in Figure 6-1b of the Environmental Assessment.

- The road corridor boundary needs to be adjusted closer to the edge of the cut at Station 3000.

Submission No.40

The road corridor boundary at the edge of the large cutting at Station 3000 has been proposed to provide flexibility in the final design of the cutting pending further geotechnical investigations. Further geotechnical information is required to finalise the design of the batters and cutting in this area.

- The distance between the intersection of Frederickton interchange service road and existing Pacific Highway and Great North Road intersection needs further investigation.

Submission No.44

The proposed roundabout would be located in what is currently a 50km/h urban speed zone area. The location and design of the Frederickton interchange access road intersection, as well as any associated speed control measures would be refined in consultation with Kempsey Shire Council to suit an urban situation during the detailed design phase.

Frederickton flood levee

- The Frederickton flood levee should incorporate a 25 metre long, 6 metre wide navigable lock and refuge mooring basin for boats within the town levee.

Submission No.11

The Frederickton flood levee is proposed to protect residences in the flood prone Lawson Street area of Frederickton, rather than providing a refuge for boats during flood events. The provision of a navigable lock and boat refuge basin would be contrary to the intent of the levee and would introduce a totally new land use in proximity to residences. The provision of a navigable lock in the Frederickton levee is therefore not considered to be appropriate as there is no such existing facility and the provision of a facility such as this would be outside the scope of work of this project.

- Further information on the exact location and dimensions of the flood levee must be provided to affected land owners.

Submission No.36

The design of the Frederickton flood levee would be developed and refined based on the results of further flood modelling, as well as other investigations to be undertaken during the detailed design phase of the project. The RTA would continue to consult with affected landowners, Kempsey Shire Council and relevant government agencies throughout detailed design and construction of the proposed levee.

- Further consideration needs to be given to increasing the waterway area north of Frederickton to allow flood drainage through Frederickton and under the existing highway.

Submission No.44

The RTA would assess the capacity of existing highway cross-drainage structures affected by the proposed upgrade, and levee to the north of the Lawson Street intersection with the existing highway as necessary during the detailed design phase of the project. Existing major drainage flow paths in the low lying area to the north of Lawson Street would be retained. Improvements would be made to the existing drainage structures and drainage flow paths if necessary, to ensure that the performance of the levee meets the stated objectives and to manage impacts associated with the proposal. These investigations would be undertaken in consultation with Kempsey Shire Council and other key stakeholders.

- The Department of Environment and Climate Change request plans for new public wharf, boat ramp, car parking and recreation area north of Frederickton.

Submission No.45

This project involves the provision of a boat ramp and parking area (see Figure 6.1g of the Environmental Assessment) to replace an existing opportunistic boat ramp in Frederickton (originally the ferry loading access ramp), which would be impacted by the proposed flood levee. However, the proposal would not include the provision of a “public wharf” as part of the boat ramp facility as no such facility exists in Frederickton at the current time and the introduction of such a facility may have further impacts on flooding and riparian vegetation in the area.

The detailed design of the proposed boat ramp and associated access and parking facilities north of Frederickton would be undertaken in consultation with Kempsey Shire Council and other relevant stakeholders (including the Department of Environment and Climate Change) during the detailed design phase of the project. This would ensure that the design complies with current principles of estuary management on the Macleay River.

It should also be noted that a boat ramp and access facilities would be required as part of the temporary infrastructure requirements for the construction of the Macleay River bridge. This proposal involves the retention of the relevant parts of temporary infrastructure facilities for later community use as a replacement

for the existing facility that would no longer be accessible, as well as the removal and restoration of any other temporary works not required for the project. The Department of Environment and Climate Change would also be consulted with regard to the location and design of temporary facilities, as well as their removal, during the preparation of the Construction Environmental Management Plan (CEMP) for the project.

2.2.7 Refinement of the concept design, detailed design and construction of the proposed upgrade

The following submissions were received with regards to the refinement of the concept design, detailed design and construction of the proposed upgrade.

Timing of construction

- When will construction commence on the proposal?
- How long will it take to complete construction of the proposal?
Submission No.41

The start date of the construction of the proposal is dependent on several factors including approval of the project under Part 3A of the EP&A Act, programming requirements, the availability of funding, as well as a decision by the RTA on the most efficient method of delivery i.e. design and construct, Alliance, etc.

An indicative construction program is provided in Section 7.3.2 (Figure 7-2) of the Environmental Assessment. The indicative length of construction for the whole alignment is approximately 3 to 4 years. Should the project be staged (for example as outlined in Table 7-2), it is possible that the first stage of the work (most likely the southern half of the proposal between South Kempsey and Frederickton) could be constructed initially. However, the duration of staged construction (and indeed the complete project) would be subject to a range of issues including the staging option adopted, wet weather (particularly for the floodplain activities), industry resource demands, as well as the detailed design and investigation of issues such as soft soils and settlement requirements for the floodplain area.

- Clarification of implications for traffic at Frederickton should the project be constructed in stages is required.
Submission No.44

There are a number of options available for staged construction should a decision be made to stage the project. Appropriately designed temporary traffic connections and a supporting signposting scheme would be required to allow vehicles to safely transfer from the new highway to the old highway north of Frederickton in this situation. Traffic capacity, safety, access, delineation and constructability issues would be considered in selecting and designing an appropriate temporary connection arrangement at Frederickton. Decisions with regard to the location, design and implementation of any staging option in the Frederickton area would be made in consultation with the community, Kempsey Shire Council and the relevant government agencies.

Sediment retention ponds

- A description of temporary or permanent sediment retention ponds adjacent to waterways is required.
Submission No.46

A description and indicative location of temporary sediment basins and permanent spill containment basins is provided in Section 6.2.4 and Figures 7-1a to 7-1f of the Environmental Assessment. It should be noted that the reference in Section 6.2.4 of the Environmental Assessment for the location of spill containment basins being shown on Figures 6-1a to 6-1s is incorrect and should refer to Figures 7-1a to 7-1f. An indicative example of the structure of a sediment basin is provided in Figure 6-13. The location and number of temporary sediment basins and spill containment basins would be refined during the preparation of the detailed design phase in consultation with the relevant agencies.

2.2.8 Hydrology and water management

The following submissions were received with regards to hydrology and water management.

Flooding impacts

- Concern over impacts of the proposal on local drainage and flooding on properties.
Submission No. 4, 14, 16, 20

The proposed upgrade would increase water levels and the duration of inundation during and after flood events in some areas of the Macleay River floodplain. Flood impact management measures as identified in Section 10 of the Environmental Assessment would be implemented in the locations identified in the flooding studies as being affected by changes to the flood regime resulting from the proposal, particularly properties in the lower Macleay floodplain area. In all other locations the proposed upgrade would incorporate structures such as bridges and culverts to maintain existing flow paths and flooding regimes.

Surface water flow management measures are discussed in Section 10.3 of the Environmental Assessment. These measures have been developed to ensure minimal increases to water levels upstream of the structures and little disruption to the natural hydrological regime through the diversion of the flow onto the adjoining catchment.

Where possible, the RTA would avoid making any changes to the existing flow paths within the catchment area. Where significant changes to existing flow paths are identified, suitable mitigation measures would be developed during detailed design phase in consultation with the relevant agencies. For example, drainage culverts are proposed to carry surface water flows underneath Bingis Lane. Further details on local drainage provisions are outlined in Section 6.2.3 of the Environmental Assessment.

- Increased flood levels on Macleay River and Collombatti Creek floodplains will cause loss of high ground and access to stock refuge areas (travelling stock reserves).

Submission No. 29, 38

The RTA acknowledges that the proposed upgrade would result in the loss of high ground and stock refuge areas on some affected properties. The RTA is committed to reinstating, emergency and stock evacuation routes to high ground or refuge areas affected by the proposed upgrade and predicted changes to flood characteristics. As outlined in Section 10.2.2 and in Figure 10-7 of the Environmental Assessment, access would be maintained to the local stock refuge areas, including the RLPB stock reserve on Old Station Road. A designated stock crossing would also be provided at Mill Lane (refer Figure 15-2 and 15-3 of the Environmental Assessment) to re-instate the existing stock evacuation route along Raymonds Lane. Ongoing consultation would be undertaken with the RLPB with regard to the impacts on flood evacuation routes and flood refuges.

All directly affected properties operating dairy and/or beef cattle businesses were consulted during the route selection phase and during the concept design and environmental assessment phase of the project. Where possible, the proposed alignment minimises loss of high ground and allows for access to isolated high ground within properties via bridges, overpasses and underpasses.

- The proposal is not flood free. It will increase flood risk and the depth and velocity of floods. Flooding of the highway could cause loss of life, disruptions to services and economic loss.

Submission No. 26, 29

It is acknowledged that the proposal is not flood free; however, the proposal would improve the flood immunity of the highway in comparison to the existing scenario. The current highway has a flood immunity of less than the 1-in-5 year flood, whereas the proposed upgrade would increase the flood immunity of the highway up to the 1-in-20 year flood level across the Macleay River floodplain. To the north of Frederickton, flood immunity would be improved up to the 1-in-100 year flood level. To achieve this improvement in flood immunity, the proposal includes approximately 2.17 kilometres of bridging across the main floodplain area.

- Embankments and structures built over the Collombatti Creek floodplain will increase flood impacts. Waterway openings proposed are not sufficient to allow drainage during flooding, prolonging flooding and subsequently soil and pasture damage.

Submission No.39

It is acknowledged that the construction of the proposed upgrade across the Macleay Valley floodplains would result in some changes to the characteristics of floods. However, the proposed bridging and drainage structures have been designed to minimise impacts on the flooding regime of the Macleay River and its floodplain. The development of the floodplain crossing structures for both the main Macleay River and Collombatti Creek floodplains has been an iterative process involving detailed hydraulic modelling, consultation with a local flooding group, affected landowners on the floodplain, Kempsey Shire Council and the Department of Water and Energy. Modelling has indicated that flooding impacts would be localised and manageable.

The details of the flood investigations, the potential flooding impacts and the proposed mitigation measures for the Collombatti Creek floodplain area are outlined in Sections 10.1.2, 10.2.1 and 10.2.2 of the Environmental Assessment. Additional flood modelling based on the final design would be undertaken during the detailed design phase to further refine the bridging, drainage structure and flood mitigation requirements for the Collombatti Creek floodplain. The potential implications of climate change for flooding would be considered as part of their modelling, based on the scientific information available at that time. This work would be undertaken in consultation with affected landowners, Kempsey Shire Council and the Department of Water and Energy.

- Changes to local hydrology surrounding Verges Swamp will impact the flooding regime. The displacement of soil would affect flood levels and change the natural flood course of the land.

Submission No.41

The proposed upgrade would not result in changes to local flooding in the vicinity of Verges Swamp. As outlined in Section 10.2 of the Environmental Assessment, the proposed floodplain bridging would allow existing flood flow paths to be maintained and would result in only localised changes to the flood regime. Embankments and openings would cause the floodwaters to be held back slightly longer and flow velocities would also marginally increase, however, downstream areas on the eastern side of the alignment (such as Verges Swamp) would not experience any changes to local hydrology as the natural topography would remain unchanged.

Flooding mitigation measures

- The proposed mitigation measures for land affected by flooding seem reasonable. Continued consultation with affected landowners is an important strategy for implementing measures appropriate at the individual property and enterprise scale.
Submission No.46

Noted. Affected landowners would continue to be consulted through the detailed design and construction phases of the project. All flood mitigation measures would be designed and implemented in close consultation with landowners, Kempsey Shire Council and relevant agencies.

- The RTA must ensure that adequate stock access is provided and maintained to high ground and stock reserves.
- RTA should consider providing for the movement of stock from the floodplain to higher ground along the proposed highway corridor via a locked gate system.
- It is suggested that proposed flood mounds have facilities for storage of fodder during prolonged flood conditions.
Submission No. 44, 46

The RTA is committed to reinstating the designated stock flood evacuation routes affected by the proposal. As outlined in Section 10.2.2 and in Figure 10-7 in the Environmental Assessment, access would be maintained to the local stock flood refuge areas, including the Rural Land Protection Board (RLPB) stock reserve on Old Station Road. A designated stock crossing would also be provided using the proposed overbridge at Mill Lane (refer Figure 15-2 and 15-3 of the Environmental Assessment).

All directly affected properties operating dairy and/or beef cattle businesses were consulted during the route selection, concept design and environmental assessment phases of the project. Where possible, the proposed alignment minimises loss of high ground and allows for access to isolated high ground within properties via bridge underpasses and farm access underpasses. Ongoing consultation would be undertaken with the RLPB with regard to the impacts of the proposal on the flood refuges and evacuation routes.

The proposal provides 1-in-20 year flood immunity for vehicle traffic across the Macleay River floodplain. Given the level of flood immunity designed for the highway, stock would need to be moved off the floodplain prior to the highway being closed to traffic as a result of inundation. In addition, as the proposed highway will be declared a Motorway, controlled access conditions would apply and as a result the use of the road corridor for the movement or refuge of stock would not be appropriate for safety reasons.

Stock mounds are not intended for long term stock refuge during flooding and should only be used as a transitional stock holding area prior to loading onto trucks for evacuation. As a result, the RTA does not consider it appropriate to provide facilities for the storage of fodder on stock mounds. The installation of

facilities such as these on the stock mounds would be at the cost and discretion of landowners.

Frederickton flood levee

- The Frederickton flood levee does not protect Frederickton residents from local flooding (i.e. from catchments west of the Macleay flowing into Frederickton).

Submission No.29

The Frederickton flood levee is proposed, and would be designed, to protect residences on Lawson Street from flooding of the Macleay River. Flood gates would be installed within the levee structure to allow for the passage of local rainfall run-off collected within the levee (i.e. water that has been collected in catchments behind the levee).

Because of the difference in the local catchment and the Macleay River catchment flow times, the majority of flows from the local catchment would be expected to pass through the levee by the time the flood gates were closed by a major Macleay River flood. Hence it is unlikely that significant storage of local runoff would occur during major Macleay River flood events.

However, as part of the detailed design of the project, the RTA would identify any additional measures that may be required to prevent significant flooding impacts within the levee in consultation with the affected landowners, Kempsey Shire Council, and relevant agencies.

- The Frederickton flood levee will not prevent groundwater from rising up through the ground surface causing flooding inside the levee wall.

Submission No.35

The Frederickton flood levee is proposed, and would be designed, to protect residences on Lawson Street from flooding of the Macleay River. The levee would protect residences from increased flood levels and flow velocities that are the result of prolonged periods of high rainfall. Whilst surface flooding of the Macleay River and to some extent local flooding may result in a rise in the groundwater level, any breaching of the surface by groundwater would be expected to be manageable.

Existing levee banks similar to the proposed Frederickton levee are in operation in Kempsey and other parts of the east coast of NSW. There is no known evidence to suggest that there is a significant problem associated with flooding within these levees as a result of rising groundwater. It is, therefore, not anticipated that this would present a significant problem at Frederickton. The drainage provisions included in the design of the levee should help to address this issue should it arise.

Changes to water availability

- The proposal will reduce surface run-off during rainfall thereby reducing availability of water for horses.

Submission No.8

It is anticipated that water draining to the property in question would not be influenced by the proposed upgrade as the project is outside the water catchment of the property.

Culvert design

- The position of the culvert/underpass on Property No.88 is not appropriate.

Submission No.20

The positioning of the farm access underpass on Property No.88 would be finalised during detailed design in consultation with the landowner to ensure the most appropriate location is identified.

2.2.9 Biodiversity

The following submissions were received with regards to biodiversity.

Compensatory habitat

- The Department of Environment and Climate Change requests riparian plantings on both sides of the river where the highway crosses at Frederickton and at other strategic locations, such as major creek crossings. This work could be expanded if considered as a strategic planting to compensate for the loss of terrestrial vegetation and habitats on the highway route. This form of compensation may equate to at least several kilometres of new riparian plantings.

Submission No.45

Riparian areas disturbed as a result of the project would be progressively revegetated during construction, which would include the use of plants of local provenance, such as riparian plant species.

The RTA has committed in Section 11.4.6 of the Environmental Assessment to the development of a compensatory habitat package to compensate for the loss of key habitats affected by the proposal. The development of the package would include consideration of a range of possible offsets which may include strategic revegetation of riparian zones if appropriate.

The compensatory habitat package would be negotiated with relevant agencies, including the Department of Environment and Climate Change following the approval of the project.

- The decision principles used by the Property Vegetation Plan developer (PVP) as used by the NRCMA and Department of Environment and Climate Change (ex Department of Natural Resources) for evaluating ecological/habitat losses and developing compensation plans, should be employed on this highway Project.

Submission No.45

The PVP was developed in order to assess broad-scale clearing and relevant compensation as part of clearing proposals assessed under the *Native Vegetation Act 2003*. Projects assessed under Part 3A of the EP&A Act do not require further assessment and approval under the *Native Vegetation Act 2003*.

Offset strategies are discussed in Section 7 of the Environmental Assessment Technical Report 2 - Supplementary Ecological Assessment. The RTA will develop a package of compensatory habitat measures for the loss of key habitat affected by the proposal. A compensatory habitat package would be negotiated with relevant agencies including the Department of Environment and Climate Change.

- The provision of compensatory habitat in the form of adjacent land is considered appropriate.

Submission No.44

Noted. The option of protecting or purchasing suitable adjacent land will be considered when developing a compensatory habitat package with relevant agencies including the Department of Environment and Climate Change.

Environmental Assessment studies

- The Department of Environment and Climate Change notes that field biodiversity studies of the site are required as part of the environmental assessment. These studies were conducted in late 2004 and early 2005, prior to the issuing of the Department of Planning's environmental assessment requirements (2006). The Department of Environment and Climate Change seeks clarification from the proponent in asking if these studies were comprehensively conducted at the study site specifically in anticipation of meeting this requirement. Alternatively, the Department of Environment and Climate Change requires a site specific biodiversity field study be undertaken at the site following the Department of Environment and Climate Change's Threatened Species Survey and Assessment Guidelines.

Submission No.43

The environmental assessment of the project has been underway since late 2004 and initially the project was to be assessed under Part 5 of the EP&A Act (prior to the commencement of the Part 3A assessment process). Under Part 5 it was concluded that there would be a significant impact on threatened species (as determined using Section 5A of the EP&A Act) and that a Species Impact Statement would be required.

The biodiversity assessment was therefore undertaken at the time based on the likely requirements of a Species Impact Statement in accordance with the guidelines recommended by the then National Parks and Wildlife Service for other road projects such as the Bulahdelah Pacific Highway upgrade. The methodology adopted for the biodiversity assessment was consistent with the guidelines. It is, therefore, considered that a comprehensive field assessment has been designed and implemented to determine the impacts of the proposal on biodiversity.

Details of the methods used have been presented in Section 2 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a).

- Threatened fauna sightings were generally concentrated into small clumps, particularly so in the Collombatti area (Seven Hills Road) shown on Figure 11-4d. This issue was raised by the Department of Environment and Climate Change in its review of the draft Environmental Assessment, but was not addressed in this Environmental Assessment version.

Submission No.43

The comment from DECC is noted. However, following direct discussions between the project ecologist and Department of Environment and Climate Change during the review of the draft Environmental Assessment, it was agreed that the issue would be clarified as part of this Submissions Report.

The RTA confirms that the clumped observations presented in the Environmental Assessment are a result of the methodologies adopted during the fauna surveys. Those methodologies adopted during the fauna surveys are detailed in the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a). As is standard in such surveys, a number of survey sites were chosen based on a standard stratification of the study area. At each of these sites a range of standard survey techniques were employed, including ground and tree Elliott trapping, pitfall trapping, cage trapping, hair tubes, harp trapping, Anabat call detection, call playback and spotlighting. This means that at each site a number of different species were recorded, resulting in clumping in the distribution of records. This is a standard pattern seen in fauna surveys carried out over large areas. The surveys are designed to give a representative sample of the area and not provide total coverage. The assessment carried out used these recordings as an indicator of the likelihood of threatened species in the study area.

- Figure 11-4f in the Environmental Assessment indicates that there was only one reported recording of threatened fauna (Masked Owl) in the entire northern section of the study area (Tamban State Forest). This is despite Section 11.3.3 stating that the area provides for significant foraging resources for the threatened Glossy Black-cockatoo as well as habitat for Brush-tailed Phascogales, large forest owls and micro bats. Considering this, the Department of Environment and Climate Change requests further information regarding survey methodology and effort that justifies this single threatened fauna recording. If adequate justification cannot be provided,

Department of Environment and Climate Change would expect that further survey work be conducted in this area.

Submission No.43

The issue raised by the Department of Environment and Climate Change is noted.

Eight threatened species were recorded at this site during investigations and are mapped in Figure 4.2 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a). An error was made in Figure 11-4f of the Environmental Assessment and these records were not displayed, however they are identified in Figure 11-4e. This error was graphical and does not change the outcomes or conclusions of the environmental assessment.

The following threatened species should have been displayed on Figure 11-4f:

- *Calyptorhynchus lathamii* - Glossy Black Cockatoo.
- *Tyto novaehollandiae* – Marked owl.
- *Mormopterus norfolkensis* – Eastern freetail Bat.
- *Miniopterus schreibersii* – Eastern bent-wing Bat.
- *Kerivoula papuensis* – Golden-tipped Bat.
- *Scoteanax rueppellii* – Greater broad-nosed Bat.
- *Myotis adversus* – Large-footed Myotis.
- *Miniopterus australis* – Little Bent-wing Bat.

Additionally, at Dry Site 9, immediately adjacent to Tamban State Forest, *Litoria brevipalmata* (Green-thighed frog), *Lophoictinia isura* (Square-tailed Kite), *Ninox strenua* (Powerful Owl) and *Pteropus Poliocephalus* (Grey-headed Flying Fox) were also recorded.

In total at Dry Site 10, 73 vertebrate faunal species were recorded including two amphibians, 46 birds, 22 mammals and three reptiles.

Details of the methods of survey used and the results are provided in the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a). One standard survey site was used in the area of Tamban State Forest (Dry Site 10), while Dry Site 9 was adjacent to the forest in the Barraganyatti area (see Figure 11-4e in the Environmental Assessment). Results of the surveys are provided in Appendix C of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a), while survey effort and methods are described in Appendix A of the same report.

- The following key specialised habitats were not investigated as recommended in Department of Environment and Climate Change's environmental assessment requirements:
 - o Large fig resources.
 - o Rocky outcrops.
 - o Remnant Native Vegetation.

It is our expectation that these issues be addressed and that mitigation and/or offset options are proposed.

Submission No.43

While the advice provided by the Department of Environment and Climate Change to the Department of Planning was considered by the RTA during the preparation of the Environmental Assessment, the Environmental Assessment was prepared to specifically address the environmental assessment requirements issued for the project by the NSW Department of Planning.

Section 3.2 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a) details the key specialised habitats within the project area, namely hollow-bearing trees and roosting resources, Allocasuarina and amphibian habitats.

Large figs were not common along the alignment. As indicated in Appendix B of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a), only two species of fig (*Ficus coronata* and *F. obliqua*) were observed along the route and only within two route survey segments (the route was divided into 31 segments). Rocky outcrops were similarly not present so as to be considered significant habitat features.

Remnant native vegetation has been detailed in the assessment both in terms of its community structure and the structure as general fauna habitat types. This is detailed in Section 3.2 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a). Impact to remnant vegetation has been detailed in Section 11.3.1 of the Environmental Assessment and fauna habitat loss has been detailed in Section 11.3.3 of the Environmental Assessment.

- The Environmental Assessment identified that habitat is likely to be lost for the following threatened species:
 - o Brush-tailed Phascogale.
 - o Koala.
 - o Glossy Black-cockatoo.
 - o Green-thighed Frog.

Only the Green-thighed Frog has had specific management action dedicated to the protection of this species. No specific mitigation measures were proposed for the Brush-tailed Phascogale, Koala, or Glossy Black-cockatoo. Mitigation strategies must be developed for all threatened species either directly or indirectly impacted by the proposal.

Submission No.43

Mitigation measures have been detailed in the Environmental Assessment and in Chapter 7 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a). These measures have focussed on addressing the broad categories of impacts such as vegetation clearing and habitat loss, habitat fragmentation and changed hydrology. Mitigation measures such as pre-clearing fauna rescue would benefit all species including the Koala, Brush-tailed Phascogale and Glossy Black-cockatoo. Other measures such as the provision of fauna underpasses would benefit species such as the Koala and Brush-tailed Phascogale. As detailed in Section 11.4.7 of the Environmental Assessment, it is proposed the areas within the road reserve not necessary for operation of the road are rehabilitated including the provision of foraging species such as Allocasuarina for Glossy Black-cockatoos.

Specific measures relating to provision of habitat for Green-thighed Frogs have been included in the Environmental Assessment since it was a specific requirement of the Department of Planning's environmental assessment requirements.

It should also be noted that in the development of the concept design for the project, the alignment was adjusted in a number of areas (particularly in the Collombatti area) to minimise the impacts on a number of fauna and flora species. The Glossy Black-cockatoo in particular was one threatened species that benefited from those adjustments.

Fauna fencing and crossings

- Only minimal reference is given to the design and positioning of fauna fencing. Fauna fencing is only proposed to extend 100 metres past the entrance of fauna underpasses. This is despite the Department of Environment and Climate Change's earlier recommendation of extending these fences to 200 metres. The Department of Environment and Climate Change acknowledges the proposal as mentioned in Section 11.4.2 of the Environmental Assessment that "Fauna underpass design, including the provision of fauna fencing, would be progressed during detailed design in consultation with the Department of Environment and Climate Change". However, we believe that fauna underpass and fencing design and construction should be conditioned so that these measures are designed and constructed to the satisfaction of the Department of Environment and Climate Change.

Submission No.43

The RTA is committed to providing adequate fauna crossings and fauna fencing and would continue to consult with the Department of Environment and Climate

Change on the design and location of these mitigation measures and seek agreement on the proposed fauna fencing and crossing designs. The RTA acknowledges that fauna fencing in areas of suitable vegetation would extend for a minimum of 200 metres on each side of the fauna crossing point and that the location and extent of the fencing would need to be determined during the detailed design phase in consultation with the Department of Environment and Climate Change. The delivery and maintenance of the fauna protection measures in a cost effective manner will be an important aspect of this project.

- It appears that many of the fauna crossing points identified in Figure 11-5 serve as farm crossings and combined drainage/fauna crossings. Also the fauna underpasses appear to be quite long in a couple of locations (such as near Crescent Head Road and near Seashore Lane) and careful consideration needs to be given to their functionality.

The current design of several fauna underpasses dedicated for Koala use limits the effectiveness of these structures in facilitating Koala passage. These structures do not meet the minimum requirement height of 3 metres (allowance for wild dog reach), and preferably 3.6 X 3.6 metres. The Department of Environment and Climate Change recommends that the design of these structures be revisited to more adequately provide unimpeded Koala passage. Discussions regarding Koala crossing structures should include consultation with recognised experts within Department of Environment and Climate Change and AMBS.

The study will need to follow rigorous scientific principles, use all available data and information sources and employ best management practice when deciding where to place fauna crossing structures. The study must also address detailed design, the frequency of structures required to meet the intended objective and an evaluation of the effectiveness of structures once completed. The location of fauna exclusion fencing should be discussed in consultation with the Department of Environment and Climate Change and agreement reached prior to CEMP approval.

Submission No.43

Details of fauna underpasses and fauna fencing would be finalised at the detailed design stage in consultation with the Department of Environment and Climate Change. This would take into consideration their use by various species and the length, size and requirements for various structures such as resting poles and fauna fencing.

We note DECC's comments regarding the fauna underpasses on previous projects as well as DECC's preference for larger culverts for Koala passage. However, it should be noted that the current design of fauna underpass structures for the proposed upgrade are not aimed at being dedicated solely for Koala use, but rather that the Koala is one of hopefully many species that would make use of the proposed fauna underpass structures.

While the RTA will endeavour to finalise the details of fauna underpasses and fauna fencing prior to the approval of the CEMP by the Department of Planning,

it is possible given the length and the options available for the staging of the project, that the CEMP may be submitted prior to the completion of the detailed design work for the full length of the project. Under this situation, the CEMP and associated management plans would contain as a minimum the general principles to be applied for the design and placement of the fauna crossing/exclusion facilities which would be determined in consultation with the Department of Environment and Climate Change. The actual details of the fauna crossing/exclusion facilities would then be finalised in consultation with the Department of Environment and Climate Change following the approval of the CEMP.

- The Department of Environment and Climate Change recommends that greater provision be given for fauna passage within Tamban State Forest, particularly within areas represented in Figures 11-4E and 11-4F. The current proposal of fauna crossing in these areas appears inadequate, considering the habitat value of this region.

Submission No.43

Considerable work has been undertaken during the development of the concept design to adjust the alignment to reduce the impacts on Tamban State Forest (Refer Chapter 5 of the Environmental Assessment). The opportunities for providing additional fauna crossing points in the Tamban State Forest area are limited by the topography and the fact that the proposal is in cutting in much of that area (Figure 6-1p and 6-1q of the Environmental Assessment). However, during the detailed design, the RTA would review the options available for fauna passage in the area of Tamban State Forest in consultation with the Department of Environment and Climate Change and Department of Primary Industries (Forests). This may include the shared use of suitable drainage structures.

Nest Box Placement

- A detailed field study including a habitat assessment will need to be conducted in adjacent areas identified for nest box locations and at fauna crossing points prior to construction. The study should aim to:
 - o Identify available hollow resources (to clarify existing hollow density).
 - o Clarify the types of nest boxes required.
 - o Identify foraging resources (appropriate resource for relocated individuals).
 - o Investigate arboreal fauna population dynamics (present population makeup and requirements).

In addition to the above study, a commitment needs to be made to nest box maintenance and monitoring.

Submission No.43

RTA would develop and implement a nest box strategy in consultation with the Department of Environment and Climate Change that would include, but not be limited to:

- Identifying hollows to be removed.
- Outlining clear objectives for nest box placement.
- Assessing the availability of hollows in the surrounding area.
- Detailing numbers and types of nest boxes required.
- Detailing locations of nest boxes.
- Monitoring and management requirements.
- Availability of suitable land tenure (and suitable habitat) for nest box location.

The strategy would be developed and implemented prior to commencement of construction.

Investigations into arboreal fauna population dynamics was not a part of the Department of Planning's environmental assessment requirements or Department of Environment and Climate Change requirements. The RTA considers that investigation into the above dot points in consultation with the Department of Environment and Climate Change would provide reliable information to develop an appropriate nest box strategy without the need for fauna population studies.

Impacts on specific species

- The assessment clearly identifies the predicted significant impacts on the Brush-tailed Phascogale associated with the proposed upgrade, namely the removal of hollow-bearing trees and the fragmentation of habitat. However, little detail is provided addressing the population extent and any proposed mitigation measures. The Department of Environment and Climate Change recommends that this detail be included in the Environmental Assessment. Effective mitigation measures can only be employed and evaluated if pre-development population dynamics are studied and understood. When proposing mitigation structures, clearly defined and measurable goals must also be established. Any mitigation measures of value to the Brush-tailed Phascogale can only be achieved subsequent to a rigorous Brush-tailed Phascogale population study scaled within the wider regional context and related back to the proposed upgrade.

Submission No.43

The location and suitability of habitat for the Brush-tailed Phascogale was considered in the impact assessment when developing mitigation measures. Mitigation measures for the Brush-tailed Phascogale have been included in the proposal, these are recognised as being effective for arboreal/scansorial mammals including:

- Pre-clearing survey/fauna rescue.
- The provision of nest boxes.
- Fauna underpasses, including provision of Phascogale-proof fauna fencing in key areas.
- Reduced clearing in sensitive areas.

The need to monitor the effectiveness of these mitigation measures will be further discussed with the Department of Environment and Climate Change.

The impact assessment for the Brush-tailed Phascogale was completed taking into consideration these mitigation measures and the loss of key habitat and resources (see Figure B21 in the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment). It is however recognised that the mitigation measures by themselves would not totally ameliorate the impacts for this species. The RTA would undertake a one-off monitoring program for Brush-tailed Phascogale presence in the areas identified as potential habitat for this species prior to the commencement of clearing in those areas.. This monitoring would be undertaken in consultation with the Department of Environment and Climate Change.

Detailed population studies were not requested as part of the Department of Planning's environmental assessment requirements.

- The greatest threat to the local Koala population will come as a result from the fragmentation of habitat and the creation of a barrier to Koala movement. The assessment suggests the study area does not contain significant numbers of Koala nor does it contain core Koala habitat, however the view is presented that the habitat within the study area is considered as transient habitat. As such the proposal should include detailed studies identifying Koala movement corridors and a detailed proposal identifying ideal crossing points and structures. The studies and proposed structures should deliver a clearly defined and measurable conservation goal aimed at reducing threats to the local Koala population.

Submission No.43

The assessment of the distribution of koalas included consultation with local residents associated with koala rescues (see Figure B22 in the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment) and included identification of Koala hotspots and movement corridors (e.g. Pola Creek).

Mitigation measures have been included in these locations as shown in Figures 11-4a to 11-4f. These measures included the provision of connectivity under the bridge at Pola Creek and will be further developed at the detailed design phase in consultation with the Department of Environment and Climate Change.

Detailed population movement studies were not requested as part of the Department of Planning's environmental assessment requirements.

- No mitigation measures are proposed in Environmental Assessment regarding the Glossy Black-cockatoo. The Department of Environment and Climate Change suggests the proponent detail a strategic revegetation plan specifically aimed at reducing the long term impact of habitat loss for this threatened species.

Submission No.43

As discussed in Section 11.4.7 of the Environmental Assessment, the proposed mitigation measures for minimising the impacts of the project on the Glossy Black-cockatoo include:

- The provision of nest boxes in areas where natural hollows are not abundant.
- Strategic planting of feed tree species such as Allocasuarina as part of the overall rehabilitation of areas within the road reserve.

It should also be noted that the alignment of the proposal was adjusted significantly during the environmental assessment phase to minimise the impacts of the project on the habitat of the Glossy Black-cockatoo.

- The mitigation measures included in the assessment regarding the Black-necked Stork state appropriate sediment control measures would be put in place around all proposed waterway crossings prior to construction to ensure minimal change in water quality of the waterways due to run-off. The Department of Environment and Climate Change supports this control measure around waterways and would like to see this written into the CEMP for consideration for all water crossings. The assessment also acknowledges it will likely change hydrological regimes. Given this predicted impact, the proposal design should seek to ensure that natural drainage conditions and hydrological flows in wetland areas are either maintained or improved. The proponent should demonstrate how they will achieve this.

Submission No.43

The RTA acknowledges the Department of Environment and Climate Change's support of the proposed control measures with regard to the Black-necked Stork.

As noted in Section 13.3.1 of the Environmental Assessment, the design of the proposed upgrade would allow the natural flow regimes and existing flow paths to be maintained. Specifically, as noted in Section 13.3.2, the proposed upgrade incorporates sufficient transverse drainage infrastructure to maintain surface water flow regimes to wetland areas.

Mitigation measures aimed at maintaining or improving water quality are detailed in Section 21.1.4 of the Environmental Assessment. The detailed design of the sediment control measures would be undertaken in consultation

with the Department of Environment and Climate Change and would be included in the CEMP for the project.

- Pre-construction surveys in the study area should target nest trees for possible breeding pairs of Square-tailed Kite. Targeted surveys should not be limited to watercourses in view of previous records of Square-tailed Kite nests adjacent to the Pacific Highway (Debus, et al). If a Square-tailed Kite nest is located, specific mitigation measures to offset impacts will need to be developed in consultation with the Department of Environment and Climate Change.

Submission No.43

As detailed in the mitigation measures in Section 11.4.7 of the Environmental Assessment a pre-clearing fauna rescue program would be implemented which would consider such species as the Square-tailed Kite. The program would include identification of significant habitat features including bird nests and would be developed in consultation with the Department of Environment and Climate Change. If a Square-tailed Kite nest is located, mitigation measures would be developed in consultation with the Department of Environment and Climate Change.

- Results from the biodiversity field survey demonstrate the presence of threatened Large Forest Owls. Considering this and the large number of suitable hollows within the study area, it is recommended that pre-construction surveys target suitable breeding trees for owls and alternative resources be provided at the time if breeding owls are located. Alternatively, consideration could be given to clearing and grubbing in times to avoid breeding season.

Submission No.43

As discussed in Section 11.4.1 of the Environmental Assessment and detailed in the mitigation measures in Section 11.4.7 of the Environmental Assessment a two stage clearing program, successfully implemented on previous Pacific Highway projects, will be implemented for this Proposal. This includes pre-clearing fauna survey(s) and rescue program which would contain measures for the threatened species identified in the Environmental Assessment, including the large forest owls. This survey and rescue program would be developed in consultation with the Department of Environment and Climate Change prior to construction commencing. It would consider options for retaining nesting trees occupied by the large forest owls during the clearing operations until chicks have hatched if required.

- The assessment concludes eight threatened species of microchiropteran bat species are likely to be affected by the proposal, primarily through the loss of foraging and roosting habitat. The assessment needs to include proposed mitigation measures to limit the loss of this habitat. The Department of Environment and Climate Change recommends the early placement of artificial bat boxes in adjacent habitat to provide bats with an opportunity to establish alternative roosting sites prior to clearing.

Submission No.43

The provision of boxes suitable for bats would be included in the nest box strategy developed as part of the CEMP. The placement of bat boxes in adjacent habitat will be undertaken prior to the commencement of clearing in consultation with the Department of Environment and Climate Change.

- The Department of Environment and Climate Change strongly opposes the conclusion that the proposal "is unlikely to fragment the population in the local area to any great extent". The Yellow-bellied Glider requires access to a large range of feeding resources that are available in a mosaic both spatially and seasonally. The proposed upgrade will provide an impermeable barrier to normal glider movement (30 to 50 metre gliding distance under ideal conditions) and hence glider survival. As such, appropriate and demonstrably effective structures should be included in the design of the proposed upgrade to facilitate glider movement. This could include the consideration of retaining a section of suitable trees in the road median.

Submission No.43

Survey for Yellow-bellied Gliders was carried out by a team experienced in the identification of feed trees. As noted by the Department of Environment and Climate Change the identification of feed trees is a relatively straight forward exercise given the visible scarring on the trunk, yet no feed trees were observed within the area of investigation. The limitations of this method of detection are discussed in Section 3.2 and 3.3 of the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment.

Call playback was carried out on both sides of the proposed highway and focussed on where more suitable habitat was recorded (e.g. hollow-bearing trees – see Figure 3-1 of the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment.) As noted in Section 5 (page 5-82) of the Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Working Draft) (Department of Environment and Conservation 2004), call playback broadcasts are likely to be heard at distances of up to 1 kilometre, therefore all the broadcast sites are likely to cover the entire sites.

The majority of the resources suitable for Yellow-bellied Gliders and the records of the species themselves were recorded to the west of the proposed highway (see Figure 3-1 of the Environmental Assessment Supporting Biological Information). This supported the earlier records of Yellow-bellied Gliders in the local area.

The field surveys undertaken in March 2007 confirmed the presence of a resident Yellow-bellied Glider family within the study area and identified suitable potential den resources either side of the proposal. The area in question is considered to be on the eastern edge of an extensive patch of vegetation. Further to the east is the Macleay floodplain, which is unlikely to support Yellow-bellied Gliders. This distribution of vegetation can be seen in Figure 2-1 of the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment.

It should be noted that as shown in Figure B20 of the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment, there are very few records of Yellow-bellied Gliders in the local area and certainly none within the area of Doughboy Swamp or within the Macleay Floodplain. These studies indicate the majority of suitable habitat is located west of the proposed alignment and that only a very small area of habitat is located to the east in this area (smaller than the home range of an individual animal or family group). As such it is unlikely that the proposal would result in fragmentation of habitat. It is however likely to result in a contraction of habitat for this species, but not to any significant extent.

Yellow-bellied Gliders have been recorded gliding distances up to 140 m, although clearing of habitat at distances much smaller than this can create a barrier, depending on the nature and quality of habitat on either side of the barrier.

It is considered that the inclusion of crossing structures in this location, such as rope bridges or gliding poles would not provide access to any significant movement corridor or to areas of habitat in the east.

Endangered Ecological Communities (EEC)

- The Department of Environment and Climate Change would like to see details of the mitigation measures proposed in the Environmental Assessment, i.e. revegetation plans and Acid Sulfate Soil control, so their effectiveness can be included as part of assessing overall project impacts to EECs (such as the River Flat Eucalypt Forest, Swamp Sclerophyll Forest and the Swamp Oak Floodplain Forest). The assessment needs to detail broad regeneration plans and the scope of public involvement in such activities. Where will this regeneration occur and with what specific aim? For example, is it to regenerate EEC within the RTA road reserve or invest in compensatory planting where fragmented patches occur? The Department of Environment and Climate Change requests clarification on these issues.

In addition, the assessment needs to include details of steps taken to avoid EECs so consideration can be given in the evaluation of impacts to EECs and the subsequent conclusions reached in this assessment of significance.

Submission No.43

A detailed revegetation/landscape plan would be developed in consultation with the Department of Environment and Climate Change prior to the start of construction. However revegetation has not been proposed as a specific mitigation measure for River Flat Eucalypt Forest, Swamp Sclerophyll Forest or Swamp Oak Floodplain Forest, although it is possible that it may play a small role in ameliorating impacts by providing a buffer to existing patches. Impacts to these communities are proposed to be offset as part of the compensatory package.

The general principle of avoid, minimise and mitigate has been applied to the project and a number of locations where the project was modified to avoid threatened biodiversity have been described in Section 5.3 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a).

As detailed in Section 12.4 of the Environmental Assessment, an Acid Sulfate Soil Management Sub-Plan would be prepared and implemented in consultation with the relevant government authorities as part of the CEMP. The Sub Plan would include a contingency plan to deal with the unexpected discovery of actual or potential acid sulfate soils, and measures to manage acid sulfate soil impacts, such as those highlighted by the Department of Environment and Climate Change.

- The assessment notes that minor changes to surface hydrology may occur with regards to freshwater wetlands. No information is given on what these hydrological changes are. The detailed description of the specific changes to the hydrology of the freshwater wetlands (both in the study area and adjacent wetlands) should be included in the assessment given the conclusion that the changes are not significant enough to affect the survival of the EEC.

The assessment also notes that as the freshwater wetlands are already fragmented the proposal will not significantly increase the fragmentation of the wetlands. The Department of Environment and Climate Change does not share this view. The proposal will clearly reduce the size and isolate freshwater wetlands in the region. Because the extent of freshwater wetlands in the Macleay floodplain has already been significantly fragmented, mitigation should be considered for any further fragmentation.

To address this issue, it is recommended that the RTA propose adequate and suitable mitigation measures to compensate for the loss of wetland connectivity. The proponent also needs to comprehensively and quantitatively explain how it will maintain and restore natural drainage conditions. For example, how will flows alter in terms of quality and quantity (volume, direction)?

Submission No.43

Details of the hydrology of the area and likely impacts are discussed in Chapter 10 of the Environmental Assessment.

As noted in Section 13.3.1 of the Environmental Assessment, the design of the proposed upgrade would allow the natural flow regimes and existing flow paths to be maintained. Specifically, as noted in Section 13.3.2, the proposed upgrade incorporates sufficient transverse drainage infrastructure to maintain surface water flow regimes to wetland areas.

Mitigation measures aimed at maintaining or improving water quality are detailed in Section 21.1.4 of the Environmental Assessment.

The Freshwater wetlands within the site are composed mostly of wet meadow vegetation, occurring as small patches generally surrounded by grazed grassland. The majority of the wetlands within the site (14.5 hectares) are generally in poor condition, have a high level of weed invasion and provide limited habitat for fauna. As such the RTA maintains that the current extent of freshwater wetlands within the study area is already highly fragmented and that the proposal would not significantly increase the level of fragmentation.

As detailed in Section 7 of the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment, a package of compensatory habitat would be negotiated with relevant agencies including the Department of Environment and Climate Change. The provision of compensatory habitat would be based on the impacts on key habitat, including wetlands.

General impacts

- The proposal unnecessarily impacts on vegetation and fauna habitat and corridors.

Submission No. 9, 16, 20, 40

Impacts of the proposal on flora and fauna have been addressed in Environmental Assessment Technical Report 2 Supplementary Ecological Assessment. Where possible, impacts to areas of biodiversity have been avoided, impacts minimised or mitigated and where necessary a comprehensive offset package would be developed for the project.

- The proposal will impact on aquatic and terrestrial fauna in East Kempsey including Pola Creek.

Submission No.27

The nature and extent of impacts have been detailed in the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a). Significant natural features such as East Kempsey Wetlands (and the associated Grey-headed Flying Fox camp) have been avoided in the route selection process. The provision of a bridge at Pola Creek would reduce the need for vegetation clearing at this point and would meet the requirements of Department of Primary Industries for fish friendly passage.

- Noted that proposal will have minimal impact on NSW Forests' resources.

Submission No.31

Noted.

- No flora and fauna studies undertaken on Property No. 101. Impacts on Barraganyatti Creek have not been considered.

Submission No.37

Access to this property was not granted at the time of survey. However survey was completed in nearby habitat area which was considered representative of habitat on Property No. 101.

Barraganyatti Creek was not accessed for survey as noted, however as described on page 3-25 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a), a site downstream was surveyed and was considered to be representative of the creek.

- The alignment passes through an area of swamp land that has an abundance of biodiversity, including koala and flying fox.

Submission No.41

During the route selection phase of the project, the alignment for the proposed upgrade was changed at Crescent Head Road to minimise impacts across a range of features including the wetland area, a flying fox colony, the Seventh Day Adventist school and businesses following consultation with the community and relevant government agencies as described in Section 5.1.1 of the Environmental Assessment. Following this re-alignment of the proposed upgrade, it would no longer pass through either the wetland area or flying fox colony near Crescent Head Road.

- Ecological studies must be checked for currency should the project start date be delayed.

Submission No.44

If significant delays are encountered which affect the project construction commencement date (especially if it goes outside the period allowed in the Conditions of Approval for the start of substantial work on the project), the RTA would consult with the Department of Planning and relevant Agencies to determine if the current ecological studies require updating. It is also proposed that a number of mitigation measures such as fauna crossing points and fauna fencing would be further considered during the detailed design phase of the project and refined in consultation with the relevant Agencies.

- The proposal will remove core koala habitat and create a barrier to movement.

Submission No.48

As indicated in the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a), the area is not considered to be core Koala habitat but rather contains habitat likely to be used by Koalas on a transient basis. Mitigation measures have been included so as to maintain connectivity.

Aquatic biodiversity

- There are numerous obstructions to fish passage across the floodplain and removal of these barriers should also be included in any compensation package.

Submission No.45

While it is acknowledged that numerous obstructions to fish passage may occur across the Macleay floodplain, almost all of those obstructions are located

outside of the proposed highway corridor. Further to this, the majority of these obstructions to fish passage are in the form of floodgates, weirs, levees and field drains installed, controlled and maintained by landowners, Kempsey Shire Council and government agencies in association with ongoing agricultural pursuits and flood immunity issues.

A package of compensatory habitat measures would be negotiated with relevant agencies, including the Department of Environment and Climate Change, as indicated in Chapter 7 of the EA Technical Report 2 Supplementary Ecological Assessment. If appropriate, measures involving the removal of blockages to fish passage, within the proposed highway corridor would be considered. However, any measures dealing with blockages located outside the highway corridor would need to be discussed with the relevant landowner. Any existing facility that is acting as a potential blockage to fish passage and which is located outside the proposed highway corridor, lies outside the RTA's authority and any changes to these facilities would therefore remain the responsibility of the landowner, Kempsey Shire Council or the relevant Agency.

It is also noted that the Department of Primary Industries has indicated that the classification of waterways within the project area and the provision of stream crossing structures in association with the project meet their requirements for fish passage.

- [Destruction of wetlands with no provision for compensatory wetland is unsatisfactory and should not be permitted.](#)
[Submission No.45](#)

As detailed in Table 7-1 of the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment, 14.5 hectares of freshwater wetlands would be directly affected by the proposal, with a further 9.7 hectares affected by new edge effects. Section 7 of that Report also indicates that a compensatory habitat package would be developed in consultation with the relevant agencies including the DECC. The development of this package will include consideration of a range of possible options and could include provisions to cover impacts on wetlands.

It should also be noted that the RTA has a good record of mitigating for impacts on wetlands on a range of Pacific Highway Upgrade Program projects including Cooperbrook, Karuah and Bulahdelah to Coolongolook.

- [Consideration needs to be given to impacts of staging and timing of construction on migratory fish and fish passage \(e.g. Australian bass\).](#)
[Submission No.46](#)

Impacts of the project on fish passage and fish habitat (including migratory species such as Australian bass) have been addressed in the Section 6.7 and 6.8 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a).

- The Environmental Assessment has not sufficiently assessed risks to fish habitat and potential mitigation measures.

Submission No.46

The Environmental Assessment has classified stream crossings according to the Department of Primary Industries fish friendly waterway crossing guidelines and has proposed crossings that meet the requirements of these guidelines. At the detailed design stage, the Department of Primary Industries would be consulted as to the adequacy of these structures. Impacts to fish habitat can come from a range of sources as detailed in Section 6.7 and 6.8 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a). Mitigation measures would cover a range of measures including soil and erosion management plans, designs of crossing structures and maintenance of water quality.

- The Environmental Assessment needs a description of the proposed width of the alignment including predicted temporary crossings and haulage routes to identify footprint over waterways and their impacts on aquatic vegetation.

Submission No.46

Section 6 of the Environmental Assessment contains the concept design of the proposed upgrade. Section 7 of the Environmental Assessment includes details of the project footprint and corridor width. At this stage of the development of the project, no temporary crossings or haulage routes have been proposed or identified which would be outside the proposed construction footprint. The identification of a requirement for such facilities would be subject to the outcomes of detailed investigations and design, the construction methodology and any staging proposals that may be adopted, the timing of the construction and the construction contractor selected. If temporary crossings or haulage routes are deemed necessary, the impact of these facilities on waterways and aquatic vegetation would be assessed separately and appropriate mitigation measures developed in consultation with the relevant Agencies.

As discussed in Section 11.4.4 of the Environmental Assessment and in further detail in Sections 7.3 to 7.5 of the Project Application Report Supporting Information Ecological Assessment (NSW Roads and Traffic Authority 2006a), the project is expected to have limited aquatic impacts apart from the construction of waterway and wetland crossings. All waterway crossing structures would be designed according to NSW Fisheries guidelines. Construction methods and processes would be chosen to minimise damage to aquatic habitat and riparian vegetation during construction as much as possible.

2.2.10 Geology and soils

The following submissions were received with regards to geology and soils.

Acid sulfate soils

- Concern over potential impacts of disturbance of acid sulfate soils during construction.

- Further consideration of Acid Sulfate Soil Management Plans needs to include consultation with Kempsey Shire Council.
Submission No. 20, 44

As discussed in Section 12.3.4 of the Environmental Assessment, a high risk of the presence of acid sulfate soil material has been identified in a number of areas along the proposed upgrade (refer Figure 12-2 of the Environmental Assessment for acid sulfate soil risk mapping relevant to the study area). The presence of acid sulfate materials in line with the mapped areas was confirmed by laboratory analyses, with acid sulfate soils in the study area predominantly associated with alluvium material of the Macleay River floodplain.

As outlined in Section 12.4.4 of the Environmental Assessment the operation and construction of the proposed upgrade through areas of acid sulfate soils have been considered in the development of the concept design for the proposal and would be further considered during detailed design.

In addition, an Acid Sulfate Soils Management Plan would be developed for the proposed upgrade. The plan would be developed in consultation with the relevant government departments and Kempsey Shire Council. The RTA has guidelines for managing acid sulfate soils, which would be used in the development of the management plan and referred to throughout the construction phase.

Soft soils

- Concern over potential risk of constructing embankment and operating construction vehicles over soft soils.
Submission No.26

The Environmental Assessment identifies that the soils of the Macleay River floodplain, the East Kempsey wetland and the Collombatti Creek floodplain tend to be soft and compressible, requiring the application of appropriate construction techniques to reduce post-construction settlement. The amount of settlement expected in association with construction of fill embankments across soft floodplain sediments is considerable. However, the magnitude and rate of settlement would vary depending on a range of issues including the thickness of soft sediments, the physical composition of the soft materials and the application of management techniques during design and construction.

The RTA has had considerable experience and success in managing this issue on other Pacific Highway projects such as the Ballina bypass, Karuah bypass and Yelgun to Chinderah upgrade. Various methods for the treatment and/or management of soft soils would be considered and applied on a site specific basis. Appropriate construction techniques may include loading with temporary fill to induce consolidation, reducing the amount of residual settlement expected following construction of road pavement and bridges. Other methods such as the use of vertical wick drains, support piles or columns and vacuum consolidation would also be considered. Further detailed geotechnical work would be undertaken during detailed design to investigate these and other techniques and to identify the extent and specific properties of soft sediments in

each location. This would allow the determination of the extent and duration of surcharge (fill loading) required and the most suitable techniques for each site.

The removal of soft soils is not considered a viable option. A staged approach would be applied during construction, allowing suitable time for the placement of surcharge material and consolidation of soft soils.

2.2.11 Hazard and risk

The following submissions were received with regards to hazard and risk.

Disturbance to horses

- Horses will be disturbed on the property due to the proposal and during trail rides along adjoining trails and roads, particularly Inches Road where an overpass is proposed.
- Concern over safety risks due to proximity to horse training area which is used by children.

Submission No. 8, 10, 37

The design of the proposal has improved the road geometry (horizontal and vertical alignment) to allow safer and more efficient travel along the highway. In achieving such a design, the noise associated with particular events such as accidents and the use of air brakes or gear changes by heavy vehicles should be significantly reduced. The normal background noise generated by the proposal would be more uniform in nature and is therefore considered to be unlikely to disturb domestic animals such as horses.

Potential construction noise impacts on adjacent landowners would be considered in consultation with landowners, Kempsey Shire Council and relevant Agencies during the development of the Construction Noise and Vibration Management Sub Plan for the project. This Plan will contain appropriate measures to deal with any potential impacts identified during the development of the Sub Plan.

The specific use requirements of all overpasses, including the Inches Road overpass, would be considered during the detailed design of bridge structures. A throw-over protective screen would be included on the Inches Road overbridge, which would provide some visual shielding for animals such as horses from traffic below. The Inches Road overpass bridge would be a full width bridge and would probably have a bitumen or asphaltic concrete wearing surface that would look similar to the existing road surface at this location. This should also assist with the movement of horses as it would not form a markedly different construction that could baulk the animals. An alternative route from Inches Road north to Old Station Road may also be available using proposed access tracks to the east of the proposal in this area, connecting the RLPB stock reserve to both Inches and Old Station roads. However, horse-riders would be responsible for negotiating access through this property with the RLPB.

Pedestrian impacts

- Concern over safety risks associated with small children playing near Bingis Lane if it is opened up to provide access to Mountain Nursery.
Submission No.16

Due to the changed role and upgrading of Bingis Lane, the RTA would consider the need to provide or upgrade the property boundary fencing for the properties adjoining Bingis Lane during the detailed design phase in consultation with the affected landowners. However, the regulation of the use of Bingis Lane or implementation of traffic calming provisions lie outside the scope of the project and would be the responsibility of Kempsey Shire Council.

Emergency access

- Loss of informal emergency access to the rear of Hills Lane towards Tamban State Forest.
- Further consultation required with NSW Forests to ensure fire trail network is maintained.
Submission No. 28, 31, 46

An emergency evacuation plan for residents in the Hills Lane area would be prepared during the detailed design phase of the project in consultation with the Rural Fire Service, Emergency Services and adjacent landowners.

The proposed upgrade would not directly affect the fire trail network in Tamban State Forest. However, an access point into the Tamban State Forest at Hills Lane would be cut. This issue has been previously discussed with the local Emergency Services committee (including NSW Forests representatives) and was not considered to be a major issue as other access points would still be available in the area. Further consultation would be undertaken with NSW Forests and Emergency Services with regard to this issue prior to the commencement of construction to ensure the fire trail network is not compromised.

Road safety

- Fog hazard on section of road across low lying areas.
Submission No.26

Fog hazard was identified as a potential climatic issue during the route selection phase of the project. Much of the existing highway between Kempsey and Clybucca is already subject to some degree of seasonal fog hazard, although this existing situation is not considered to be a major road safety concern. Standard fog hazard signage and enhanced delineation would be installed if required at locations where visibility may be impaired by regular fog events. The positioning and type of any signage delineation required would be identified in accordance with RTA Road Design Guidelines during the detailed design phase of the project.

- Potential for cars to be swept off the road during floods.
Submission No.29

The proposal would increase the flood immunity of the highway in comparison to the existing scenario from less than the 1-in-5 year up to the 1-in-20 year flood event. It is expected that the current arrangements to protect road users by closing the highway in flood and other emergencies would be kept in place. It is also expected that road user safety would be improved by the increased flood immunity of the highway as the RTA, Police and Emergency Services personnel would have more time than was previously available to plan and implement the necessary highway closure in major flood events.

- Blasting at Church Hill Quarry will be dangerous to traffic on the highway.
Submission No.16

The quarry operations are discussed in Section 15.4.5 of the Environmental Assessment. The proposed upgrade is located clear of the current quarry operations area, however, it would be the responsibility of Kempsey Shire Council as the quarry operator to ensure that the ongoing operation of the quarry does not impact on any adjacent land uses.

The RTA would consult Kempsey Shire Council prior to the commencement of construction of the proposal to ensure that any access and safety considerations at the Bingis Lane underpass with regard to the Church Hill Quarry operations are addressed.

- The proposed upgrade would increase the number of B-doubles using side roads.
Submission No. 17, 23

The proposed upgrade may be more attractive to heavy vehicles such as B-doubles because of the improved safety and efficiency of the route. However, due to the limited access to the proposal from the local road network (which would only be available at the interchanges) it is not expected to generate any greater use of local roads by heavy vehicles.

Further to this, the movement of B-doubles is regulated by the RTA in consultation with the relevant council.

- The proposal will save lives and injuries caused by accidents.
Submission No.47

Noted. One of the objectives of the Pacific Highway Upgrade Program is to significantly reduce road accidents and injuries.

2.2.12 Traffic, transportation and access

The following submissions were received with regards to traffic, transportation and access.

Access to private property

- Access to Mountain Nursery via Trappaud Road should be maintained by providing an overpass or an underpass rather than providing new access via Bingis Lane.

Submission No.16

Access to Mountain Nursery has been provided via Bingis Lane rather than Trappaud Road as the proposed underpass at Bingis Lane would be more cost effective than any possible overpass options at Trappaud Road. The provision of an overbridge at Trappaud Road would be difficult and expensive due to the topography, the size of the proposed cutting and the alignment of the existing roadway. Further to this, it is considered that the Bingis Lane option would provide greater ease of access overall and would allow for better use of a structure that would have to be provided at this location for drainage, fauna and access reasons.

- Access and safety issues associated with entry/exit to 178 Crescent Head Road.

Submission No.4

A new entry/exit point would be provided in the form of a graded access way, which would allow for access from the property to Crescent Head Road near the junction with Bruces Lane. The exact location and design of the new access point would be determined in consultation with the property owner during the detailed design phase of the project.

- Access will be restricted on Inches Road during construction.

Submission No.9

Access along Inches Road would be maintained throughout the construction phase. Construction phase traffic impacts on local roads would be managed through a Construction Traffic Management Plan, which would be prepared in consultation with the community and Kempsey Shire Council. This plan would be implemented by the construction contractor to ensure the safe and efficient movement of local traffic and also reduce inconvenience to local residents. Any temporary diversions or changes to existing access routes would only be done after consultation with affected residents and Kempsey Shire Council, and would be publicised in local media prior to the changes being made and identified on site by the use of clear sign posting.

- Access to Property No.18 to be maintained during construction and operation.

Submission No.49

Access to Property No.18 would be maintained throughout the construction phase.

- Existing paper road on Property No.51 would be cut off by the proposal.
Submission No.26

There are two paper roads on the perimeter of Property No.51. Red Hill Lane continues as a paper road to the eastern boundary of the property. Access would be maintained to the end of this road as the proposed upgrade is on viaduct at this location. The second paper road, on the northern boundary of the property, is severed by the proposed upgrade. However, as illustrated in Figure 6-1f and Figure 14-6b of the Environmental Assessment, access to the isolated sections of this property and the paper road, as well as the adjoining properties would be provided via a gravel road passing under the second floodplain bridge just to the north of the paper road.

- Clarification required on B-Double access between Tambar State Forest and proposed highway.
Submission No. 31, 46

All existing B-Double access between Tambar State Forest and the existing highway would be retained. B-Double access to the proposed upgrade would be provided via the Stuarts Point Road interchange.

- A new culvert crossing should be provided at a low point on Hill Lane to maintain access during high rainfall events.
Submission No.28

As outlined in Table 14-5 of the Environmental Assessment, the existing timber bridge on Hill Lane between the proposed upgrade and the Pacific Highway would be upgraded. This would most likely be in the form of a concrete culvert to allow access during high rainfall events, however the most appropriate structure would be determined during the detailed design phase.

It is also possible that Hill Lane could be used as an access point to the proposed upgrade during the construction phase of the project. If this was an option then agreement would have to be reached with Council with regard to any upgrading work required to allow for its use by construction vehicles and the requirements for re-instatement of the road following the completion of the construction phase.

Local roads

- Will Inches Road be sealed?
Submission No.24

On completion of construction, existing roads would be reinstated to similar condition to existing, in consultation with Council. In the case of Inches Road, any work undertaken in the section that is already sealed would be re-instated as a sealed road.

- Bingis Lane should be sealed and traffic calming devices installed.
- Restrictions should be placed on use of Bingis Lane by heavy vehicles.
- Who will be responsible for the ongoing maintenance of Bingis Lane?

Submission No.16

The current concept design proposes that Bingis Lane would be upgraded with a gravel road surface only. The existing access to the Mountain Nursery property via Trappaud Lane, which the Bingis Lane connection would replace, is also a gravel road. However, further assessment of the required road standard (including the need for sealing) on Bingis Lane would be undertaken during the detailed design phase in consultation with Kempsey Shire Council.

The proposed Bingis Lane connection would be suitably graded to allow use by heavy vehicles, in line with the existing access facilities for the Mountain Nursery property. However, Kempsey Shire Council would be responsible for any decision or action required to change the access arrangements for the Church Hill Quarry with regard to the use of the proposed Bingis Lane connection.

Council would also be responsible for the regulation of the use of the road by heavy vehicles, the introduction of speed limits or the implementation of any other traffic calming measures deemed necessary on Bingis Lane in association with such a decision. When the proposed upgrade is opened to traffic, local road connections like Bingis Lane would most likely be handed over to Council for ongoing management and maintenance.

Road ownership and maintenance

- Kempsey Shire Council is not in a position to take additional roads under its responsibility due to funding constraints.

Submission No. 41, 44

The RTA would negotiate with Council the conditions for the handover of any newly constructed sections of local roads and bypassed sections of the existing highway during the detailed design and construction phase of the project. These negotiations would deal with issues such as the status of the roads to be handed over to Council, any funding issues associated with the handover and any works required as part of the handover process.

Construction traffic

- Impact of staged construction on traffic flow at tie in to existing highway at Frederickton.

Submission No.44

Any decision to stage the construction of the proposal would require temporary works and an appropriate delineation/signposting scheme to be constructed to allow vehicles to safely transfer from the new highway to the old highway. The layout and location of this connection, and therefore the effect that it would have

on existing traffic patterns, would be subject to the decision on the nature and extent of the staging option to be implemented.

One possible staging option could involve construction of the proposed upgrade between South Kempsey and Frederickton, with a temporary connection to the existing highway just to the north of Frederickton in the area of the proposed interchange. If this option was adopted, vehicles would be slowed using incrementally decreasing speed limits prior to the Macleay River crossing (northbound). The dual carriageways would then be merged into a single carriageway at the western end of the Macleay River bridge before swinging around approximately along the alignment of the northbound offload ramp to the proposed intersection with the existing highway. Traffic capacity, safety and access would be key considerations in the design of an appropriate temporary connection to the existing highway at Frederickton if the construction of the proposed upgrade is to be staged.

However, any decision with regard to the staging of the proposed upgrade would be subject to both the approval of and funding arrangements for the project.

2.2.13 Land use and property

The following submissions were received with regards to land use and property.

Compensation

- Concern over impact of proposal on property value and adequacy/flexibility of compensation under the RTA's Land Acquisitions Policy.
- Request a trial period of 12 months after completion of the upgrade for full compensation to a more suitable home site if there are any complications caused to safety, health or wellbeing.
- Impact on Rural 1(G) properties must be considered.
- Landholders should be made aware of the avenues available to them should they be dissatisfied with a property level proposal arising from consultation and negotiation.

Submission No. 4, 14, 22, 26, 28, 33, 35, 39, 44, 46, 49

Property acquisition and negotiations would be undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the RTA Land Acquisition Policy. The aims of the Act include 'to guarantee that, when land affected by a proposal for acquisition by an authority of the State is eventually acquired, the amount of compensation would be not less than the market value of the land (unaffected by the proposal) at the date of acquisition'. Factors such as existing land use, building assets and other improvements are taken into consideration in the valuation process.

Under the Act, any compensation would be negotiated during the land acquisition phase prior to the commencement of construction, with compensation payable and finalised at the time of acquisition. The landowner

may then choose to remain on their residual property or sell it at a price that together with the compensation should be comparable to the market value of the whole property unaffected by the proposed upgrade at the time of the acquisition.

Some properties impacted by the proposal are zoned 1(G) - Rural (Small Agricultural Enterprises) under the Kempsey Local Environmental Plan 1987. This zoning seeks to preserve a variety of larger size lots to meet demand for hobby farms and more intensive rural development. Some of these properties would be fragmented or reduced in size as a result of the proposal. Impacts on properties zoned Rural 1(G) would be either mitigated in consultation with the landowner or compensated in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

The RTA would attempt to reach agreement with each affected property owner through negotiation and consultation during the land acquisition process prior to the commencement of construction. The RTA Land Acquisition Policy in Appendix E of the Environmental Assessment outlines procedures for situations where an agreement cannot be reached on the purchase price during an owner-initiated negotiation process. A copy of the RTA Land Acquisition Policy can also be downloaded from www.rta.nsw.gov.au.

- Properties on Hills Lane should be given water tanks in order to fight fires during bushfire emergencies - no alternative means of emergency escape.
Submission No.28

An emergency evacuation plan for residents in the Hills Lane area would be prepared during the detailed design phase of the project in consultation with the Rural Fire Service, Emergency Services and adjacent landowners.

Impacts on property infrastructure

- Will fencing be replaced on my whole property or just the boundary with the proposal?
- The dam on Property 95 will be impacted by the proposal and should be replaced. The dam would need to be replaced 18 months prior to the road works affecting the existing dam to allow time to fill and settle and to avoid any interruption to water supply.
Submission No. 24, 26, 40, 28

The replacement of existing infrastructure directly affected by the proposed upgrade, such as fencing and water storage, would be subject to negotiation with individual landowners as part of the property acquisition process during the detailed design phase of the project

A copy of the RTA Land Acquisitions Policy is included in Appendix E of the Environmental Assessment.

Suitable fencing along the new highway boundary to prevent stock accessing the highway corridor would be installed as part of the project at the RTA's cost.

However, the replacement of fencing in other areas of a property not affected by the proposed upgrade would normally not be considered unless required to resolve a property management issue arising from the proposed upgrade.

- Access to a private water meter will be cut due to the proposal.

Submission No.19

Access to or re-instatement of private services and utilities would be considered as part of the property adjustments during the negotiations with directly-affected landowners in the detailed design phase. All public services and utilities impacted by the proposal would be adjusted or re-instated by the RTA in consultation with the relevant utility providers.

Land use and planning

- The proposal will not impact on proposed growth areas outlined in the Draft Mid North Coast Regional Strategy.

Submission No.2

Noted.

- The height and proximity of the levee bank to residents in Frederickton will reduce useable land area, restrict access to the river and affect residential amenity.

Submission No. 3, 15, 35

The design of the Frederickton flood levee would be refined based on further flood modelling results and detailed design. The RTA would continue to consult with affected landowners and Kempsey Shire Council. Mitigation measures to address the visual impacts of the levee, including landscaping and design, would be developed in consultation with Council and affected landowners prior to the commencement of construction. Any loss of land or access restriction (severance) would be compensated in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

Agricultural impacts

- Request that additional farm infrastructure be provided, including 2 wind mills, electric fencing on road boundaries and guide fencing at the underpass. Additional yards must also be installed by the RTA.

Submission No.39

The replacement or provision of necessary farm infrastructure would be considered during property acquisition negotiations with individual landowners. A copy of the RTA Land Acquisitions Policy was included in Appendix E of the Environmental Assessment. Suitable fencing to prevent stock accessing the highway corridor would be installed by the RTA along the proposed highway corridor boundaries.

- A farm access underpass between Station 22,000 and 22,500 is required for stock movement from the western side of the property to the eastern

side in the north of the property.

Submission No.39

Access would be available to this area under the southern end of the Seven Hills Road overbridge if this isolated strip of land is retained by the landowner. The RTA would not be able to provide any additional access points to this strip of land in the area suggested due to the lack of a suitable location for an underpass and the costs involved.

- Height of underpass needs to be sufficient to allow 4 metre high cattle truck to pass underneath for fodder distribution.

Submission No.39

The proposed farm access underpass would not have sufficient height clearance to allow a 4 metre high cattle truck to pass underneath. Due to road grading restrictions and the low lying nature of the land, it would not be possible to provide an underpass of the requested height at this location. Resolution of the access issues in this location would be subject to further consultation with the land owner during the detailed design and property acquisition phase.

- Dry access culvert is required over Collombatti Creek on western side of alignment.

Submission No.39

The provision of suitable access facilities at this location would be considered during property acquisition negotiations with the landowners. A copy of the RTA Land Acquisitions Policy was included in Appendix E of the Environmental Assessment.

- Council supports any compensatory measures for loss of viable agricultural land within the Kempsey Shire (particularly land deemed 'regionally significant').

Submission No.44

The potential impacts on agricultural land use, including land mapped as 'regionally significant farmland' in the Draft Mid North Coast Farmland Mapping Project (Department of Planning 2006c) are outlined in Section 15.4.3 of the Environmental Assessment.

The fragmentation and acquisition of productive farmland by the proposed upgrade would affect some areas of land mapped as regionally significant farmland, namely at Frogmore and a small area of land in lower Collombatti. Although several large agricultural operations and important areas of fertile land and high country would be affected by the proposed upgrade, the ongoing viability and operational capacity of agricultural businesses would generally not be detrimentally affected.

Where the proposed upgrade crosses properties on regionally significant farmland, the alignment has been moved to minimise land take wherever possible. Where any isolated parcels of land are created, these would generally

be disposed of by either public auction or public tender, allowing them to be absorbed back into adjoining agricultural land uses.

Mitigation measures would be negotiated with agricultural landowners to address any identified impacts on the operation of businesses during property acquisition negotiations. A copy of the RTA Land Acquisitions Policy was included in Appendix E of the Environmental Assessment.

- Measures outlined in the Environmental Assessment and Statement of Commitments with regard to agricultural impacts are reasonable, provided consultation is ongoing with affected landowners.
- Department of Primary Industries supports the proposal subject to adoption of recommendations.
Submission No.46

Noted

Business impacts

- The proposal will affect primary production and small business (pottery) land use on Property 9. No consideration given to impacts on Mountain Nursery. The RTA should acquire the whole property if the proposal footprint significantly impacts the viability of the business.
Submission No.40

The impacts of the proposal on Mountain Nursery were considered in the Environmental Assessment. However it is acknowledged that the land use of the property was incorrectly assigned as a “commercial land use” and should have been considered as an “agricultural land use”. However, the compensation for loss of primary productivity would be reflected in valuations carried out for acquisition negotiations. Further consideration to the level of impact on this property and the most suitable acquisition options would be undertaken as part of the acquisition negotiations in accordance with the requirements of the *Land Acquisition (Just Terms Compensation) Act 1991* and the RTA Land Acquisition Policy.

- Kempsey Shire Council would like to formally submit that a service centre and transport interchange (road and rail) be designated at the South Kempsey interchange.
- Council has received an application to rezone land adjacent to South Kempsey interchange to allow for industrial land uses/development.
Submission No.44

Consideration of a road/rail interchange and service centre is outside the scope of this proposal. It is noted that Kempsey Shire Council supports the location of a highway service centre adjacent to the South Kempsey interchange. The proposed South Kempsey interchange and associated service road system has been designed so as not to preclude the location of a highway service centre at this location. Further consideration of the provision of a road/rail interchange

and service centre would be at the discretion of Kempsey Shire Council in consultation with the Department of Planning and other relevant Agencies, including the RTA.

The design of the South Kempsey interchange and associated service roads was conducted in close consultation with Kempsey Shire Council to ensure that land designated for future industrial/commercial use in the Kempsey and South West Rocks Industrial Lands Review 2004 (Kempsey Shire Council 2004) was accessible from the South Kempsey interchange.

The development application for a quarry adjacent to the proposed upgrade is also noted. The RTA has made a separate submission to Kempsey Shire Council with regard to this development application.

2.2.14 Noise and vibration

The following submissions were received with regards to noise and vibration.

Noise monitoring and assessment

- A noise impact assessment was undertaken for non-residential sites such as the Adventist school and church, but not for dwellings outside the "zone of impact" shown in Figures 16-2 to 16-13. These dwellings will still be impacted.
- Additional noise monitoring is required for the property at 253 Crescent Head Road to ascertain accurate pre and post-construction noise levels.
- Noise monitoring was not undertaken on Property No.101. Submission No. 13, 37

Non-residential sites such as schools, churches, nursing homes and hospitals are considered to be sensitive noise receivers. The Seventh Day Adventist church and school are located within 300 metres of the proposed upgrade and therefore potential impacts on these sites were assessed. Due to the level of reliability of the data, modelling was not undertaken for sensitive receivers beyond the 300 metre "zone of impact" for the proposal.

Operational noise monitoring within the "zone of impact" would be undertaken following construction of the proposed upgrade to determine the adequacy of the mitigation measures.

To facilitate the assessment of noise impacts from the proposed upgrade, residential areas along the route were divided into Noise Catchment Areas (NCA's). NCA's are areas that are likely to have similar noise exposures, on the basis of factors such as topography, road design (cuttings, embankments, intersections etc), setbacks, and types of residences or other noise receptors.

The RTA intended to undertake noise monitoring on Property No.101 as part of the background noise monitoring for NCA28, however due to access restrictions during the period of the field assessment, the monitoring was instead undertaken on the adjacent property, which was considered

representative of that locality. Figure 16-1f of the Environmental Assessment was not updated to indicate this change in the monitoring location. The amended figure is provided in Appendix B.

- The Department of Environment and Climate Change consider that all noise sensitive receivers have been identified however as there is the potential for impacts above the Environmental Criteria for Road Traffic Noise to be experienced beyond 300 metres, this risk needs to be effectively managed.

Submission No.43

It is noted that the Department of Environment and Climate Change considers that all noise sensitive receivers have been identified. As discussed in Technical Report 3 - Noise and Vibration Assessment in Volume 2 of the Environmental Assessment, all noise sensitive receivers likely to exceed the NSW Environmental Criteria for Road Traffic Noise (ECRTN) (EPA 1999) were considered (up to 55 dB(A) LAeq9hr). Further refinement of noise impact and attenuation would be undertaken during the detailed design phase of the project.

Construction noise impacts

- Construction noise will be greater than current ambient background noise levels, impacting on residential amenity.
- Concern that noise during construction and operation will cause health impacts to residents.

Submission No. 13, 16, 7, 9

As outlined in Section 16.4.1 of the Environmental Assessment, construction noise would exceed criteria at various times and places during the construction of the proposal. However, noise impacts generally occur over a limited time period as construction activities progress along the route of the proposed upgrade.

The predicted construction noise levels and exposure duration are not expected to present a risk of hearing loss, and are below the levels generally associated with clinical health problems. However, potential construction noise impacts on adjacent landowners would be considered in consultation with landowners, Kempsey Shire Council and relevant agencies during the development of the Construction Noise and Vibration Management Sub Plan for the project. This Plan will contain appropriate measures to deal with any potential impacts identified during the development of the Plan.

- DECC concerned that the appropriate construction noise criteria is used in the assessment.
 - Construction noise will be greater than current ambient background noise levels, impacting on residential amenity.
 - Concern that noise during construction and operation will cause health impacts to residents.
- Submission No.43

As outlined in Section 16.4.1 of the Environmental Assessment, construction noise would exceed criteria at various times and places during the construction of the proposal. However, noise impacts generally occur over a limited time period as construction activities progress along the route of the proposed upgrade.

The predicted construction noise levels and exposure duration are not expected to present a risk of hearing loss, and are below the levels generally associated with clinical health problems. However, potential construction noise impacts on adjacent landowners would be considered in consultation with landowners, Kempsey Shire Council and relevant agencies during the development of the Construction Noise and Vibration Management Sub Plan for the project. This Plan will contain appropriate measures to deal with any potential impacts identified during the development of the Plan.

Operational noise impacts

- Concern regarding the impacts of operational noise on residences.
 - The noise levels around Inches Road are already exaggerated by topography and will increase with the proposal. How much noise will I have in my home?
 - Noise impacts assessment needs to consider impact on residents already exposed to highway noise e.g. Barraganyatti.
- Submission No. 4, 6, 13, 14, 16, 20, 24, 27, 28, 32, 35, 41, 24, 44

As discussed in Chapter 16 of the Environmental Assessment, noise levels for some properties in proximity to the proposed upgrade would be expected to increase as a result of traffic noise. Section 3.6 of Technical Report 3 - Noise and Vibration Assessment in Volume 2 of the Environmental Assessment contains an assessment of “maximum noise levels”. This assessment was carried out in accordance with ENMM.

The noise impact assessment undertaken for the project considers all noise sensitive receivers likely to exceed the Environmental Criteria for Road Traffic Noise (ECRTN) including receivers already affected by road traffic noise and newly affected receivers.

Section 16.3.2 of the Environmental Assessment outlines road classifications for the various noise catchment areas along the proposal corridor. Residences

within NCA 1, 29 and 30 would be located adjacent to 'redeveloped freeway or arterial road' and are therefore subject to different noise criteria than those next to new freeway as set out in Section 16.3.2 of the Environmental Assessment.

It is acknowledged that topography is a key factor in noise modelling methodology. The distance noise travels is directly related to topography between source and receiver. For example, a flat surface can carry noise further than an undulating surface.

Traffic noise generated from the proposal in the vicinity of Inches Road was modelled, incorporating topographical contours for the area surrounding the proposal. The subject residence is located within 300 metres of the proposed alignment. All residences located in this area are identified in Figure 16-1a to f of the Environmental Assessment. Day time and night-time noise impacts for 2011 and 2021 were predicted to be less than 50 dBA at this residence (refer Figure 16-4 and 16-5 in the Environmental Assessment).

For further information regarding individual receivers, detailed results can be found in Technical Report 3 - Noise and Vibration Assessment in Volume 2 of the Environmental Assessment.

- Domestic animals will be affected by traffic noise.
Submission No. 7, 10, 37

The design of the project would improve the road geometry (horizontal and vertical alignment) to allow safer and more efficient travel along the highway. In achieving such a design, the noise associated with particular events such as the use of air brakes and gear changes for heavy vehicles is significantly reduced. Noise generated by the road should be more uniform in nature and less unlikely to disturb domestic animals.

Noise mitigation measures

- What noise mitigation measures will the RTA commit to?
- Mitigation strategies and maximum noise levels.
- House treatments for individual houses are not an acceptable measure for country lifestyle properties where the focus is outdoor living.
- The application of architectural noise treatment of buildings at Property No.9 would be inadequate due to the type of construction materials (timber and glass). Request that low noise pavement and noise barriers be installed adjacent to Property No.9.
Submission No. 40, 4, 6, 13, 14, 16, 28, 32, 41, 6

As outlined in Section 16.5 of the Environmental Assessment, the application of noise mitigation measures would vary in different sections of the alignment. The degree of noise impact quantifies the extent of mitigation required, and provides guidance on the mix of noise control measures to be adopted as a mitigation strategy. Further refinement of noise attenuation would be undertaken during

the detailed design phase of the project in consultation with the directly affected landowners in accordance with the relevant noise guidelines.

Also as stated in Section 16.5.2 of the Environmental Assessment, the RTA will “implement the requirements of an Operational Noise Management Report detailing the investigation of ‘reasonable and feasible’ operational noise mitigation methods”. The Operational Noise Management report would be prepared in consultation with DECC.

Noise mitigation measures have been prioritised to mitigate operational traffic noise impacts for residences that are predicted to exceed the relevant noise criteria. This has resulted in receivers most affected by potential highway noise including Lmax events, to be effectively ‘ranked’ as priority for receiving noise mitigation.

Section 3.6 of the Technical Report 3 - Noise and Vibration Assessment in Volume 2 of the Environmental Assessment also details strategies used during the design and development of the proposed upgrade to minimise Lmax events. This has been done through minimising changes in vertical alignment and larger radii curves / corners to reduce the need for heavy to use engine brakes. Additionally, in noise sensitive areas the RTA is proposing to use “at source” mitigation measures including low noise pavements and noise barriers.

Noise mitigation options are outlined in Section 16.5.1 of the Environmental Assessment.

- [Concern over the effectiveness of shielding proposed to reduce noise impacts from pug mill or crushing plants.](#)

[Submission No.40](#)

As indicated in Section 16.4.1 of the Environmental Assessment, shielding of the crushing plant or pug mill utilising the topography or construction site facilities would be incorporated into the site design once the locations are selected. Other mitigation measures could also be required to reduce noise levels in line with the guidelines. Further refinement of noise impact and attenuation would be undertaken during the detailed design phase of the project in consultation with the community and the Department of Environment and Climate Change. Any plant licencing requirements from DECC would also be addressed prior to the commencement of construction.

Vibration impacts and mitigation measures

- [Impacts of vibration on residences during construction and operation. What vibration mitigation measures will the RTA commit to?](#)

[Submission No. 4, 14, 24, 27, 32](#)

The potential vibration impacts associated with the construction and operation of the proposed upgrade, and the management measures required, are discussed in Section 16.4 of the Environmental Assessment.

- Concern regarding the proximity of greenhouse buildings and packing shed to the proposed blasting near Station 3000 (approximately 100 metres not 150-200 metres as suggested in the Environmental Assessment).

Submission No.40

As discussed in Section 16.4.1 of the Environmental Assessment, blasting is likely to be required to remove hard rock material from a cutting at Station 3000. However, the exact location and extent of the blasting activities would be subject to further geotechnical investigations that would be undertaken during the detailed design phase. During the preparation of the Environmental Assessment, the closest buildings were determined to be approximately 150–200 metres from the centre of the cutting. However, as detailed geotechnical subsurface profiles, blasting and seismic details would be determined during the detailed investigation and design phase, more detailed noise and vibration predictions, including verification of the proximity of buildings, would be undertaken at this time.

The buffer zone associated with the blast site would be identified and appropriate measures implemented to limit overpressure and vibration to acceptable levels. Blast charge and configurations would need to be selected to ensure that the ANZECC Guidelines (1990) adopted by the Department of Environment and Climate Change are not exceeded.

Blasting would be monitored to confirm predicted overpressure and vibration levels. Blast design and buffer zones would be modified as appropriate, if required.

2.2.15 Heritage

The following submissions were received with regards to heritage.

Aboriginal heritage

- The Department of Environment and Climate Change supports the preparation of an Indigenous Heritage Management Sub Plan in consultation with the Department of Environment and Climate Change.

Submission No.43

The RTA note the DECC support for the preparation of the Indigenous Heritage Management Sub Plan. As discussed in section 17.5.3 of the Environmental Assessment this sub-plan will be developed in consultation with DECC and will include the measures identified in section 11.1 of Technical Report 5 – Heritage Assessment.

Non-Aboriginal heritage

- Consideration required for family ashes adjacent to Bingis Lane.

Submission No.16

The extension of Bingis Lane would be designed in consultation with the landowner of the property to ensure, as far as is practicable, that the family ashes are not impacted.

- Memorial Avenue is a relatively rare phenomenon in NSW and should be treated with respect and due consideration for its heritage value.

Submission No. 26, 30

It is noted that the Memorial Avenue is of local significance. The Memorial Avenue has been treated with respect during the preparation of the Environmental Assessment and will continue to be treated with respect and due consideration for its heritage value during the detailed design and construction phases of the project.

- The Heritage Council of NSW notes that the project will have a substantial impact on three sites of non-Indigenous heritage significance.

Submission No.30

It is noted that the project would have a substantial impact on three sites of non-Aboriginal heritage significance. As discussed in Section 17.5.2 of the Environmental Assessment, management measures would include:

- Developing a management plan for the Ferry Lane Memorial Avenue in consultation with Kempsey Shire Council and Kempsey Returned Services League (RSL) Sub-branch.
- Minimising the extent of the construction zone impact in the area around the memorial avenue.
- Undertaking archival recording prior to the commencement of construction and ensuring restoration following construction.
- A full assessment of the site of the early 20th Century house and archival recording prior to the commencement of any construction in the vicinity and the removal of the house.
- Constructing the proposed Frederickton levee to avoid or minimise direct impacts to standing structures with heritage significance (e.g. the Macleay River Hotel).
- Designing and landscaping the proposed levee with the aim of minimising impacts on heritage values, particularly visual and contextual values.
- The Heritage Council of NSW considers the mitigation measures appropriate and requests that the Non-Indigenous Heritage Management Plan is prepared in consultation with the Heritage Council of NSW.

Submission No.30

Noted. As stated in the Environmental Assessment, the non-Indigenous Heritage Management Sub Plan would be prepared in consultation with the Heritage Office and relevant councils.

2.2.16 Socio-economic impacts

The following submissions were received with regards to socio-economic impacts.

Impacts on the local economy

- Potential impacts on Crescent Head village have not been considered.
Submission No.1

An assessment of the potential impacts on businesses in Kempsey and Frederickton as well as other businesses along the existing Pacific Highway was undertaken for the project. A summary of the results of this study was provided in Section 18.3.2 of the Environmental Assessment. A detailed assessment of the impacts to Crescent Head Village was not undertaken as the village would not be bypassed by the proposed upgrade, as would the towns of Kempsey and Frederickton.

No change to the current access arrangements to Crescent Head are proposed.

- The economic impacts on local businesses are greater than acknowledged/expressed in the Environmental Assessment.
- Impacts on local businesses and employment requires further detailed work in consultation with Kempsey Shire Council to minimise any perceived impact.
Submission No.40, 41, 42, 44

A socio-economic assessment was undertaken by the RTA in March 2006. The details of this study are documented in Chapter 18 of the Environmental Assessment. This study included an assessment of the likely social and economic impacts of the proposed upgrade, and recommended measures to minimise social impacts and manage social change. Both analytical and participatory approaches were used to predict and assess the likely impacts of the proposed upgrade on the surrounding socio-economic environment.

The assessment concluded that the overall potential downturn in gross turnover in the town of Kempsey is likely to impact on the wider community with reduced employment prospects and flow-on economic impacts from highway-generated revenue. However, to some extent the uncertainty in the job market may be offset by the inflow of revenue during the construction period and potential development of a highway service centre at South Kempsey.

One of the objectives of the RTA's Pacific Highway Upgrade Program is to provide a route that supports economic development.

The RTA would consult with Kempsey Shire Council and the community with regard to signposting and town entry statements to help identify the region to highway users and draw them into Kempsey following the completion of the proposed upgrade. This would be undertaken with the aim of minimising the social and economic impacts of the proposed upgrade as much as possible,

consistent with similar approaches being adopted for the other Pacific Highway Upgrade Program projects.

It is understood that a 'Town Entrance Statement' is currently under development by the Kempsey Shire Council Economic Development Board, with a theme based on the timber industry under consideration. It is possible that such an entry statement could be re-located on the Pacific Highway in South Kempsey in the vicinity of the proposed South Kempsey interchange when construction of the project is completed. The development of an entry statement would be the responsibility of Kempsey Shire Council, in consultation with the RTA. Signage at the gateway entrance would tie in with an overall strategic approach and character of Kempsey, with the aim of drawing people to the town centre.

- Opportunities should be made available for local employment prior to and during construction, including people with disabilities.

Submission No.27

The RTA supports Equal Opportunity Employment and acknowledges that some local employment would be generated prior to, during and after construction of the proposed upgrade. While the RTA encourages and supports the use of local employment by construction contractors through the provisions of the Contract Tendering process for the project, the employment of staff would ultimately be at the discretion of the contractor. Local employment opportunities would also be subject to the availability of suitable skills and experience in the local area to match the skill set requirements of the contractor for the various aspects of the work.

General impacts on businesses/incomes

- Concern regarding economic impacts due to decreased property value and therefore decreased rental income.

Submission No.6

The RTA acknowledges that the proposed upgrade could impact the local amenity of particular properties in terms of visual and noise impacts. As discussed in the Environmental Assessment and in other sections of this report, mitigation measures would be implemented to address identified visual and noise impacts. However, as discussed in Section 18.3.1 of the Environmental Assessment, the project is also likely to have positive economic impacts on the local and regional economy due to aspects such as improved safety, travel efficiencies and removal of highway traffic from urban areas. These improvements to the broader community could help to stimulate the local economy in the longer term and therefore offer positive benefits with regard to the housing and rental markets.

- Temporary loss of access during construction will affect businesses.

Submission No.10

As stated in Section 14.9.1 of the Environmental Assessment, the RTA would ensure that access to properties is maintained during construction and, where

necessary and feasible, provide temporary alternative access. Where access can be maintained it is not expected that there would be any long term impacts to local businesses.

- The potential economic impacts to businesses as a result of noise and visual impacts need to be considered.
Submission No.40, 42

The RTA would continue to consult with the land owners during the property acquisition and compensation negotiations. These negotiations would consider the economic impacts of the proposed upgrade on the production capacity of Mountain Nursery.

The RTA acknowledges that the proposed upgrade could impact the local amenity in terms of both visual and noise impacts. As indicated in the Environmental Assessment and in other sections of this report, mitigation measures would be implemented where reasonable and feasible to address the visual impacts and noise impacts where the relevant noise criteria is exceeded.

Impacts on specific businesses

- Loss of income for lessees due to full acquisition of Kempsey Indoor Sports Centre.
Submission No.34

The RTA has consulted with the owners of the Kempsey Indoor Sports Centre. A lessee has an interest in land and is entitled to compensation under the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991*. A lessee's interest in land is determined following consideration of the terms and conditions of the lease.

- Loss of 75% of productive land. Economic impacts on production capacity of Mountain Nursery need to be considered.
Submission No.40

The road corridor boundary at the edge of the large cutting at Station 3000 has been proposed to provide flexibility in the final design of the cutting subject to detailed geotechnical investigations. Further geotechnical information will be undertaken during the detailed design phase to determine the final batter slopes, and therefore the project footprint in this area.

Once the project footprint and road reserve boundaries have been set, the level of compensation associated with the acquisition from the Mountain Nursery property would be determined in consultation with the landowner. The acquisition process and the compensation paid will be in accordance the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991*.

- Business on Property No.12 should be relocated to allow planned expansion, at the cost of the RTA.
Submission No.42

As discussed in Section 15.4.2 of the Environmental Assessment, property owners would be compensated for land acquired from their properties. The acquisition of land is subject to negotiation between the landholder and the RTA. Property acquisition would be carried out in accordance with the RTA's Land Acquisitions Policy Statement and the *Land Acquisition (Just Terms Compensation) Act 1991*.

During negotiations with property owners, consideration would also be given to acquiring any severed or isolated sections of land where access cannot be reasonably reinstated to that section. The RTA would not relocate homes or businesses, but would consider the impacts on these and the other aspects of the property when determining the compensation package.

Agricultural business impacts

- Loss of productive agricultural land, including cropping land and timber due to acquisition. No survey was undertaken on the impact of these losses.
Submission No. 26, 28, 37, 39

The potential impacts on agricultural land use, including cropping land, are outlined in Section 15.4.3 of the Environmental Assessment. Whilst a quantitative survey of agricultural properties was not undertaken, each affected landowner was consulted individually during the route selection and concept design phases to determine the impacts on agricultural operations.

Although several large agricultural operations and important areas of fertile land and high country would be affected by the proposed upgrade, the overall viability and operational capacity of agricultural businesses would generally not be detrimentally affected.

Where the proposed upgrade crosses properties on regionally significant farmland, the alignment has been moved to minimise land take wherever possible. Where isolated parcels of land are created, in most cases these would be disposed of by either public auction or public tender, allowing them to be absorbed into adjoining agricultural land uses. In all cases, appropriate mitigation measures would be negotiated with agricultural landowners to minimise impacts on the operation of businesses.

As discussed in Section 15.4.2 of the Environmental Assessment, property owners would be compensated for land acquired from their properties. Any loss of productive land would be taken into account during property acquisition negotiations between the landholder and the RTA which would be carried out in accordance with the RTA's Land Acquisitions Policy Statement and the *Land Acquisition (Just Terms Compensation) Act 1991*.

During negotiations with property owners, consideration would also be given to compensation for the impacts on the facilities on properties (such as fencing,

houses and buildings) and the acquisition of any severed or isolated sections of land where access cannot be reasonably reinstated to that section.

- Concern regarding impacts of changed flood conditions on dairy and cattle businesses on the flood plain.

Submission No.29

The proposed upgrade would increase water levels and the duration of inundation during and after flood events in some areas of the Macleay River floodplain. The impacts of changes to the flood regime are discussed in Section 10.2.2 of the Environmental Assessment. In some circumstances increases in velocity could result in some localised damage to topsoil and pasture. Measures to minimise impacts on topsoil and pasture are discussed in Section 10.5 of the Environmental Assessment.

Some specific protection measures as described in Section 10.5 of the Environmental Assessment would be implemented in locations most affected by changes to the flood regime, particularly properties in the lower Macleay floodplain area. In all other locations the proposed upgrade would incorporate structures such as bridges and culverts to maintain existing flow paths. Further details on local drainage provisions are outlined in Section 6.2.3 of the Environmental Assessment.

The RTA is committed to reinstating all emergency and stock evacuation routes to high ground and refuge areas affected by the proposal and the predicted changes to flood characteristics. As outlined in Section 10.2.2 and in Figure 10-7 of the Environmental Assessment, access would be maintained to the local stock refuge areas, including the RLPB stock reserve on Old Station Road. A designated stock crossing would be provided at Mill Lane (refer Figure 15-2 and 15-3).

As outlined in Section 10.5.2 of the Environmental Assessment, it is proposed to construct stock mounds and truck-loading facilities for affected landholders within affected areas to assist in the refuge and/or evacuation of stock during floods. Mounds would incorporate fencing and loading facilities to enable stock to load onto trucks for evacuation. The installation of any other facilities of a more permanent nature such as fodder storage facilities on these mounds would be undertaken at the discretion and cost of the landholder.

All directly affected properties operating dairy and/or beef cattle businesses were consulted during the route selection phase and during the concept design and environmental assessment phase of the project. Where possible, the proposed alignment minimises loss of high ground and allows for access to isolated high ground within properties via bridge underpasses and farm access underpasses.

All affected landowners would continue to be consulted during the detailed design and construction phases of the project. All flood mitigation measures would be designed and implemented in close consultation with landowners and flooding specialists.

- [There is no discussion of impacts on the fisheries industry.](#)
[Submission No.46](#)

As part of the biodiversity assessment for the project, impacts on aquatic ecology were addressed. In Section 11.3.9 of the Environmental Assessment it was concluded that, given that the proposed crossings comply with NSW Fisheries guidelines, no long-term impacts from the proposed waterway crossings are expected on the fish and mobile invertebrate assemblages within the area. Also, no sensitive aquatic habitats such as seagrasses, mangroves or saltmarsh would be affected by the proposed works.

Impacts on commercial and recreational fishing in the area were also considered in Section 11.3.10 of the Environmental Assessment. It is unlikely that the proposed upgrade would have any major impact on commercial or recreational fishing in the area. Commercial fishing in the Macleay River is concentrated in the lower reaches below the study area. Given that there is similar habitat up and downstream of the proposed upgrade, minimal disturbance would be expected.

Social impacts

- [Construction needs to commence sooner to reduce disruption, uncertainty and further traffic accidents and delays.](#)
[Submission No.47](#)

Section 2.4.1 of the Environmental Assessment outlines the need for the project. The RTA understands that timing of the construction and completion of the project are key issues of concern to the community. However, the commencement of construction is dependent upon a number of factors including:

- Approval of the project (approval is currently being sought from the Minister for Planning).
- The completion of any detailed investigations such as heritage and geotechnical studies.
- The acquisition of properties along the alignment.
- The programming and funding of the project.

Completion of the environmental assessment process is also an important step towards project completion.

- [The RTA has not carried out studies on the impacts on families.](#)
[Submission No.22](#)

A detailed assessment of the potential socio-economic impacts of the proposed upgrade was undertaken for the project. A summary of the results of this study was provided in Chapter 18 of the Environmental Assessment. The detailed assessment addressed the potential impacts on land owners as a result of property acquisition, and this assessment is considered to be relevant to families.

The assessment listed the main concerns of residents whose properties were to be acquired as:

- Relocation and the resulting disruption to social networks, employment and sense of place.
- Physical and mental stress as a result of disruption to people's lives (a feeling that their lives are on hold), loss of ownership and loss of control about decisions regarding their property.
- Stress about partial property acquisition and perceived decreases in property values and residential amenity.
- Stress about partial property acquisition of agricultural land and the resulting economic effects.

Proposed measures to mitigate these impacts include:

- Ongoing consultation with those directly affected by property acquisition.
- Provision of early acquisition where particular hardships would be experienced.
- Ongoing communication regarding anticipated timing of the project as time delays could contribute to and increase the socio-economic impacts of property acquisition.
- The provision of compensation for loss of land at the unaffected market value of their property (i.e. the property value without the proposed upgrade).

Impacts on residential amenity have been addressed in the relevant technical sections of the Environmental Assessment. Key amenity-related issues include access, noise and visual impacts.

- [Loss of significant local and regional community sporting resource due to full acquisition of Kempsey Indoor Sports Centre.](#)
[Submission No.34](#)

The RTA notes that the Kempsey Indoor Sports Centre is a local and regional community sporting resource, providing facilities for schools, sporting teams and individuals.

The property is directly and significantly affected by the proposed upgrade and would be required by the RTA for the construction of an on-ramp onto the proposed upgrade from the existing Pacific Highway (north-bound). A number of locations and configurations for the South Kempsey interchange were assessed. The location of the South Kempsey interchange influences the location of the northbound on ramp, which passes through the Kempsey Indoor Sports Centre land and directly impacts upon the building.

The owners of the Kempsey Indoor Sports Centre would be appropriately compensated for the property. The relocation of the Centre to an alternative location would then be at the discretion of the landowners.

- Impacts on 'one particular expanding school' have not been considered.
Submission No.41

It is unclear which school this submission is referring to. The Environmental Assessment discusses the impacts of the proposed upgrade on four schools.

Chapter 16 (Noise and vibration) and Chapter 20 (Air quality) refer to the following schools as sensitive receivers. The potential impacts are stated and mitigation measures provided:

- Kempsey Adventist Primary School.
- Frederickton Public School.
- Kempsey East Public School.
- Bellimbopinni Public School.

Chapter 19 (Landscape and visual impacts) states that additional screening would be required around Frederickton Public School.

The RTA was not made aware of expansions planned for any of these schools, however as the proposed upgrade does not require the acquisition of land from any schools, and based on information available at the time the proposed upgrade is not considered to impact the expansion of any schools in the vicinity.

2.2.17 Landscape and visual impacts

The following submissions were received with regards to landscape and visual impacts.

- The Frederickton flood levee will have a detrimental affect on visual amenity for landowners.
Submission No. 3, 26, 36

It is acknowledged that the Frederickton flood levee could have an impact on some residents' views over the Macleay River and its floodplain. The design of the levee would incorporate urban design and landscape elements to integrate the levee into the surrounding environment, as well as minimising where possible the loss of views and impacts on visual amenity.

As outlined in Section 19.5 of the Environmental Assessment, the form of the Frederickton levee would respond to the existing site constraints. In some locations an earth bank would be used, while in other locations, where space is limited, a concrete wall would be used. Where concrete walls are used, the wall would be located to ensure that fill grading behind the wall or other means of access such as stairs or ramps would maintain where possible access for residents to the Macleay River and its view-scape from affected properties.

Endemic vegetation would be used to provide a visual buffer to the levee. This would be integrated with existing native vegetation as shown in Figure 19-4 of the Environmental Assessment.

The design and landscaping of the Frederickton flood levee would be refined during the detailed design phase of the project in consultation with affected landowners and Kempsey Shire Council. An Urban Design and Landscape Plan would be developed prior to construction, applying design principles established in the Environmental Assessment to the various aspects of the project, including the levee.

- [The proposed upgrade will impact visual amenity.](#)
[Submission No. 4, 6, 7, 9, 14, 24, 26, 40](#)

Impacts on visual amenity are outlined in Section 19.3 of the Environmental Assessment. Substantial temporary visual impacts during construction and permanent changes to the visual character would occur following the completion of construction. Where possible the concept design has sought to minimise visual impacts by adopting urban design principles that help create an interesting but unobtrusive road design.

An urban and landscape concept plan has been developed to reduce visual impacts of the proposal through sustainable design and landscape treatments focusing on revegetation and integration with the existing landscape.

An Urban Design and Landscape Plan would be developed in consultation with the community and Kempsey Shire Council prior to construction, applying design principles established in the Environmental Assessment.

- [Further detailed analysis of visual impacts of the road across the Macleay River floodplain is required. No suitable mitigation has been proposed.](#)
[Submission No.44](#)

As outlined in Section 19.3.1 of the Environmental Assessment, the proposed Macleay River and floodplain bridges, and associated embankments would have a significant visual impact due to the physical size of the structures and access to views from Frederickton, South West Rocks Road and residences on the floodplain. The strong geometric form of these structures, particularly the embankment, may not relate to the character of the floodplain. To minimise visual impacts across the Macleay River floodplain batter slopes would be varied where practicable, the batter slopes would be landscaped in sympathy with the surrounding floodplain area and structures would be simple, elegant and unobtrusive.

An Urban Design and Landscape Plan would be developed in consultation with the community and Kempsey Shire Council prior to construction, applying design principles established in the Environmental Assessment.

2.2.18 Air quality

The following submissions were received with regards to air quality.

Dust

- [Dust impacts and proposed mitigation measures need to be clarified.](#)

- Concern that dust during construction and operation will cause health impacts to residents.
- Dust from Bingis Lane as a result of additional traffic.
- Dust created during construction of Yabsleys Lane extension will affect small blind manufacturing business. Yabsleys Lane should be sealed.
Submission No. 4, 6, 9, 14, 32, 4, 17, 9, 16, 19

As discussed in Section 20.2 of the Environmental Assessment, impacts associated with dust during construction would include dust generated from the movement of construction traffic on paved and unpaved roads, wind erosion from aggregate storage piles, clearing of groundcover and top soil, earth moving activities and the transport and stockpiling of soil and other construction materials. Worst case total dust levels were calculated for the scenario when dust generating activities would be at a maximum based on a typical work area of 100 by 200 metres over a 10 hour construction day. The predicted dust generated during such conditions was between 63 and 157 kilograms.

The potential for health issues associated with dust would be managed through the implementation of dust mitigation measures and also through notification of residents in the event of likely high levels of dust emission (based on activities, soil condition and prevailing weather conditions). Measures to reduce/manage dust emissions during construction would be detailed in the Air Quality Management Plan and would include (as listed in Section 20.2 of the Environmental Assessment):

- Water spraying of internal unsealed access roadways and work areas and any other areas in need of water spraying.
- Undertaking revegetation or stabilising procedures in disturbed areas as soon as construction activities are completed to minimise the potential for wind blown dust.
- Avoiding or minimising dust-generating activities during dry and windy conditions.
- Moving dust-generating activities to less sensitive locations where warranted.
- Imposing site speed limits on all construction vehicles where required.
- Restricting vehicle and machinery movements to designated areas.
- Rumble grids and wheel-wash facilities installed in appropriate locations to remove mud and dust from vehicles.
- Where applicable, sealed roads swept to remove deposited material that could generate dust.
- Loads of loose, potentially dust-generating material covered to prevent wind-blown dust emissions and spillages.

The concept design proposed that Bingis Lane would be upgraded with a gravel road surface only. It is considered unlikely that the additional volume of traffic using Bingis Lane would cause a significant increase in dust levels.

Further assessment of the required road surface treatment on local roads such as Yabsleys and Bingis Lane would be undertaken during the detailed design phase in consultation with Kempsey Shire Council.

Other emissions

- [Operational air quality impacts from traffic.](#)
[Submission No. 4, 6, 14](#)

As discussed in Section 20.3 of the Environmental Assessment, air quality impacts associated with the operation of the proposed upgrade would relate to increased traffic and emissions on the highway. During operation of the proposed upgrade, the traffic capacity of the highway would be increased.

The proposed upgrade would be expected to result in a decrease in air emissions and associated pollutant levels associated with traffic due to improved traffic flow conditions. Further, emissions and associated pollutant levels would be expected to improve from 2011 to 2021 due to improved fuel composition and associated combustion technologies. With the proposed upgrade, emission rates and associated pollutant levels would generally decrease in comparison to conditions without the proposed upgrade. Reduced impact potential would also be expected as the source of emissions would generally be moved away from existing urban areas through the bypassing of Kempsey and Frederickton.

Pollutant levels with the proposed upgrade would be typical of a rural-residential area adjacent to a major road.

Concentration of pollutants owing to emissions associated with the proposed upgrade at nearby residences and local schools would be expected to be significantly lower than the adopted Department of Environment and Climate Change (Environment Protection Authority) air quality goals. Compliance with ambient air quality goals and satisfactory local ambient air quality would be expected at the nearest potentially affected sensitive receivers (assuming an offset of at least 10 metres from the nearest carriageway).

As vehicle emission impacts are most effectively managed at source via vehicle fuel standards and vehicle maintenance and emissions testing, no specific operational mitigation measures are identified. The preferred approach to addressing road-based air quality impacts is through state or region wide strategies, such as progressive tightening of vehicle air emission standards; in service inspections to ensure vehicle muffler/exhaust systems are well maintained; and the integration of transport and land use planning. In addition, it is anticipated that over time the turnover in the vehicle fleet would see progressive removal of less efficient vehicles from the roads, thereby reducing vehicle emissions.

2.2.19 Other environmental issues

The following submissions were received with regards to utilities and services and water quality.

Utilities/services

- Macleay Water to be contacted with regard to existing and proposed sewer and water infrastructure in the Kempsey Shire.
Submission No.44

Noted. Macleay Water has been contacted with regard to existing and proposed sewer and water infrastructure in the Kempsey Shire.

- Kempsey Shire Council requires that service conduits be walk-through size.
Submission No.44

Service conduits would be included in the proposed upgrade where necessary. The size and location of any conduits would be determined in consultation with the relevant utility providers.

- Kempsey Shire Council noted that Crescent Head Road has a major water trunk main.
Submission No.44

It is noted that Crescent Head Road has a major water trunk main. This utility would be protected or relocated as appropriate prior to construction.

- Kempsey Shire Council expressed concern regarding maintaining the water supply to certain areas during construction.
Submission No.44

Water supply would be maintained throughout construction. Management measures, including community notification and measures to ensure the provision of alternate supply if necessary, would be included in the CEMP to address this issue in the event of unforeseen loss of water supply (incident or accident).

- There is a need to consider physical separation of sewage treatment plant at Frederickton from the town by the proposal.
Submission No.44

The proposed upgrade would not impact the operational capacity of the Frederickton sewage treatment plant. Direct vehicular access from Frederickton to this facility would be maintained via the overbridge of the Frederickton interchange. All pipeline and service facility connections to the sewage treatment plant would be adjusted prior to the commencement of construction in consultation with Kempsey Shire Council.

Water quality

- Concern about contamination of run-off and potential impacts on water quality in private dams and other waterways.
Submission No. 24, 27, 41

Water quality control measures to be incorporated into the proposed upgrade are discussed in Sections 6.2.4 and 21.1 of the Environmental Assessment. These sections of the Environmental Assessment describe a range of standard, as well as project specific mitigation measures that would be implemented to help manage erosion, sedimentation, run-off from road surfaces and pollution from spills/accidents during both the construction and operational phase of the project.

- Concern about the potential for runoff to contaminate soils and crops.
Submission No.26

Section 21.1.3 of the Environmental Assessment identified potential impacts on surface and groundwater quality during operation of the proposed upgrade. Impacts could include:

- Run-off delivering contaminants that have accumulated on the road surface to receiving waters. Contaminants may include gross contaminants and litter, sediment and suspended solids, nutrients, heavy metals, toxic organics, oils and surfactants.
- Contaminants in run-off could be particularly harmful to properties with organic certification.

Water quality during operation can be managed adequately through the application of standard management measures. These are outlined in the draft Statement of Commitments in Appendix D and in Section 21.1.4 of the Environmental Assessment. Measures could include, but not be limited to:

- Converting some of the temporary sediment control basins established during construction to permanent water quality basins for the operation of the proposed upgrade.
- Water running off the road surface for nominated storm events of up to 1-in-20 year ARI would be treated prior to reaching any organic certified property.
- Barraganyatti Creek runs through directly affected property. No studies were conducted on this creek.
Submission No.37

As discussed in Section 21.1 of the Environmental Assessment, assessments of surface and ground water quality in the Macleay Valley were undertaken by the RTA in 2002 and 2005. The results were analysed in Kempsey to Eungai – Upgrading the Pacific Highway – Water Quality Report (RTA 2006). Sampling of Barraganyatti Creek was undertaken in February and March 2002. The results of surface water quality sampling indicated that water in the northern part of the proposed upgrade, within the Nambucca River catchment, is of good quality.

Water quality during construction can be managed adequately through the application of standard management measures. These are outlined in the draft Statement of Commitments in Appendix D and Section 21.1.4 of the Environmental Assessment.

- Erosion and sediment controls plans will need to be prepared for the levee and flood protection mound construction works.
Submission No. 43

Noted.

- The requirements for basin design are more stringent in Volume 2 book 4, Managing Urban Stormwater, Soils and Construction.
Submission No. 43

Noted.

- Re-use of water from sediment basins should be the first consideration in re-use strategy.
Submission No. 43

The RTA notes the DECC request and where practicable and within the constraints of the construction site the RTA will investigate the need to increase basin size or install offline water storage areas to allow for increased on site water storage for re-use purposes.

- The management of the groundwater discharged during dewatering activities should be carried out in consultation with DECC and DWE.
Submission No. 43

Noted. Section 21.1.4 of the EA states that where there is the potential for changes to groundwater levels the “Management measures will be determined in consultation with the regional office of DWE”.

The RTA will also consult with DECC where there is the potential for change to groundwater levels to occur.

- DECC requested further information on the location of operational water quality control basins.
Submission No. 43

As discussed in various sections of the EA, the locations for the water quality control basins cannot be clearly stated as the final locations will be determined based on criteria developed in consultation with DECC during the detailed design phase.

2.2.20 Statement of commitments

The following submissions were received with regards to the draft statement of commitments.

- Commitments relating to heritage are generally considered acceptable.
Submission No.40

Noted.

- Draft Statement of Commitments Ref B2 - It is suggested that the statement of commitments be amended to allow for modification of the fauna underpass locations and possible increased numbers in accordance with agreement from the Department of Environment and Climate Change and development of the flora and fauna management sub plans.
Submission No.43

RTA notes this request. The location, design and number of the fauna underpasses would be revised during the detailed design phase in consultation with the Department of Environment and Climate Change. The location of the fauna underpasses can be refined during the detailed design phase and located where warranted and feasible.

While the RTA will endeavour to finalise the details of fauna underpasses and fauna fencing prior to the approval of the CEMP by the Department of Planning, it is possible given the length and the options available for the staging of the project, that the CEMP may be submitted prior to the completion of the detailed design work for the full length of the project. Under this situation, the CEMP and associated management plans would contain as a minimum the general principles to be applied for the design and placement of the fauna crossing/exclusion facilities which would be determined in consultation with the Department of Environment and Climate Change. The actual details of the fauna crossing/exclusion facilities would then be finalised in consultation with the Department of Environment and Climate Change following the approval of the CEMP.

- Draft Statement of Commitments Ref B4 - Artificial breeding ponds must be designed and constructed in consultation with recognised experts and Department of Environment and Climate Change.
Submission No.43

Details of artificial breeding ponds for Green-thighed Frogs are set out in Section 5 of the Environmental Assessment Technical Report 2 Supplementary Ecological Assessment. The design of these ponds would be based on the best available information that would be sourced from recognised experts and the Department of Environment and Climate Change at the time.

- Draft Statement of Commitments Ref B8 - Prepare and submit to the Department of Environment and Climate Change (in consultation with relevant authorities) a comprehensive offset strategy and package for the proposed upgrade prior to the commencement of construction of the upgrade project.
- The Department of Primary Industries recommends that the draft Statement of Commitments Ref B8 be reworded to “that a comprehensive offset strategy and package for the proposed upgrade in consultation with relevant government authorities will be implemented prior to any works taking place”.

Submission No. 43, 46

The RTA has included an extensive range of mitigation measures in the Environmental Assessment for this project. As indicated in Section 11.4.6 of the Environmental Assessment, the RTA would develop and agree on a compensatory habitat/offset package for the Kempsey to Eungai project in consultation with the relevant government agencies. This package would be developed and agreed following the approval of the project. The RTA proposes to adopt a sectional approach to developing this package such that compensatory habitat can be determined for adjacent highway upgrade projects to the north and south of the Kempsey to Eungai project.

This will enable a robust and comprehensive compensatory habitat package to be developed on a regional basis rather than for each individual project. The RTA believes that this approach would give a better outcome for all parties, as there are likely to be larger properties available under a sectional approach that would be of more interest to the relevant government Agencies, and that would be better linked to land that is already protected by the Department of Environment and Climate Change or other Agencies.

While it is envisaged that agreement on the package would be negotiated with the relevant government Agencies as early as possible after the approval of this project, the timeframe for agreement would necessarily be subject to consultation with DECC considering land options and the finalisation of the details of the impacts on key habitat of the adjacent projects. As a result, it would not likely be possible to finalise the package prior to the commencement of construction of this project. This approach has successfully been used on a number of RTA Pacific Highway projects in the past.

- Draft Statement of Commitments Ref B10 - The inclusion of the following dot point:

If clearing is to be conducted outside the Spring to Autumn period, additional measures will be investigated and implemented to help facilitate the survival of displaced fauna, in consultation with relevant experts and the Department of Environment and Climate Change.

Submission No.43

Noted. However it is considered that this issue is adequately covered by revised Statement of Commitments F6 to F12, particularly F12.

- Draft Statement of Commitments Ref B10 – The 6th dot point of this commitment indicates that marked habitat trees and corridors of retained trees that link marked habitat trees with adjacent secure habitat, are to be left standing after initial vegetation clearing for a period of 48 hours. The Department of Environment and Climate Change strongly suggests that this retention period be increased to 72 hours, in line with other project approvals that have been recently issued for the Pacific Highway Upgrade Program.

Submission No.43

The RTA initiated and has developed a high standard fauna rescue component, including two stage clearing and fauna rescue and implemented this over 9 years. The RTA and contractors use 24 to 48 hour timeframes, taking into account clearing contractor requirements, cover, cost, differing fauna behaviour and risk of fauna returning to partly cleared sites. The RTA proposes to further discuss this issue with the Department of Environment and Climate Change prior to finalisation of the clearing work method statement.

- Draft Statement of Commitments Ref B13 - Replace riparian vegetation disturbed by the project with appropriate endemic species to maintain creek bank stability.
- The Department of Environment and Climate Change recommends that a commitment to leaving the riparian vegetation in place for as long as possible be included.

Submission No.43

As part of RTA's general vegetation clearing procedures, riparian vegetation would be kept intact where-ever possible, apart from those areas directly impacted by actual construction activities, where this would be retained for as long as possible. Disturbed riparian vegetation would be revegetated as soon as possible using appropriate endemic species to maintain creek bank stability.

- Commitment must be made to ensure changes to hydrological regime do not alter ecosystem requirements.

Submission No.43

Noted.

- Ref #S1 and #S9 should refer to both Volume 1 and Volume 2, Book 4 of Managing Urban Stormwater – Soils and Construction.
Submission No.43

Noted.

- Ref #S6 the water monitoring program should occur over a period of at least 12 months duration
Submission No.43

Noted. The water monitoring program would be developed in consultation with relevant government agencies, including the DECC, to limit water quality impacts on the basis of a site-specific investigation.

Please refer to the revised statement of commitment #SW1.

- It is suggested that an additional statement of commitment be included to conduct dust monitoring for a period of 12 months prior to the commencement of construction.
Submission No.43

The request by DECC is noted and we advise that the revised Statement of Commitments contained in the Submissions Report lists two specific commitments in relation to air quality. AQ2 states that “A dust monitoring program will be undertaken to determine the effectiveness of dust suppression measures, with dust deposition gauges installed at sensitive locations to determine the effectiveness of dust suppression measures.” This dust monitoring program would be developed in consultation with DECC and would be consistent with monitoring programs initiated for previous Pacific Highway upgrade projects. It is envisaged that during construction there will be both onsite and offsite dust monitoring gauges installed. The offsite dust monitoring gauges will be located to allow background dust levels to be compared against onsite dust levels.

3. Additional investigations

No additional investigations were deemed necessary to support the Environmental Assessment and/or the Submissions Report.

Certain detailed investigations would be undertaken as part of the detailed design phase prior to the commencement of construction. Additional investigations would include further geotechnical investigations and subsurface archaeological investigations, survey, noise and other detailed investigations as identified in the Environmental Assessment.

4. Detailed design refinement issues and Environmental Assessment clarifications

4.1 Detailed design refinements

On the basis of the consideration of submissions received and consultation during the Environmental Assessment display period, some minor design issues have been identified that will require further consideration and possibly refinement of the concept design during the detailed design phase. These issues would be considered along with other refinements arising from the conditions of approval for the project and the detailed investigations to be undertaken during the detailed design phase.

The design issues identified and some of the possible options are as follows:

4.1.1 Inches Road

A small service road diverging to the east of Inches Road (see Figure 6-1d in the Environmental Assessment), just to the south of the proposed overpass would need to be adjusted to minimise property impacts, impacts on an adjoining residence and avoid traffic conflicts with an existing driveway on the eastern side of the alignment (which may be upgraded in the future to suit possible subdivision proposals).

A possible option to help resolve these issues would involve moving the intersection of the proposed service road and Inches Road slightly to the north, and moving the service road itself slightly to the north-west.

4.1.2 Station Street

The exhibited proposal indicated that there would be a single access point for two properties at Eungai Rail directly onto the proposed upgrade (see Figure 6-1s in the Environmental Assessment). The access for a third property on the corner of Station Street and the Pacific Highway was to be relocated into Station Street to improve the safety in the proximity of the revised Station Street left in/left out only intersection.

Concerns have been raised regarding the property impacts, amenity, residents safety and the access difficulties for local service vehicles (e.g. garbage trucks) at these properties under the proposal in the Environmental Assessment. To address these concerns, the design for access arrangements in this area will be reviewed during the detailed design phase. One option could be to provide a parallel one way (northbound) service road on the western side of the proposed upgrade along the frontage of these properties through to Station Street. This would retain access arrangements for these properties similar to the existing conditions while also allowing safe access for all vehicles via a service road separated from the highway through traffic.

4.2 Clarifications to the Environmental Assessment

Based on submissions received and further review of the Environmental Assessment following exhibition, the following clarifications and amendments to the document have been made.

4.2.1 Clarifications

- It is noted that Table C-3 of the Environmental Assessment does not reflect internal changes within the NSW Department of Primary Industries. (Submission No.46.)
- The total area of Property No.59 was incorrectly shown in Table 15-1 as 8.9 hectares instead of 9.6 hectares. This also affects the percentage of the total property to be acquired and the total area to be acquired shown at the end of the table. The revised version of Table 15-1 is provided in Appendix B. (Submission No.15.)
- The impact of the proposed cul-de-sac at Seashore Lane (south) on an adjoining property was not included in Table 15-1 of the Environmental Assessment. The amended Table 15-1, Figure 6-1i and Figure 15-4c are provided in Appendix B (consultation during the Environmental Assessment display).
- The property boundary for Property No.59 was incorrectly shown in Figure 6-1g. The correct boundary is illustrated in Figure 15-4c. The revised version of Figure 6-1g is provided in Appendix B. (Submission No.15.)
- Lot D of Property No.51 was omitted from Figure 15-4b. The revised versions of Figures 15-4a to f and Table 15-1 are provided in Appendix B. (Submission No.26.)
- Changes to afflux at South West Rocks Road (Red Hill Lane) were not shown in Table 10-1. The data for this location has been included in a revised version of Table 10-1, included in Appendix B. (Submission No.26.)
- The owner of Property No.94A was incorrectly shown in Table 15-1 as private property and should have been shown as owned by the NSW

Department of Primary Industries (Forests). The revised version of Table 15-1 is provided in Appendix B. (Submissions 31 and 46.)

4.2.2 Typographical errors

- The reference in Section 6.2.4 of the Environmental Assessment for the location of spill containment basins being shown on Figures 6-1a to 6-1s is incorrect and should refer to Figures 7-1a to 7-1f.
- Two values in Table 10-1 were shown incorrectly. For the 500 year event Railway Bridge should have been shown as 11.71 not 10.71 and for the PMF Upstream Frederickton should have been shown as 11.38 not 10.38. The corresponding impacts for these values were shown correctly. The revised version of Table 10-1 is included in Appendix B.
- Noise monitoring was conducted on the property at 2925 Pacific Highway, Barraganyatti, as reported in Table 2-1 of the Environmental Assessment Technical Report 3 – Noise and Vibration Assessment. However the location of noise monitoring on this property was incorrectly indicated in Figure 16-1f of the Environmental Assessment. The revised version of this figure is provided in Appendix B.
- The noise levels indicated in Figures 16-3, 16-5, 16-7, 16-9, 16-11 and 16-13 are for night-time noise impacts and were calculated in dBA (L_{eq9hr}), not dBA (L_{eq15hr}) as indicated.
- The RTA confirms that there was an error in the traffic data presented in Table 3.4 of Technical Report 3 - Noise and Vibration Assessment in Volume 2 of the Environmental Assessment a revised Table 3.4 and 3.5 is attached in Appendix B (Submission 43).
- The DECC Interim Community Consultation Guidelines should be dated 2005, not 2007 (Submission 43).

5. Conclusions and next steps

This Submissions Report has addressed the outcomes of the consultative process conducted during and following the public exhibition of the Environmental Assessment for the proposed Kempsey to Eungai Pacific Highway upgrade.

In addressing both compliance with legislative requirements and the requirements of the consultative process, this Submissions Report demonstrates that:

- The RTA has considered all issues arising from the submissions and provided a written response to the issues raised (Chapter 2).
- Minor modifications to the concept design are proposed, justification that each modification is minor or beneficial has been included (Chapter 4).
- The revised Statement of Commitments, which has been amended as a result of submissions received, demonstrates the proponent's commitment to a comprehensive management approach to reduce environmental impacts (Appendix C).

In consideration of the above, the RTA seeks the approval of the Minister for Planning under Part 3A of the EP&A Act for the proposal as described in Chapter 6 and 7 of the Environmental Assessment and Section 1.2 of this Submissions Report.

6. Revised Statement of Commitments

The Kempsey to Eungai – Upgrading the Pacific Highway Environmental Assessment identified a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts associated with the proposal.

After considering the issues raised in the public and stakeholder submissions, the draft Statement of Commitments for the Kempsey to Eungai Pacific Highway upgrade project has been revised.

These commitments have also been updated from those presented in the project application report and Environmental Assessment and incorporate measures identified through various investigations undertaken as part of the environmental assessment phase. The revised Statement of Commitments now reflects the need to present practical, outcomes-based commitments to facilitate management of impacts during pre-construction, construction and operation.

Should the proposal be approved, the RTA would implement the environmental management measures outlined in the revised Statement of Commitments. Any contractor selected to undertake further planning, design or construction of the proposed project would be required to undertake all works in accordance with these commitments.

The following definitions apply in relation to the revised Statement of Commitments:

Pre-construction	Work in respect of the proposed upgrade that includes design, survey, acquisitions, fencing, investigative drilling or excavation, building / road dilapidation surveys, minor clearing), establishing ancillary facilities such as site compounds or other relevant activities determined to have minimal environmental impact (e.g. minor access roads).
Construction	All work in respect of the proposed upgrade other than that defined as a pre-construction activity / work.
Operation	The operation of the activity, but not including commissioning trials of equipment, or temporary use of parts of the proposed upgrade during construction.

The revised Statement of Commitments is provided in Appendix C.

7. ■ References

Australian and New Zealand Environment Conservation Council (1990) *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting overpressure and Ground Vibration*

Department of Environment and Conservation (2004) *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Working Draft)*, Department of Environment and Conservation, Hurstville.

Department of Planning (2006a) *Draft Mid North Coast Farmland Mapping Project*

Department of Planning (2006b) *Draft Mid North Coast Regional Strategy 2006-31*

Kempsey Shire Council (2004) *Kempsey and South West Rocks Industrial Lands Review 2004*

Landcom (2006) *Managing Urban Stormwater - Soil and Construction*

NSW Roads and Traffic Authority (2004) *Preferred Route Option Report – Kempsey to Eungai – Upgrading the Pacific Highway* – July 2004 prepared by PB

NSW Roads and Traffic Authority (2006a) *Kempsey to Eungai – Upgrading the Pacific Highway - Project Application Report Supporting Information Ecological Assessment* – prepared by PB

NSW Roads and Traffic Authority (2006b) *Kempsey to Eungai – Upgrading the Pacific Highway – Socio-economic Assessment* prepared by PB (unpublished)

NSW Roads and Traffic Authority (2006c) *Kempsey to Eungai – Upgrading the Pacific Highway – Water Quality Report* – prepared by PB (unpublished)

