4 Submissions on the Route Options

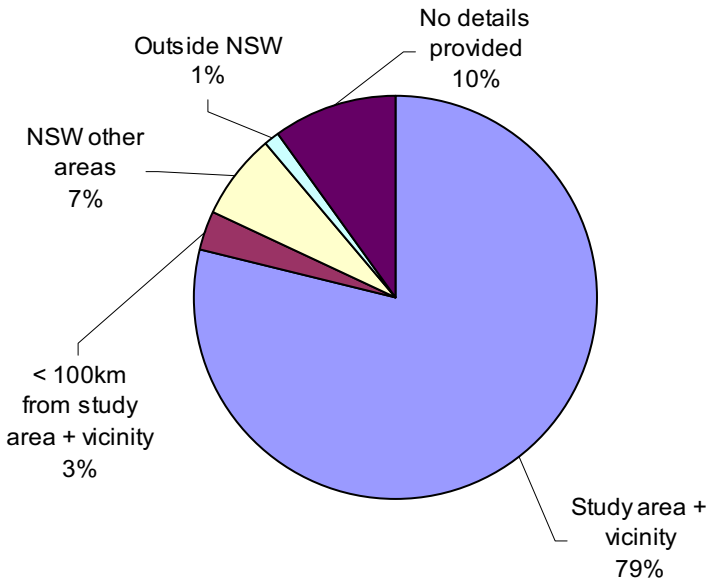
4.1 Overview of submissions

Around 1,600 submissions on the route options from approximately 750 separate households were received (refer to **Table 4-1** for a break-down of the correspondence type).

- **Table 4-1: Submissions Received from the Community and Stakeholders**

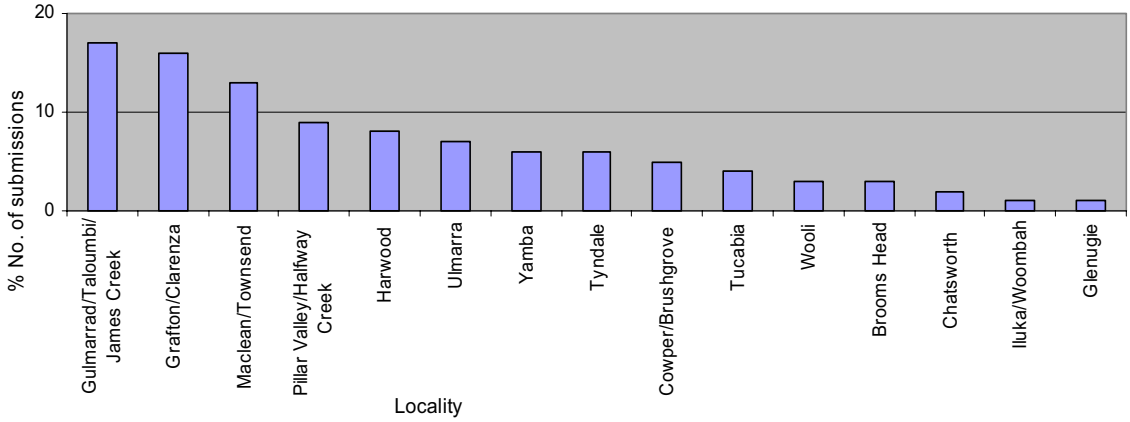
Correspondence Type	Received
Submissions received by community feedback form	869
Submissions received by email	151
Submissions received by letter	309
Submissions received by fax	32
Submissions received by video	1
Submissions received by web community feedback form	120
Submissions received by the Minister for Roads	101
Total number of submissions received	1,583

The large number of submissions reflects the level of interest in the project shown by the community and stakeholders. The contact details provided on the submissions indicate the reach of the communication materials developed for the project. Submissions were received from across the entire study area and surrounding areas, as well as other states within Australia, including Western Australia, South Australia, Northern Territory and Queensland. **Figure 4-1** shows the geographical distribution of submissions' origins.



- **Figure 4-1: Geographical Distribution of Submissions Received**

The majority of the submissions (79%) were received from community members and stakeholders residing within the study area and immediate vicinity (i.e. within 20km of the study area), demonstrating the local awareness and interest in the project. A further break-down of the submissions from the study area and vicinity is shown in **Figure 4-2**.



- **Figure 4-2: Submissions from Study Area and Immediate Vicinity**

The relatively high proportion of submissions from Grafton and Maclean are expected as these towns have higher populations than other localities. The relatively high proportion of submissions from Gulmarrad, Taloumbi, James Creek, Pillar Valley, Tyndale and Ulmarra reflects these communities concerns about the potential of the route options to affect these areas.

4.2 Processing of submissions

Submissions were read and acknowledged and the issues that were raised were recorded in the project database. Contact details were recorded in the database, and comments provided in the submissions were categorised by issues raised as presented in **Section 4.3**.

The submissions were then sorted by issues raised to allow similar issues to be grouped together. Specific issues were then referred to the relevant project team member for a response. This coordinated process allowed the project team to ensure all questions relating to an issue are captured and addressed by the appropriate team member with the relevant expertise.

The author of each submission was assigned a unique stakeholder identification number to allow the issues to be tracked. Where numerous submissions were received from the same household, one stakeholder identification number was assigned to the household. There were 100 anonymous submissions which were all assigned the same stakeholder number. **Appendix E** contains an alphabetical list of submission authors (where confidentiality was not requested) along with the stakeholder identification number and a numerical summary of the issues that were raised. Where individuals requested for contact details to be withheld, these names have not been included in the list of submission authors. However, the issues raised by anonymous submissions and by individuals who have requested their contact details be withheld have been included in this report.

Submissions were received in a number of forms, including letter, fax, email and video. A community feedback form was provided during the route options display period and on the project website to allow members of the community and other stakeholders and easy and reply paid mechanism for providing comment to the project team on the route options. An analysis of the responses provided through the feedback forms is provided in **Section 4.5**.

4.3 Issues raised by community and stakeholders

The issues that were raised in the submissions, and responses addressing these issues, are presented in the following sections. The issues have been summarised, and in some instances paraphrased, to minimise duplication of issues.

4.3.1 Route selection process

Issue No.	Comments on the route selection process	Response	Stakeholder ID
1	I feel the entire proposal is flawed and incomplete.	There was an announcment in November 2004 that advised that the project had commenced. Identification of options was the first major step in the project development process. The next steps include the announcement of a preferred route, concept engineering design and detailed environmental impact assessment. If the project is approved it will proceeed though a number of steps including property acquisition, detailed design and construction. A similar process has been followed for all other sections of the Pacific Highway upgrade	2238, 350
2	The new highway should take the shortest, most practical route but also take into account ecologically sensitive areas and impacts on people.	The Pacific Highway Upgrade Program Objectives and the specific project objectives form the basis for the identification and evaluation of options. The objectives address a range of aspects encompassing social, environmental, functional (engineering) and economics. All of these aspects must be considered during the identification and evaluation of route options and will be the key consideration in the selection of a preferred route. In this context, the preferred route will be the one that, 'on balance', meets the project objectives, and these objectives will be the point of reference during the entire study.	278, 289, 2157, 2251
3	Lessons from the past should have been taken on board and future big picture thinking applied to the study process with a degree of professionalism far beyond what is being shown at the moment.	The study for this project is part of a long-term project being undertaken by the NSW Government to upgrade the Pacific Highway from Hexham to the Queensland border. Knowledge gained from this and other similar road development projects has been applied to the project by the project team.	2219
4	The proposed Pacific Highway upgrade between Wells Crossing and Iluka is the largest project in length that the RTA has undertaken north of Sydney. This proposed upgrade is also the only project of its kind to deviate from the current highway footprint by up to 30 kilometres through an ecologically sensitive site of national significance.	It is acknowledged that this project is the largest undertaken to date. This, together with the particular features of the study area has provided constraints and opportunities for the identification of route options. The options developed represent a range of solutions. Each has its own particular issues that would need to be addressed through the next stages, depening on which option or combination of options is selected as the preferred route.	1909
5	None of this would be necessary if the RTA chose their major routes and highways many years prior to construction. This would then give people prior knowledge of the roads and they would be able to make the decision to buy or sell, rather than the RTA making the decisions for us.	The Wells Crossing to Iluka Road project is one of the final two Pacific Highway Upgrade projects to be announced. The preferred route announcement will provide planning certainty for local communities and pave the way for a construction program to complete the upgrade of the Pacific Highway.	2174 Update response

Issue No.	Comments on the route selection process	Response	Stakeholder ID
6	A quick decision on the preferred route is needed to reduce financial hardship on landowners trying to sell property and to alleviate the stress associated with the unknown. Our plans are now on hold, along with our lives, until an option is chosen. Announce the decision and build the highway ASAP.	With the announcement of the preferred route, land owners will be able to proceed with their plans with greater certainty. There is currently no funding allocated for construction of this project. The timing and allocation of construction funding will depend on a number of factors including traffic volumes, safety priorities and State and Federal budgets.	238, 876, 1346, 2237, 322, 2464, 1866, 2075, 2356
7	Sufficient time to reach a decision for upgrading the Pacific Highway should be taken to demonstrate: ■ meaningful consultation with all stakeholders ■ consideration of human costs ■ consideration of the needs of affected communities ■ review of financial costs ■ transparency and fairness to all ■ NSW Government's best ethical practice	The preferred route will be selected by considering the recommendations of the Value Management Workshop, the issues raised in submissions and the outcomes of additional investigations.	1855, 2473
8	I do not believe all areas have been researched and investigated thoroughly enough.	The project team has obtained data from Clarence Valley Council, all relevant government agencies and stakeholders. It has also received a lot of valuable information from groups and individuals in the community. The project team has undertaken field investigations to enhance and supplement that information. The RTA is confident that the information collected and analysed to date is quite adequate for this stage of the study.	2283
9	It must be remembered that it is obviously contradictory for one government department to declare an area of environmental significance only to have another department want to build an enormous structure across that same area; a structure which will impact on the whole catchment. This begs the question. Does the right hand know and understand what the left one is doing?	The project team has undertaken discussions with Clarence Valley Council and key government agencies including the Department of Planning, the Department of Primary Industries (NSW Forests, Agriculture and Fisheries) and the Department of Environment and Conservation about the project, and there will be ongoing discussions with them about the issues relevant to their area of responsibility. Representatives from the government agencies also attended the Value Management Workshop for the Wells Crossing to Harwood Bridge section of the project, which was held in March 2006.	1998
10	Much of the data with which the designated authorities are basing their assumptions about these proposals are simply untrue, as clearly proven by other government authorities' own publicly available contradictory information, as well as on-the-ground inspection.	The project team established contact with key government agencies at the commencement of the project to request relevant information about the study area. These data were incorporated into a Geographical Information System (GIS) which enables the different constraints to be overlaid. The project team has maintained contact with the government agencies and updated data when new information has become available.	232, 359

Issue No.	Comments on the route selection process	Response	Stakeholder ID
11	Population projections for Grafton, James Creek, Pillar Valley etc are based on old census data and do not reflect the growing trend of people settling in the district. I understand that, had SKM only asked, the Clarence Valley Council would have been happy to provide more up-to-date population data.	Consideration of population growth patterns has been undertaken including a review of population statistics and projections, discussions with Council officers and a review of Council planning and policy documents. SKM confirmed in late 2005 with Council that they have used the latest available data.	262, 2106, 1909, 483, 912, 1978, 2447, 2075
12	Firth Heinz Road has numerous rural residential and farming properties along its 16km length. It has offshoot roads and is a major connecting local road linking Pillar Valley, Wooli, Minnie Waters, Tucabia, Grafton and Ulmarra. I am concerned that if our local area has been left off the map, the impacts of route options in our area have been given little consideration. This is in fact evident in the report.	While Firth Heinz Road is not specifically mentioned in the Route Options Development Report (RTA, 2005), the project team is familiar with the rural residential and farming community in this area. The report acknowledges the Green/C and Red/D options would have potential direct and indirect impacts on residences and rural communities around Pillar Valley. The report also acknowledges the potential impacts on the Red/D option on grazing activities around Pillar Valley.	275
13	The Route Options Development Report states the need for "a precautionary approach to the identification of constraints, recognising that at this early stage of the project there is uncertainty in relation to the accuracy and completeness of data." This suggests that information in the report is incomplete and imprecise. The Value Management Workshop (VMW) was originally scheduled for December 8-9 2005, only seven weeks after the release of the options report. It seems unlikely that SKM were intending to use this seven week period to provide accurate and complete information for the VMW.	The Route Options Development Report (RTA, 2005) acknowledges that there is a degree of uncertainty associated with impacts of the options, due to limited information on some issues. On this basis, a precautionary approach to the selection of the preferred option is stated as an appropriate means of addressing this uncertainty. The project team has undertaken further investigations following the release of the Route Options Development Report (RTA, 2005) in October 2005, to obtain further information for use in the decision making process. The timing of the Value Management Workshop was delayed until March 2006 to enable analysis of submissions and for additional information to be obtained and analysed.	262
14	In discussing the choice of study area, the Route Options Development Report states that a "key consideration … is that improvements along the existing Pacific Highway alignment are unlikely to meet the program and project objectives, and that a new route would be required" (p.27). They continue, "this strategic assumption did not preclude the development of route options involving upgrading, in part or whole, of the existing highway" (pp.27-28). The first statement seems to suggest that the Orange/A option is unsuitable. The second statement is ambiguous: will the assumptions behind the first statement be reviewed, or is the Orange/A option included merely as a foil to the other options?	The rationale behind the identification of the study area was to allow for options that utilise the existing highway alignment, and new route options. The statement quoted is intended to explain that there are constraints associated with the existing highway, and that new route options should be considered in addition to investigating an upgrade that utilises the existing alignment. The process of identifying options recognises that the Orange/A option performs better against some objectives of the project than the other options. However, there are some criteria where it doesn't perform as well as other options. This is the case with all of the options under consideration. The purpose of the process is to provide a range of options and through an assessment process, determine which option (or combination of sections of options) on balance best meets the objectives of the project.	262

Issue No.	Comments on the route selection process	Response	Stakeholder ID
15	At a joint Community Liaison Group meeting on November 9, 2005, RTA representatives stated that the final route option would be chosen by June 2006. It is therefore confusing that the route options report states that the preferred route will be selected by the end of 2005 (p.1).	A number of additional studies were undertaken for this project which meant that this time frame has been extended.	262
16	ESD principles have not been applied: ■ The eastern options, particularly Green/C and Red/D do not conserve ecological diversity and integrity, as these options do not avoid or minimise impacts on high value forests in the east, but threatens them. ■ All key environmental factors should be presented so that they can be meaningfully taken into account at the route selection stage. ■ The number of noise and visually affected residences along the eastern options has been underestimated. ■ It seems economic influences have dominated route options and study zones, rather than a sustainable approach that incorporates community needs and protection of the environment.	The project objectives address a range of aspects encompassing social, environmental, functional (engineering) and economics. All of these aspects were considered during the identification and evaluation of route options and will be the key consideration in the selection of a preferred route. In this context, the preferred route will be the one that, 'on balance', meets the project objectives, and these objectives will be the point of reference during the entire study. The principles of ESD are taken into consideration in route development, with avoidance of major constraints, and consideration of potential impacts and benefits for environmental, social and econmic parameters. It would be impossible to develop route options which avoid all of the constraints within the study area. Hence, the assessment of route options acknowledges the potential impacts on different constraints. It is also important to note that additional investigations have been undertaken since the route options display. More detailed ecological fieldwork was undertaken in November 2005 and the results of these investigations were presented at Ecology Focus Group in February 2006 the Value Management Workshop for the Wells Crossing to Harwood Bridge section of the project in March 2006. Futher investigations were also undertaken following the Value Management Workshop, and these are reported in the Preferred Route Report (RTA, 2006) and working papers for the project. The project team has also gathered more information about the location of potentially affected houses which will be used in subsequent assessments.	2032, 2207, 2106, 275, 262

Issue No.	Comments on the route selection process	Response	Stakeholder ID
17	Figure 6.1 in the study area does not map the rural residential parts of Pillar Valley and surrounding areas (a growing rural residential area) nor the presence of ecological endangered communities (yet the report acknowledges the eastern part of the development of route options in the study area has remnant vegetation and similar to the integrity of bushland in the National Park). Pillar Valley area is depicted on the map as predominately a large white patch (legend does not describe white) which shows few constraints.	The constraints layers presented in Figure 5-9 and 6-1 of the Route Options Development Report (RTA, 2005) are based on information provided by the Department of Planning and the Department of Environment and Conservation. The Pillar Valley area has been depicted as a general rural area. Mapped rural residential areas on the figures are based on land that is zoned rural residential or rural small holdings under the relevant Council Local Environmental Plans. The social assessment recognised the potential impacts in this area of the Green/C and Red/D options. Figure 5-8 of the Route Options Development Report (RTA, 2005) shows ecologically significant areas, at a broad scale. Not all indivuidal areas were shown on the map at that stage. Nevertheless, they were considered by the project team in the development of the options.	275
18	The discussion of population characteristics contains several anomalies. For example, SKM state that low weekly household incomes relate to the large elderly population, when compared to NSW as a whole (p.58). However, Ulmarra, which, with Maclean, has equal lowest median household income, has exactly the same percentage of people over 65 as the NSW average. We are also told that two of the four largest groups of non-English speaking residents come from the UK and New Zealand (p.58). Do they really mean that such substantial numbers of UK and New Zealand migrants don't speak English, as to outnumber non-English speaking migrants from non-English speaking countries?	The discussion of population characteristics relates to Clarence Valley as a whole. While the statistical local area (SLA) of Pristine Waters – Ulmarra has the same proportion of the population aged 65 years or over (13%), this proportion increases considerably in the Grafton SLA (17%) and Maclean SLA (24%). Hence overall, the proportion of the population aged 65 years or over in Clarence Valley overall, is significantly higher than in NSW. The text referring to the largest groups of non-English speaking residents contains a typographical error and should read: "the four largest groups of migrants are from the United Kingdom, New Zealand, The Netherlands and Germany."	262
19	It would be warranted from a public and stakeholder view to consider a report like the Coffs Harbour Highway Planning Working Paper No. 9 Cost Estimates and Economic Analysis for the preferred option in the Wells Crossing area.	Strategic estimates have been prepared in accordance with the RTA's *Project Estimating Manual* (Edition 1, Revision 0, 2001). Once a preferred route is selected, the cost estimates will be refined and the revised costs will be reported to the public.	466

Issue No.	Comments on the route selection process	Response	Stakeholder ID
20	The report propose a major development through an area containing what the National Parks and Wildlife Service describe as “the longest stretch of undeveloped coastline in NSW” and comparison with similar reports for projects to the north (Woodburn to Ballina) and south (Woolgoolga to Wells Crossing) of this project, raises serious questions to which residents are seeking answers.	All of the Pacific Highway Upgrade projects present different constraints and challenges to the project teams which must be considered and addressed during the route selection process. The purpose of the Route Options Development Report (RTA, 2005) is to provide information about the constraints in the study area, the route development and selection process, and an assessment of the route options against the project criteria. The ecological impacts of the route options, along with other environmental, social, functional and economic impacts are presented in the report. It is also important to note that additional investigations have been undertaken since the route options display and further investigations are planned.	119
21	RTA reports for upgrades both north and south of the Wells Crossing project show a much higher degree of detailed information than the Wells Crossing to Iluka Rd project, especially with regards to fragile and/or endangered fauna and flora. Why is this level of detail missing from the Wells Crossing to Iluka Rd report? (Compare the report section titled “Characteristics of the Study Area” between the Woolgoolga to Wells Crossing, Wells Crossing to Iluka Rd and the Woodburn to Ballina route options reports).	The Route Options Development Report (RTA, 2005) has been based on investigations undertaken across a wide range of disciplines. Investigations undertaken to-date have been sufficiently detailed to enable an understanding of the impacts of each option, and to compare between options. The level of investiation undertaken is considered adequate for this stage of the project. Investigations may be reported in a more detailed way for other sections of the Pacific Highway upgrade, where the study area is not as large. It is also important to note that investigations are ongoing. Results of these ongoing investigations are reported in the Preferred Route Report (RTA, 2006). More detailed investigations will be undertaken on the preferred route as part of the concept design stage of the project.	362
22	Why haven't comprehensive environmental surveys been done on the eastern route (Red/D) since its late announcement?	Investigations that enable suitable options to be developed for consideration have been undertaken. The methodologies used to assess the impacts of the route options are generally the same as would be used in preparing an environmental impact assessment for the preferred route. Investigations will be ongoing through the project and there will be detailed environmental assessment following the selection of a preferred route and concept design stage.	470

Issue No.	Comments on the route selection process	Response	Stakeholder ID
23	The Route Options Development Report lacks sufficient information for a decision on the preferred route to be made. Detailed environmental investigations (EIS) are required for each route option.	The Route Options Development Report (RTA, 2005) has been based on detailed investigations undertaken across a wide range of disciplines. This detailed information, along with additional investigations and the information in the Route Options Development Report (RTA, 2005), will all be used to inform the decision on the preferred route. Investigations undertaken to-date have been sufficiently detailed to enable an understanding of the impacts of each option, and to compare between options. The methodologies used to assess the impacts of the route options are generally the same as would be used in preparing an environmental impact assessment for the preferred route.	262, 268, 509, 2400, 362, 2103, 2069, 2352
24	The report states that "the RTA has not yet determined whether an EIS under part 5 of the Act would be required for this project and would not make that decision until a preferred route is selected..." however the people of the Pillar Valley community find that considering the numbers of threatened species of plants and animals in the area, and the importance of the remnant bushland on private properties for connectivity purposes and to biodiversity and indeed to genetic diversity amongst the species, that an EIS is imperative to any planning for large scale development in the area.	The RTA cannot make a decision on whether the project is likely to have a significant impact on the environment until the preferred route is selected. However, the potential impacts of the options have been considered based on relevant statutory requirements. Once the preferred route has been selected, the RTA will take all matters affecting or likely to affect the environment into account and determine the type of environmental impact assessment required under the *Environmental Planning and Assessment Act, 1979.* Recent changes to the *Environmental Planning and Assessment Act, 1979*, with the introduction of Part 3A, have changed the environmental assessment process that is likely to apply to the project. The environmental assessment process will be further explained following announcement of the preferred route.	466
25	All of the proposed routes appear to not take into account the environmental impact on a very sensitive area of the North Coast; an area that is also very productive. All appear to be intent on the shortest possible route.	Refer to response for issue number 2. Investigations undertaken to-date have been sufficiently detailed to enable an understanding of the impacts of each option, and to compare between options. More detailed investigations will be undertaken when a preferred route is identified.	912

Issue No.	Comments on the route selection process	Response	Stakeholder ID
26	How many studies have been done into historical, aboriginal and the environment and how in depth have these studies been? Where is the full information on these matters?	Consultation has been ongoing since the commencement of the project, with representatives of Local Aboriginal Land Councils and Elders Groups and other Aboriginal organisations; and with Council's Heritage Officer. An indigenous and non-indigenous heritage study was undertaken during the route options development phase. This study involved a review of local, state and national heritage registers, and other documentation, as well as field investigations. The project team has also established an Aboriginal heritage focus group. Ecological investigations were undertaken to determine the potential noise, water, air, flora and fauna impacts of the project. The level of investigation was considered adequate to enable comparison of the route options. Additional investigations will be undertaken following the selection of the preferred route, as part of the concept design stage.	1866
27	Has the RTA undertaken any studies as to the health impact of the proposed Red and Green routes to the East? If so, are these available to the public? If not, will these be undertaken before a decision on the preferred route is made? If the report was adverse, will this sway the choice of routes?	Water quality, and noise assessments were released as Working Papers as part of the announcement fo the Preferred Route. Health was also included in the Socio-economic Working Paper and air quaity impacts are reported in the *Preferred Route Report* (RTA, 2006). Refer to response no. 646. The RTA considers the Department of Conservation and Environment (DEC) guidelines in regards to the impacts of air and water quality, and noise and these aspects are considered in the route development process.	1978
28	The RTA has requested community feedback on the proposed route options. A decision on the preferred route will be made sometime in the future. Only then will noise, environmental pollution, ecological, economic and other impact studies be undertaken. This is the tail wagging the dog! Residents are being asked to make their preference for one route but without any criteria to allow them to properly evaluate, ascertain and select a proposal which would be most beneficial for the community as a whole.	The criteria for route options identification and selection are derived from the Pacific Highway Upgrade Program and the specific project objectives, which are included in the Route Options Development Report (RTA, 2005). They relate to a spectrum of functional (design), environmental and social aspects. The investigations undertaken and reported at the time of the route options display were adequate to enable comparisons to be made across these criteria. The evidence for this is in the many detailed submissions received, and through dicussions with the community.	1978

Issue No.	Comments on the route selection process	Response	Stakeholder ID
29	The importance placed on the value management process & the small number of CLG members involved is a flawed process in itself.	The value management process is one of a number of inputs to the selection of a preferred route. The other key inputs are the issues raised by the community and other stakeholders up to and including the route options display, and the technical investigations undertaken by the project team. The number of participants at the workshop was greater than is usual for these types of projects and was expanded to ensure that the full range of views and expertise was available to consider the route options. Generally for projects of this nature, community representatives at a Value Management Workshop would number 2-4. Given the size of the study area and its communities, it was decided to increase that number to six for this project. Those participants were selected from the community liaison groups that have been established for the project. Clarence Valley Council (which also represents the community) provided four representatives. Local business and the cane industry, as well as representatives from Local Aboriginal Land Councils attended the meeting. Collectively, these representatives, drawn from the local community, accounted for 30% of the total workshop participation.	470
30	What is the process for selecting the preferred route? What weights are applied to the criteria?	A preferred route will be selected by considering the recommendations of the Value Management Workshop, the issues raised in submissions and the outcomes of additional investigations. The preferred route will be selected on the basis that, on balance, it performs well against social, environmental and economic criteria.	1917
31	Any route selection needs to be discussed with landowner and resident groups of that area before being announced as we feel that many aspects have and will be overlooked due to the fragmentation of consultative groups and misinformation supplied by others.	The project team has had extensive discussions with land owners on a range of issues, and the route options have been discussed with individual land owners and groups. Once the preferred route is announced by the Minister for Roads, the project team will contact all potentially directly affected property owners as a priority. The project team would be pleased to meet with any landowners or residents groups who have concerns about the project at any time.	539

Issue No.	Comments on the route selection process	Response	Stakeholder ID
32	Government representatives have not been present at any of the meetings held in the Clarence Valley. Does any member of the Government even know where the areas affected by the options given are? I can only come to the conclusion that the wishes and opinions of the people who are going to be affected greatly by the options given are of no consequence to the Government, as the decision has already been made on which option is being taken.	A tour of the study area was an important part of the Value Management Workshop for the Wells Crossing to Harwood Bridge section of the project, held in March 2006. Workshop participants included representatives from a wide variety of interests and organisations including the RTA and project team, Clarence Valley Council, State Government agencies (including the Department of Planning, Department of Environment and Conservation, Department of Primary Industries), business organisations, road user groups such as NRMA and community participants. Almost all of the participants reside and work in the local area or region and are familiar with the constraints and issues pertaining to the study area and others have also had previous opportunities to undertake study area inspections. The project team has also been liaising with representatives from government agencies, and will continue to do so, throughout the project. It should also be noted that a decision on the preferred option had not been made at the time this submission was received.	119, 1850
33	When considering routes for the highway special priority (weighting) must be given to local impacts, including environmental (ecological), social, and economic. Do not just consider the savings in time for long distance travellers as a result of shortening the highway.	Criteria for assessing the route options in terms of functional, social and local economic, and natural environmental considerations were developed at the Value Management Workshop held in March 2006. They included both transport efficiencies and local issues. Participants also weighted the criteria to reflect the relative importance of different criteria.	2240, 1924, 2260
34	The economic burden for maintaining the existing highway would rest with the Clarence Valley Council if an eastern option was selected. This would not be necessary, however, if the RTA followed one of their own objectives for this project and that is to select a route that "maximises the use of the existing road reserve for duplicated sections of the project where possible".	With any of the options, the existing Pacific Highway in either its current or modified form would likely become the responsibility of Council. The nature, condition and future funding of the asset at handover would be a matter of negotiation between Council and the RTA.	163
35	I cannot understand how a motorway which will only cater to 30-35% of traffic volumes currently using the existing Pacific Highway (according to SKM/RTA information) can be considered in such an extremely sensitive and valuable area of national significance.	Refer to response for issue number 2.	380

Issue No.	Comments on the route selection process	Response	Stakeholder ID
36	When evaluating each of the options I would suggest that a higher weighting be applied to the number of residences directly affected.	Criteria for assessing the route options in terms of functional, social and local economic, and natural environmental considerations were developed at the Value Management Workshop (VMW) held in March 2006. Participants also weighted the criteria to reflect the relative importance of different criteria. The outcomes of the VMW are reported in the Value Management Workshop Report, RTA 2006.	474
37	I urge that thorough and thoughtful consideration be given to all matters raised by landowners and residents of the communities who have local knowledge of environmental and ecological issues and whose incomes and lifestyles would be directly affected.	Information and data provided by local residents and property owners have been a very valuable input to the study and has been incorporated in the investigations and consideration of the route options. A local ecologist is part of the project team and has participated in the ecology focus group meetings, as have several local residents with knowledge of the ecology of the study area.	1731

Issue No.	Comments on the route selection process	Response	Stakeholder ID
38	In determining the route for the proposed motorway, please consider the following: ■ that you are dealing with correct data from Council (2005 figures) ■ the long term future of the area ■ maintaining land banks for future generations ■ the percentage of local traffic that will still have to use the existing highway ■ the destruction of habitat of Australia's Coastal Emu & Jabiru, both noted as endangered ■ do not take business away (the western option-.orange, would be the preferred route for Grafton residents) ■ the division of small communities ■ the impact of property values ■ the Wetland areas ■ the real costs if you worked on the correct figures ■ council ownership of existing highway, how will they fund this if valuable subdividable land is taken ■ seven weeks from the time we received our letters (those directly affected) until the day of the decision making process. How can we collect all data necessary? When we have requested further information we have been met with silence. ■ you decide without comprehensive studies done in all areas i.e. archaeological, geological, economic etc ■ be realistic when looking at the crossing of the Clarence River ■ listen to the local people... they know their area best (computers respond to what is fed into them)	Refer to response for issue number 2. In selecting a preferred route for the project, the project team considers all information that is available during the investigations on social, environmental, functional and economic factors, as well as the outcomes of the Value Management Workshop and the community and stakeholder feedback that was provided during the display of the route options. Following the Value Management Workshop, held in March 2006, further investigation was undertaken and this is also taken into consideration, including more recent data from the Council. More detailed information is available in the Value Management Workshop Report and Working Papers that are available as part of the preferred route announcement. Discussions with the community across the study area has also been undertaken and is continuing, which has provided additional anecdotal information to be considered. The data collected and information being considered are adequate to enable comparison of the route options and to allow a preferred route to be determined.	1535
39	Surely human beings and their livelihoods mean more than emus, frogs, and noise	Refer to response for issue number 2.	1709
40	Global warming and associated climate change risks demand that governments engage in long-term planning to counter the effects of an ever-increasing consumption of fossil fuels, not actively promote and encourage continued reliance upon them. Pollution control and climate change have the potential to make much of New South Wales uninhabitable.	Development of a new route for the Pacific Highway does not preclude the use of road based or other forms of transport that are energy efficient and assists in reducing greenhouse emissions, as such technology is developed in the future.	231, 466, 2263

Issue No.	Comments on the route selection process	Response	Stakeholder ID
41	The numbers of "affected" houses reported were generated by counting visible roofs off 2004 aerial photographs. Such poor methodology is open to gross error. For example, every shed, barn, outhouse or derelict building along the existing Pacific Highway, of which there are many, may have been counted as a house; whereas, conversely, many genuine dwellings elsewhere in bushland shaded by trees may have been missed. This standard of research is clearly unacceptable.	This approach has been used as a means of providing an overview of land use across the study area, for the purposes of comparing and contrasting the potentional impacts of the route options. Current information is sufficiently accurate to enable comparative evaluation of the route options.	174, 1953
42	At the southern end of the study area, there are only two route options and not four as we were led to believe i.e. the overlapped Orange/A – Purple/B route and the overlapped Green/C – Red/C route.	The options were developed as those that best met the objectives, with no prior commitment to the actual number of options that would be considered.	247, 275, 359, 1887, 2096, 2231, 2276, 2299, 2320, 2391, 2406, 2417, 2418, 2420, 2430, 2440, 2486, 2505, 2506, 2507
43	Two of the proposed route options have been assessed as having high ecological impacts, and another — moderate. The remaining route is assessed as having a high social impact. Therefore, the question that has to be asked: Why has there been no attempt to explore options that minimise all these impacts?	Given the existing range of land uses and scale of development in the study area it will not be possible to identify an option that would not have any social and/or environmental impacts. The Route Options Development Report (RTA, 2005) describes the process that has been undertaken to identify options that do minimise impacts. The nature of the study area is that options that are optimal from a social perspective tend to have greater impacts on the natural environment, and vice versa. All of these aspects must be considered during the identification and evaluation of route options and will be a consideration in the selection of a preferred route. In this context, the preferred route will be the one that, 'on balance', meets the project objectives, and these objectives will be the point of reference during the entire study.	231

Issue No.	Comments on the route selection process	Response	Stakeholder ID
44	The Orange/A option does not meet the project objectives.	The overall program objectives for the project include: ■ reduced road accidents and injuries; ■ reduced travel time; ■ reduced freight transport costs; ■ development of a route involving the community and considering community interest; ■ provision of a route that supports economic development; ■ managing the upgrade in accordance with ESD principles; and ■ provision of value for money. The nature of the study area does not allow for the development of routes that will best achieve all of these objectives, however, all have been considered in the development of the route options and the Orange/A Option does allow for the support of all of these objectives, albeit some more so than others.	893
45	The community suggested option (C1) does not meet objectives of the upgrade program because it is located a substantial distance east of Grafton and is unlikely to attract local traffic from the existing highway. The Purple/B, Green/C and Red/D options do not meet the objectives either.	Refer to response for issue number 44. It is acknowledged that the Orange/A option meets the transport objectives better than the Purple/B, Green/C and Red/D options because more traffic would use the Orange/A option.	2106, 1909
46	I hold concern that the options selected provide very limited scope. There are essentially eastern and western options and all three eastern options intersect Pillar Valley which reduces any chance of route selection not affecting this area, considering that the route options report states that strategically improvements along the existing highway alignment are unlikely to meet the program and project objectives. This should have meant that more short listed options require investigation to provide sounder comparative assessment.	Refer to response for issue number 2. The short-listed route options that were placed on display were those that performed best in relation to the criteria.	2207, 2106, 2221
47	My opinion is maybe the NSW sugar industry may have something to do with your decision to go through Harwood Village instead of around it. Obviously the Harwood village community are not as important as the Harwood Sugar Mill.	The RTA undertook to investigate an option to the east and to the west of Harwood. These investigations are reported in the Preferred Route Report (RTA, 2006).	2388

Issue No.	Comments on the route selection process	Response	Stakeholder ID
48	The Green/C option has been included to divide the currently united communities of Gulmarrad / James Creek and of Pillar Valley / Bostock Road to facilitate the achievement of Red/D as the preferred option. With part commonality and other identified links between all four options, there are in fact 16 different possible routes providing extensive opportunities for RTA/SKM to exploit their manipulative and divisive strategies in dealing with the community, and ultimately to achieve their own ends.	The development of the project including the identification of route options is based on objective technical investigations. Given the nature and scale of development in the study area it is not possible to identify options that have no potential impact on anyone. Notwithstanding this, it is an important part of the study to endeavour to identify options that avoid communities. It should also be noted that the Pacific Highway Upgrade Program objectives and the specific project objectives form the basis for the identification and evaluation of options and one of these objectives is to "develop a route that involves the community and considers their interests."	174
49	Could you please explain why the eastward loop in the Red/D and Green/C routes around Pillar Valley actually goes right through the centre of the village? The information package seems to indicate that the eastward loop was to avoid Pillar Valley but unfortunately, the loop takes the routes straight through the village of Pillar Valley. The topographic map. Pillar Valley, 9538-3-N clearly shows the location of Pillar Valley Village and the houses located there.	The Green/C and Red/D options were designed to minimise direct impacts on houses in the Pillar Valley locality. The routes avoid the main cluster of houses in this area. Pillar Valley is defined by the Geographic Names Board of NSW as a "locality". Its location appears in different positions according to the map sourced. The location of Pillar Valley on the communication material for the route options was obtained from the NRMA Touring Map for the Far North Coast of NSW (2004).	912
50	The RTA claims that the Pacific Highway Upgrade program conforms to the principles of Ecologically Sustainable development (ESD). ESD is defined in the NSW Local Government Act to be the implementation of the following principles: ■ The precautionary principle namely, that if there are threats of serious or irreversible damage to the environment, and an assessment of the risk weighted consequences of various options. ■ Inter-generational equity, namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. ■ Conservation of biological diversity and ecological integrity namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration. ■ Improved valuation and pricing of environmental resources. All four of these principles would be violated by the construction of routes B, C or D.	The Pacific Highway Upgrade Program objectives include to "Manage the upgrading of the route in accordance with ecologically sustainable development principles." The process of developing the route options has considered the principles of ecologically sustainable development through the consideration of social, environmental and economic factors in the development and assessment of route options.	268, 362

Issue No.	Comments on the route selection process	Response	Stakeholder ID
51	Is there any law against billboards on private land beside a Motorway? If one passes by or through my property I intend to advertise the personal injustices that occurred as a result of the Motorway.	Advertising signs adjacent to the road would be subject to approval from Council and would need to comply with advertising guidelines and standards produced by the RTA.	175
52	If the change in the Environmental Planning and Assessment legislation on the 1 August 2005 results in any processes being removed, investigation of the project should recommence or we should fall under the old process as we were under this safeguard and these process at the commencement of the project. To date SKM or RTA have been unable to explain in detail or confirm what the changes mean in terms of assessment of the project. The community needs this information.	The Route Options Development Report (RTA, 2005) explains the assessment and approval processes under Part 3A and how they may apply to the project. However, specific advice on the statutory processes for the project cannot be definitively provided until a preferred route is selected. If an EIS is considered necessary under the provisions of Part 5 of the Environmental Planning and Assessment Act, the project would now be assessed as a major project under the new Part 3A of the Act. Part 3A requires detailed assessment of those issues that are of major importance for this project, and a similar level of environmental assessment is likely to be undertaken regardless of whether the project is assessed under Part 3A or the Environmental Impact Statement provisions of Part 5.	275, 2106, 2207
53	Select the most cost efficient route that has the least impact on community, flooding and the environment and go with it as soon as possible.	Refer to response for issue number 2. At this time, funding has not been allocated to the construction of the project so the specific timing of the construction is not known.	1956
54	The highway is of national interest and should take the most direct possible route. The highway is going to benefit the 7 million people living in Sydney, Brisbane and in between. Look at the big picture of providing safest, shortest route between Brisbane and Sydney.	The project objectives, including the reduction of road crashes and serious injuries; reduced travel times, reduced freight transport costs, and the provision of a route that supports economic development are considered to benefit both the local community as well as the wider community travelling up and down the eastern coast. The preferred route will be selected following a process that considers input from the community feedback received, the social, environmental and economic investigations and from the discussions and outcomes of the Value Management Workshop. The approach aims to balance the many factors for consideration and determine the route that best meets the objectives of the project and minimises impacts to the surrounding communities and environment.	1205

Issue No.	Comments on the route selection process	Response	Stakeholder ID
55	Comments on the route selection process: ■ Choose the option that causes the least disruption to peoples' lives and livelihoods and is the most cost-effective to construct. ■ Safety is the first priority. ■ The eastern options have been discussed for a long time and therefore, should be no surprise. ■ The least number of people are affected by the Red/D option. ■ The Orange/A option impacts on the most properties of any of the options being considered.	The route options that have been presented to the community have been considered in light of the project objectives, including the reduction of road crashes and serious injuries, reduced travel times, reduced freight transport costs, and the provision of a route that supports economic development. All of the short listed route options are considered feasible but perform differently in terms of meeting the objectives of the project. The number of properties that are impacted by the routes are considered along with other potential impacts including other social impacts, as well as environmental and economic impacts.	150, 237, 425, 530, 863, 893, 898, 1426, 1583, 1958, 1967, 2159, 2278, 2279, 2283, 2291, 2362, 2432, 2471, 2510

4.3.2 Other route options

Issue No.	Comments on other route options	Response	Stakeholder ID
56	An upgrade of the Summerland Way should be considered as it would: ■ Create employment along the route ■ Provide economic benefits along the route ■ Minimise impacts on businesses ■ Shorten the distance of travel ■ Save fuel cost and usage ■ Separate a large percentage of heavy transport and vehicular traffic on the Pacific Highway, thereby improving safety ■ Encourage through traffic ■ Eliminate the huge cost of building a dual carriageway bridge over the Clarence ■ Build on existing road infrastructure ■ Be located in close proximity to the Main Northern Railway ■ Be complemented by transport developments occurring in Southern Queensland around Beaudesert. ■ Provide three safe routes from Sydney to Brisbane; New England, Pacific Highway and the Summerland Way ■ More than meet the RTA's objectives ■ Provide a second bridge for Grafton ■ Minimise impacts on properties, farming / agricultural land and houses ■ Avoid flood prone areas ■ Minimise impacts on people ■ Avoid noise, pollution and litter impacts on the beautiful Clarence Valley ■ Be able to be constructed in stages and allow for the possible bypass of Ballina in the future ■ Have lower construction costs ■ Minimise environmental impact ■ Have much less ecological impact	The Member for Ballina and others suggested a four-lane dual carriageway inland corridor that follows the Summerland Way to south of Casino, then follows a new east-west route to join the Pacific Highway at Tyagarah/Ewingsdale, near the turn-off to Byron Bay. The group also supported safety upgrades on the Pacific Highway, such as a Ballina Bypass. At the request of the (then) Minister for Roads, the Hon Joe Tripodi MP, a fresh look at the issues surrounding the inland corridor has been undertaken by the RTA. Two options for the inland corridor were put forward, and have been further developed by the Roads and Traffic Authority (RTA) in order to achieve engineering standards and minimise impacts where possible. The RTA examined both alternatives at a strategic level to quantify the key physical features of each in terms of road length and width, horizontal and vertical alignment, the extent of earthworks cut and fills and key physical, environmental and social constraints. This report is available from the RTA.	119, 150, 163, 174, 175, 240, 268, 271, 273, 275, 316, 322, 326, 345, 350, 354, 362, 380, 382, 393, 399, 402, 409, 412, 414, 420, 426, 430, 439, 480, 483, 486, 500, 502, 529, 530, 595, 604, 622, 632, 863, 886, 887, 949, 993, 1099, 1100, 1139, 1142, 1144, 1186, 1224, 1491, 1535, 1567, 1850, 1855, 1866, 1877, 1887, 1910, 1917, 1975, 1978, 1983, 1996, 2041, 2047, 2048, 2055, 2075, 2087, 2088, 2091, 2096, 2099, 2106, 2109, 2111, 2120, 2136, 2141, 2144, 2146, 2158, 2184, 2185, 2189, 2193, 2207, 2219, 2231, 2233, 2234, 2238, 2241, 2249, 2253, 2258, 2267, 2276, 2286, 2289, 2290, 2293, 2299, 2303, 2304, 2307, 2310, 2311, 2312, 2315, 2317, 2320, 2330, 2344, 2348, 2351, 2352, 2355, 2359, 2361, 2375, 2388, 2390, 2391, 2392, 2394, 2395, 2406, 2417, 2418, 2420, 2430, 2435, 2440, 2447, 2458, 2465, 2472, 2486, 2487, 2496, 2499, 2505, 2506, 2507, 2510, 2557, 2566

Issue No.	Comments on other route options	Response	Stakeholder ID
57	A route which follows the Main Northern Railway near the Summerland Way should be considered as it would: ■ Require less acquisition of private land ■ Impact on fewer people ■ Impact on less agricultural land ■ Provide a new bridge for Grafton ■ Be cheaper ■ Be more direct, thereby decreasing travel time ■ Avoid environmental sensitive areas such as Nature Reserves and State Forests	Refer to response for issue number 56	354, 412, 950, 2088, 2303, 2310, 2329, 2447,2487
58	A Grafton/Casino/Lismore connection: ■ Would remove impact on high growth residential area of the Lower Clarence ■ Would protect intensive cane farm land and help the struggling sugar industry ■ Remove through traffic, leaving only local and tourist travellers ■ Land is already owned by the government as railway and roadway corridors and should greatly reduce the cost of construction.	Refer to response for issue number 56.	608, 1011
59	The route that best meets the issues is: ■ Along the existing highway to Grafton ■ Construct a bridge over the Clarence River ■ Continue route north to the west of Lawrence township ■ Continue to the west of Tullymorgan township and realign with the existing highway in the Tabbimoble / New Italy area	During the early development stages of the project, a long list of options were evaluated and were found to be not feasible for various reasons. The four route options and two connections that were developed for the project between Wells Crossing and Harwood Bridge are considered to best meet the project objectives under the existing constraints and compexities of the study area.	1087, 1538, 2133
60	Cross the Clarence River between Ulmarra and Grafton then head onto Casino and inland to Brisbane for through traffic. This would leave a local tourist road and access road in the Maclean area, thereby avoiding disruption to the present rural area to the west of Yuraygir National Park.	Refer to response for issue number 56.	2488

Issue No.	Comments on other route options	Response	Stakeholder ID
61	Consider a bypass of Grafton to the west and a direct straight tunnel through border range via Beaudesert.	Refer to response to issue number 56. A possible connection between the Summerland Way and Beaudesert in Queensland is seen as a very long term strategy, given the current program commitments as described in the *South East Queensland Infrastructure Plan and Program 2005 – 2026* by the Queensland Government and the difficulties of the mountainous border crossing. Under the *South East Queensland Infrastructure Plan and Program 2005-2026* , the priority over the next 20 years is towards further improvements to the Pacific Motorway between Brisbane and the New South Wales/Queensland State border and upgrading the Mt Lindesay Highway to as far south as Beaudesert to service future patterns of development. There are no indications of funding or investigations for improving road connections and freight transport on the Mt Lindesay Highway between Beaudesert and the State border.	2498
62	The study area excludes any option of moving heavy traffic onto the Summerland Way with the option of joining to the section of the Pacific Highway which has already been upgraded or proceeding to the Queensland heavy transport interchange at Beaudesert.	The Pacific Highway was approved as a full B-Double route from Hexham to the Queensland border in 2002. Heavy vehicles are required to transport freight to local populations, which are concentrated along the coast and are more accessible from the Pacific Highway. Furthermore, the purpose of the Pacific Highway Upgrade Program is to develop a high standard road alignment for all road users, not just heavy vehicles. A report on the technical review of the inland route via Summerland Way has been prepared and is available from the RTA.	266

Issue No.	Comments on other route options	Response	Stakeholder ID
63	A specific freight route along the Summerland Way should be developed. This would improve safety on the Pacific Highway as the heavy vehicles would be separated from normal motorists and holidaying visitors.	Refer to response for issue number 62.	125, 150, 160, 174, 247, 274, 275, 305, 342, 348, 357, 362, 376, 382, 409, 439, 459, 465, 470, 475, 483, 494, 500, 521, 604, 612, 1076, 1099, 1142, 1632, 1871, 1877, 1887, 1891, 1924, 1953, 1991, 2088, 2096, 2106, 2120, 2136, 2220, 2231, 2237, 2244, 2248, 2249, 2276, 2277, 2308, 2320, 2322, 2332, 2349, 2391, 2403, 2406, 2412, 2415, 2417, 2418, 2420, 2421, 2422, 2424, 2425, 2430, 2458, 2472, 2500, 2560, 2570
64	The Summerland Way option would not directly help the traffic problems. The growth area is the coast and it will continue to grow for many years. Through traffic and high volume local traffic need a safe motorway along the coastal strip. Trucks will still need to use the coastal highway as with added growth comes the need for added delivery to businesses. Unless the Summerland Way route is duplicated by a four lane coastal route, the Summerland Way route would not reduce the traffic problems in the long term. In addition, the Summerland Way route would also have a negative affect on the Border Ranges National Park and surrounding areas, and be difficult to construct due to the hilly terrain.	Refer to response for issue number 56.	2399
65	It is difficult for me to know whether the Summerland Way route for the new highway is one which has merit. I do know, however, that SKM's study area (and then the extended study area) has been known to the public for quite a number of months but there was no comment from local politicians in rejection of the study area and support of the Summerland Way back then. Raising the Summerland Way issue at this stage smacks to me of political posturing and only serves to delay what should be expedited.	Refer to response for issue number 56.	2278

Issue No.	Comments on other route options	Response	Stakeholder ID
66	The recent call for following the Summerland Way doesn't consider that people travelling up and down the coast don't want to detour inland. I love the Yelgun to Tweed upgrade and would love the same to Coffs.	Refer to response for issue number 56.	2354
67	Any route using the Summerland Way is a waste of public money as the Pacific Highway has the most traffic and needs the most attention.	Refer to response for issue number 56.	230
68	Give Grafton a new bridge	The RTA undertook a Feasibility Study for an additional crossing of the Clarence River in the vicinity of Grafton in February 2003. This project is separate from the Pacific Highway Upgrade Program and is not being considered as part of the Wells Crossing to Iluka Road project.	150, 494, 500, 1871, 2144, 2293, 2395
69	Other areas further west should be investigated. I feel that this is a quick fix rather than a correct fix.	Refer to response for issue number 56.	2238, 350
70	Avoid Harwood Island village and consider alternatives such as: ■ East of the village eg. along Beckmans Lane ■ West of the village eg. along Cannons Lane	The RTA undertook to investigate an option to the east of Harwood and also investigated an option to the west of the vilage. These investigations are reported in the Preferred Route Report (RTA, 2006). The investigation concluded that while options to the west and east of Harwood village are feasible, a route along the existing road corridor is preferred, This route would enable efficent use of existing assets, would facilitate a staged develeopment of the upgraded road and would minimise impacts on cane farms.	425, 500, 1179, 1461, 1491, 1871, 1910, 1975, 2052, 2087, 2317, 2327, 2388, 2405, 2502
71	I would prefer Red/D option to continue east of Harwood to Iluka Road. This would minimise impacts on James Creek and Harwood village.	The RTA investigated an option to the east of Harwood. This is reported in the Preferred Route Report (RTA, 2006). The investigation concluded that while an option to the east of Harwood village wouild be feasible, a route along the existing road corridor is preferred, This route would enable efficent use of existing assets, would facilitate a staged develeopment of the upgraded road and would minimise impacts on cane farms. A route to the east of the village would have direct impacts on a large area of cane land both north and south of the river.	156, 2467
72	Is it necessary to build a second bridge through Harwood village? Surely with the Purple/B option you can veer to the left bypassing the village, linking up with Chatsworth Island – 4 lanes 3km north.	Refer to response for issue number 71.	2502

Issue No.	Comments on other route options	Response	Stakeholder ID
73	A coastal route should be developed either: ■ along the Coast Range ■ along the Old Coast Road ■ on the edge of the National Parks, through State Forests and Crown land A coastal route would: ■ Be cheaper ■ Be more direct ■ Have less floodplain issues ■ Use publicly owned land ■ Have less impact on small villages ■ Have less impact on prime agricultural land ■ Use building materials (gravel and rock) that are available on-site ■ Provide a fire break.	A route further east of the study area would not meet the objectives because it would: ■ have major impacts on the Yuraygir National Park and State Forests, both of which contain large areas of vegetation with important ecological values. ■ be very expensive because of the large earthworks volumes required to construct through rugged terrain. It is important to note that National Parks are protected as they serve the broader community for conservation, recreational and amenity purposes. A route through a National Park would only be considered if there are no other feasible options within the study area. The route options for the Wells Crossing to Iluka Road project are all feasible options for the upgraded highway, and therefore an option through the National Park was not considered further. Furthermore, traffic investigations have concluded that the further an upgraded road is located east of the existing highway the less attractive it is to traffic. Consequently, a route futher east along the coats would not improve the opportunity to meet the project's traffic and transport objectives.	150, 174, 270, 606, 622, 647, 1108, 2112, 2276, 2357, 2393, 2399, 2464, 2498, 623
74	The new highway should start from the present highway in the vicinity of the Red Rock turn-off. While this route would require extra bridges, it would be considerably shorter.	Refer to response for issue number 73	227
75	I am not personally in favour of a 'Coast Range' option (C3). However, I found it rather illogical for the report to list the impact on rural residents as a reason why it does not "meet the objectives of the Pacific Highway Upgrade Program" when short-listed route options also go close to rural residential areas (p.86). Indeed, route C3 could have been amended so it followed Green/C or Red/D past Gulmarrad; routes which presumably do meet the aforementioned objectives, since they have been short-listed.	Option C3 is not considered to meet the objectives of the Pacific Highway Upgrade Program for a number of reasons. While the section north of Taloumbi could have been changed to follow the Green/C or Red/D options, the section south of Taloumbi would still have substantial ecological impacts and would require substantial earthworks to meet vertical grade standards. It would also be longer than the Green/C and Red/D options. It should also be noted that all of the options will have some impact on residential, rural residential or rural communities but the options have been designed to minimise these impacts.	262
76	There should be a thorough investigation of the advantages and disadvantages of upgrading the existing highway to Class A rather than Class M status, to minimise impacts on existing residences.	Under the Pacific Highway Upgrade Program, Class A roads are designed with provision to enable conversion to Class M standard in the future. It should also be noted that a Class A road would require a similar road corridor to a Class M and would result in similar impacts on residences.	262, 362, 949

Issue No.	Comments on other route options	Response	Stakeholder ID
77	The existing Pacific Highway between Grafton and Maclean should be upgraded to a Class A road with dual carriageway status and a 100 km/hr speed limit	Class A roads are designed as controlled access roads, with direct access from local roads at limited locations, and interchanges with major roads where traffic demand justifies the cost. Generally, no direct access to private property is allowed. As a result, Class A roads would still require some service roads to ensure property access is maintained, resulting in a similar footprint width to Class M roads. In some cases, the inclusion of at-grade intersections (rather than interchanges) may require a wider corridor than the Class M arrangements. Under the Pacific Highway Upgrade Program, Class A roads are designed with provision to enable conversion to Class M standard in the future.	125, 160, 174, 247, 275, 305, 342, 348, 357, 362, 376, 382, 409, 439, 459, 465, 475, 483, 494, 500, 521, 604, 612, 1076, 1142, 1632, 1877, 1887, 1891, 1924, 1953, 1991, 2088, 2096, 2106, 2120, 2136, 2220, 2231, 2237, 2244, 2248, 2276, 2277, 2308, 2320, 2322, 2332, 2349, 2391, 2403, 2406, 2412, 2415, 2417, 2418, 2420, 2421, 2422, 2424, 2425, 2430, 2500, 2560, 2570
78	The existing Pacific Highway from Shark Creek to Harwood Bridge should be upgraded to a Class A road. This upgrade would be consistent with the upgrade of the section of highway immediately to the north and would minimise the impact on properties adjacent to the existing highway. No service roads would be required as no farms access this section. Therefore the road reserve could be minimised. Why is it necessary to have a Class M motorway on the only section of the highway where the local traffic exceeds the through traffic?	Refer to response for issue number 77.	163, 175, 230, 266, 271, 1953
79	A Class A road along the Orange/A route seems the most sensible option. The volume of traffic in this section of the Pacific Highway upgrade does not justify a class M motorway.	Refer to response for issue number 77.	160
80	A Summerland Way Class A upgrade and an upgrade of the Pacific Highway would be as destructive as a motorway along the Orange/A option. According to RTA information; “In an A Class upgrade the RTA always acquires enough land for an M Class upgrade in the future”. An upgrade of the existing highway between Wells Crossing and Grafton would take more dairies as well as more of the best farming land in the Clarence Valley than the Orange/A option.	Refer to response for issue number 77.	289
81	The new Class M highway (motorway) should start / end near Tyndale. The distance between Tyndale and Iluka turnoff could be upgraded to a Class A, but stay where it is.	Refer to response for issue number 77.	417

Issue No.	Comments on other route options	Response	Stakeholder ID
82	The impact around James Creek and Townsend needs careful consideration. May need a lesser standard road.	Refer to response for issue number 77.	230
83	Upgrade the existing highway because it would: ■ Allow the RTA to build on an existing asset, thereby providing safety benefits sooner and at less cost ■ Reduce the likelihood of intensification of flooding ■ Confine social impacts to residents living alongside the existing highway who purchased their land knowing and accepting the highway as their neighbour ■ Avoid unnecessary ecological impacts ■ Maintain the highway's commercial and logistical connection with Grafton ■ Not bisect established farms	The RTA has developed design standards for all projects within the Pacific Highway Upgrade Program to ensure that the upgraded highway has a consistent, safe design and also meets the environmental and social objectives of the Program. The Orange/A option has been developed to follow the alignment of the existing highway where possible, with some deviations to achieve the required design standards (eg 1 in 20 year flood immunity and design speed of 110 km/h). A duplication of the existing highway would not meet the Pacific Highway Upgrade Program objectives. RTA is considering a package of substantial improvements to the existing highway as part of the selection of the preferred route. These would improve the safety of the existing highway in conjunction with the new alignment. This would also provide opportunities for staging works during construction of the preferred route.	160, 247, 275, 354, 360, 380, 409, 412, 426, 439, 465, 486, 494, 524, 912, 1142, 1355, 1535, 1866, 1953, 2032, 2096, 2106, 2173, 2207, 2231, 2265, 2276, 2308, 2310, 2320, 2322, 2384, 2391, 2406, 2409, 2412, 2415, 2417, 2418, 2420, 2430, 2440, 2458, 2473, 2482, 2486, 2500, 2505, 2506, 2507, 2558
84	Considering we already have an existing road, why not simply build another identical road beside it? Grafton could be bypassed near Four Mile Lane, rejoining the highway at Swan Creek, Ulmarra bypassed through cane fields and cut through more cane fields around Shark Creek.	A duplication of the existing highway would not meet the Pacific Highway Upgrade Program objectives or design standards. These design standards have been developed for all projects within the Pacific Highway Upgrade Program to ensure that the upgraded highway has a consistent, safe design and also meets the environmental and social objectives of the Program. The Orange/A option has been developed to follow the alignment of the existing highway where possible, with some deviations to achieve the required design standards (eg 1 in 20 year flood immunity and design speed of 110 km/h).	2310
85	Why can't the highway remain out the front of Tyndale? The government spent money there to update the highway once before. All they need to do is remove the bend there to make the road safer, and to widen the road. It is my understanding that the RTA has already purchased land on the western side of Tyndale to do just that.	Refer to response for issue number 84. In considering the design of the upgrade, allowance must be made for inclusion of the two carriageways in addition to services roads, thus requiring considerable land acquisition.	1115

Issue No.	Comments on other route options	Response	Stakeholder ID
86	The Orange/A option would impact on most of the blocks on Four Mile Lane. The environmental and social impact could be greatly reduced by shifting the alignment to the east. This would impact on fewer properties, less forested land be less noisy and deleterious to the quality of life presently enjoyed. If the Orange/A option was selected, a shift to the east as described would reduce the impact (including noise) of the interchange on blocks at the southern end of the lane.	Minor re-alignment of the options could be considered as part of the refinement of the preferred route to minimise impacts on individual properties or groups of properties, or to address other issues such as ecological or heritage constraints. However, changes to alignments beyond the 250 metre wide corridors identified in the Route Options Development Report (RTA, 2005) would only occur where a substantial benefit to the project is identified in relation to the project objectives, and further assessment may be required to identify impacts. Consultation with potentially affected communities would also be undertaken.	270
87	A route which deviates to the east of the Green/C option and west of the Red/D option north of Brooms Head Road should be considered. The route should either follows the Spur and cross the river at an angle or cross the river to the east of the sugar mill. From there, it would veer to pick up the current highway near the Serpentine Channel or even go direct to the Monaro Bridge. The suggested re-alignment would utilise more elevated land, minimise impacts on Gulmarrad and James Creek and possibly Harwood village (depending on the river crossing), result in fewer construction difficulties and provide opportunities for a new bridge crossing further downstream than the Red/D route. The suggested re-alignment would also eliminate the complexities associated with the construction of an interchange on top of the existing interchange.	An option between the Green/C and Red/D options north of Brooms Head Road, would be subject to similar flooding and geotechnical conditions to the Red/D option but would also require the crossing of a SEPP14 wetland. It would also impact on a number of residences along James Creek Road. An option to the east of the existing alignment (north of the Clarence River) would require either a new corridor over much of the island or would add length to the overall section (approximately 1 to 2km). It would also have greater impacts on cane land than an upgrade adjacent to the existing highway.	294
88	A better alternative would be a deviation from the existing highway south of the Purple/B interchange, then following a northerly alignment, passing between Grafton Airport and the Coldstream River to the existing highway near the mouth of the Coldstream River.	From a design perspective the route nominated would cross what is potentially the lowest section of the floodplain, requiring significant ground improvements in order to construct the embankments. In addition, there would still be a requirement for significant structures in order to cater for the flooding. Hence the option would present significant engineering risks at a high cost. It would also impact on a number of residences along Avenue Road, Old Coldstream Road, Lower Coldstream Road and Calligans Creek Road.	2306

Issue No.	Comments on other route options	Response	Stakeholder ID
89	A route through Glenugie State Forest should be considered to minimise impacts on privately held land in the southern end of the study area.	Minor re-alignment of the options could be considered as part of the refinement of the preferred route to minimise impacts on individual properties or groups of properties, or to address other issues such as ecological or heritage constraints. However, changes to alignments beyond the 250 metre wide corridors identified in the Route Options Development Report (RTA, 2005) would only occur where a substantial benefit to the project is identified in relation to the project objectives, and further assessment may be required to identify impacts. Consultation with potentially affected communities would also be undertaken.	150, 247, 598, 2096, 2231, 2276, 2320, 2391, 2406, 2417, 2418, 2420, 2430, 2440, 2486, 2505, 2506, 2507
90	The Purple/B option could end just short of Pillar Valley to keep the noise away from them.	Refer to response to issue number 89.	413
91	Requested minor modifications to the alignment of one or more of the route options	Refer to response to issue number 89.	232, 635
92	The Purple/B option twists and winds its way around the airport when there seems to be a more direct route from Eight Mile Lane to Wants Lane without encroaching on other homes.	Refer to response to issue number 89.	1707
93	Realign the Red/D option to avoid cane farms at Amos Road Palmers Channel	Refer to response to issue number 89.	2491
94	Road safety authorities state that separation of heavy vehicles and passenger vehicles is the best way to reduce the road toll. With this point in view the Red/D option should be a two lane road for heavy vehicles (3 tonne plus) only, with E tag for all vehicles.	Motorway-standard roads, i.e. Class M roads, are the safest type of road for carrying large volumes of traffic. They separate opposing traffic streams, reduce head-on collisions, and reduce conflict between through traffic and turning traffic by having grade-separated interchanges. While it is an objective of the Pacific Highway Upgrade Program to reduce freight transport costs, it must also cater for the needs of all road users.	2131
95	Whatever happened to the surveyed 1940 route on all master maps at land board offices?	The development of the Pacific Highway needs to be undertaken under the traffic and transport, and land use considerations that exist today.	2218
96	The Summerland Way route would result in less land acquisition as most of the land is government owned.	With more development along the coast than along an inland corridor, it is correct to say that there is generally more property acquisition (numbers of properties) required on the Pacific Highway upgrade than on the inland alternatives. It is not correct to say that most of the land is government owned.	2079

4.3.3 Extension of the study area

Issue No.	Comments about extension of the study area	Response	Stakeholder ID
97	The study area has been expanded to cover the whole of, or part of, the South Arm of the Clarence River north from Cowper. Surely the river is an environmental constraint.	No expansion of the study area to incorporate the Clarence River north of Cowper has been proposed. The Orange/A option as shown in the Route Options Development Report (RTA, 2005) is presented as a 250 metre wide corridor, based on a nominal road centre line. This graphic representation resulted in some parts of this corridor being shown into the Clarence River in some locations. It is not the intention that the road would be constructed over the Clarence River in the locations shown. The investigation corridor was illustrated to convey that the actual alignment of the road for each option has not been fixed, and could be located within the corridor subject to further environmental assessment and design development.	1099
98	The RTA assured residents of the Clarence Valley at the commencement of the project that the study area was 'set in stone'. However, the RTA still expanded the study area to the east. Despite this, the RTA has refused to expand the study area to the west, in particular to include an assessment of the Summerland Way.	The study area was defined by the RTA prior to commencement of the project as a basis for initial investigations. However, the study area for the project is indicative and subject to change based on the findings of constraints analysis and route option development. The review of the study area boundary is summarised in Section 5.1.3 of the Route Options Development Report (RTA, 2005), and included consideration of potential extensions to the west. The RTA considered options to the west of the Clarence River and these are discussed in Section 6.5 of the Route Options Development Report (RTA, 2005). The RTA has undertaken and investigation to the Summerland Way in a study separate to the Wells Crossing to Iluka Road project.	350

Issue No.	Comments about extension of the study area	Response	Stakeholder ID
99	Page 25 of the Route Options Development Report states that 'community and stakeholder comment, together with further investigations by the project team was an important factor in the decision to extend the study area'. This statement is misleading. Community members at the public meeting in December 2004 and at CLG meetings were in the most part calling for an investigation of options along the coast range, not for the specific extension which occurred in the east of the study area. This is a deliberate distortion of the truth. Extensions in other Pacific Highway upgrade projects have been more thoroughly explained and justified than what is presented in the Wells Crossing to Iluka Road report.	The study area was extended as a result of comment during community information sessions in 2004, issues raised at a Planning Focus Meeting with government stakeholders and investigations by the project team. Community and other stakeholder comments were recorded at the Information Sessions held in Grafton and Maclean on 1 and 2 December 2004. A broad range of issues were raised during these information sessions, including suggestions to extend the study area to the east. Community members provided a number of reasons for the study area to be extended to the east. These included: ■ Minimising impact on private land by using public land within State Forests and National Parks ■ Providing a fire break ■ Avoiding floodplain areas ■ Ease of construction and shorter distances. It is important to note that National Parks are protected as they serve the broader community for conservation, recreational and amenity purposes. A route through a National Park would only be considered if there are no other feasible options within the study area. The route options for the Wells Crossing to Iluka Road project are all feasible options for the upgraded highway, and therefore an option through the National Park was not considered further. During a Planning Focus Meeting held on 2 December 2004, government stakeholders raised concerns about areas within the study area having high ecological value, including but not limited to the Pine Brush State Forest. As stated in the Route Options Development Report (RTA, 2005), the study area was extended east around Pine Brush State Forest to provide the potential for route options in the east of the study area that did not affect this area or the Shark Creek SEPP 14 wetlands. The announcement of the extended study area followed a review of the study area by the study team, which included consideration of issues raised by the community and other stakeholders. It is not uncommon for a project to develop in this way during the early stages of planning. The purpose of the route options development phase is to seek to generate routes that can provide a balance across function, social and environmental issues, while providing value for money and taking community input into account. The extension of the study area was developed as a result of the project team considering all of these aspects.	275

4.3.4 Consultation process

Issue No.	Comments on consultation process	Response	Stakeholder ID
100	Expressed concerns regarding the Route Options Development Report, including: ■ Data is not up to date. ■ Population growth in the Clarence Valley since 1998 not included. ■ Information provided to the community was misleading / inadequate. ■ Inadequate and unfair criteria used to assess route options. ■ Information is biased. ■ Information based on desktop research and not on environmental impact assessment of each option.	The Route Options Development Report (RTA, 2005) was developed using the information available at the time. Information was sought from additional organisations and authorities and was incorporated with the data that was provided by the respective sources. As information is updated, this information is incorporated into the route selection process. The methods used to collate the information presented in the report ranged from desktop research and preliminary investigations. The level of investigation is consistent with the stage of the project design. Full impact assessments and investigations are not undertaken at this early stage. Further detailed investigations are undertaken when a preferred route is approved and concept design is commenced. This process is in consistent with requirements provided by RTA and relevant legislation. Population figures have been checked with Clarence Valley Council and are confirmed to be the most up to date available.	129, 174, 262, 266, 271, 275, 362, 371, 380, 466, 893, 912, 1017, 1099, 1224, 1331, 1866, 1909, 1917, 1953, 1978, 2032, 2091, 2207, 2106, 2189, 2292, 2311,2321, 2346, 2352, 2377, 2409, 2447
101	■ Community issues/input was not considered in the Route Options Development Report	Consultation with the community commenced in late 2004 and has continued during the development of the Route Options Development Report (RTA, 2005) where new information was available to report. Feedback from the community is at all times considered by the project team. Consultation with the community will continue throughout the project and information will be provided as it is available.	129, 174, 262, 266, 271, 275, 362, 371, 380, 466, 893, 912, 1017, 1099, 1224, 1331, 1866, 1909, 1917, 1953, 1978, 2032, 2091, 2106, 2189, 2207, 2292, 2311, 2321, 2346, 2352, 2377, 2409, 2447

Issue No.	Comments on consultation process	Response	Stakeholder ID
102	Expressed concerns regarding the Route Options Development Report, including: ■ Inconsistencies and inaccuracies in the information provided. ■ Too much technical jargon and abbreviations ■ Colours used in maps are confusing and can not be interpreted by colour blind people	Any errors, omissions and inaccuracies that have been highlighted during the consultation process have been taken on board and will be considered as part of the route selection process. This includes clarity of the information presented.	129, 174, 262,266, 271, 275, 362, 371, 380, 466, 893, 912, 1017, 1099, 1224, 1331, 1866, 1909, 1917, 1953, 1978, 2032, 2091, 2106, 2189, 2207, 2292, 2311,2321, 2346, 2352, 2377, 2409, 2447
103	■ Number of affected properties reported in the Route Options Development Report is not accurate. Aerial photography not adequate to determine this figure. ■ More detailed maps showing property boundaries with respect to the route options were required.	The landowners that were identified through data obtained through Council and other sources were contacted where contact details were available and a map to show a 250m corridor with respect to property boundaries was provided on a copy of an aerial photograph.	129, 174, 262,266, 271, 275, 362, 371, 380, 466, 893, 912, 1017, 1099, 1224, 1331, 1866, 1909, 1917, 1953, 1978, 2032, 2091, 2106, 2189, 2207, 2292, 2311,2321, 2346, 2352, 2377, 2409, 2447
104	■ No methodology or results of investigations are included in the Route Options Development Report.	The Route Options Development Report (RTA, 2005) presents an overview of the findings from the investigations undertaken for the project. Additional information on the social, environmental, functional and economic issues are reported in the working papers for the project. When the working papers are finalised are publicly available.	129, 174, 262, 266, 271, 275, 362, 371, 380, 466, 893, 912, 1017, 1099, 1224, 1331, 1866, 1909, 1917, 1953, 1978, 2032, 2091, 2106, 2189, 2207, 2292, 2311,2321, 2346, 2352, 2377, 2409, 2447
105	The Route Options Development Report should be withdrawn or updated with more information. The current proposal should be withdrawn until further information is available to the community.	The RTA considers the information provided in the Route Options Development Report (RTA, 2005), in conjunction with the large amount of information gathered during the landowner meetings and ongoing consultation activities as adequate for the route selection process.	174, 270, 1955, 2377

Issue No.	Comments on consultation process	Response	Stakeholder ID
106	It was not clear to the community that there is an opportunity to use a combination of the routes.	The community feedback form provided in the Community Update requested respondents to indicate sections of the map that were preferred along the length of all four routes. During discussions with community members, this opportunity was also highlighted to individuals.	262
107	Not enough information was provided to allow the community to make an informed decision: ■ Some topographic maps provided to potentially affected landowners show the 250m corridor outside the study area.	The information that was provided to the community is considered adequate for this early stage of the project. More detailed information will be available as the study investigatons proceed. The 250m corridor was a nominal width to allow for some flexibility as is required during early stages of the project. Until further information is available, this is a reasonable indication of the estimated route corridor.	174, 231,247, 262, 266, 268, 270, 271, 275, 362, 371, 380, 412, 466, 501, 949, 1142, 1349, 1535, 1611, 1852, 1866, 1868,1887, 1909, 1912, 1917, 1955,1978, 2032, 2091, 2106, 2203, 2207, 2311, 2321, 2333, 2346, 2352, 2381, 2388, 2408, 2409
108	More detail was provided in the Route Options Development Report for other sections of the Pacific Highway upgrade, including economic/cost studies; social impacts studies; environmental studies; traffic studies. Technical working papers were provided for other Pacific Highway Upgrade projects, why not for Wells Crossing? Why are there different report standards for the different Pacific Highway projects? More CLG meetings were held for other Pacific Highway projects than for Wells Crossing to Iluka Road.	Each project is subject to a different set of parameters and this will result in differences in presentation of information, investigations undertaken and liaison with the community and community liaison groups.	174, 275, 359, 362, 380, 466, 1868, 2032, 2106, 2180, 2207, 2292, 2352
109	The location of Pillar Valley is incorrectly positioned on maps used during the route options. This is misleading. The description and location of Pillar Range in the Route Options Development Report is confusing and differs to local community understanding	Pillar Valley is defined by the Geographic Names Board of NSW as a “locality”. Its location appears in different positions according to the map sourced. The location of Pillar Valley on the communication material for the route options display in October 2005 was obtained from the NRMA Touring Map for the Far North Coast of NSW (2004).	119, 163, 262, 275, 359, 362, 371, 501, 912, 1349, 1887 ,1978, 2106, 2207, 2311, 2333, 2342, 2345, 2352, 2352, 2384, 2409

Issue No.	Comments on consultation process	Response	Stakeholder ID
110	The period for submissions for the route options was not adequate: ■ Two week extension is not adequate ■ Three months should be provided for public response to this project ■ The four week submission period started when the route options were announced. However, many members of the local community received information during the week following the announcement	The RTA initially announced that the route options would be on display for a period of four weeks. Following consultation and community feedback this period was extended a further two weeks, to 2 December. All submissions received up to January 2006 were included in this report. The announcement for the route options was made on 21 October 2005. The project team initiated contact with the community as soon as was possible. Potentially impacted property owners were contacted first, with phone calls commencing immediately after the announcement. Letters were posted as soon as the announcement was made. Advertisements were placed in the local newspapers within the study area and a series of staffed displays were held and display posters were posted on boards across the study area. Community feedback also resulted in an increased number of locations for the display material. Website material was also available for the public as was an advertised project hotline and email address to allow a greater reach of the community and increased opportunities to contact the project team.	119, 174, 247, 262, 265, 275, 299, 362, 382, 466, 1011, 1352, 350 1357, 1855, 1955,1978, 1983, 2106, 2141, 2174, 2207, 2255, 2311, 2312, 2333, 2342, 2345, 2350, 2352, 2362, 2408, 2409
111	The feedback form (from within the Route Options Community Update) does not adequately allow an opportunity to highlight issues/concerns The feedback form does not include all communities / localities	The route options community feedback form provided in the community update was developed to assist and encourage the community to provide comments on this project. The community was also encouraged to provide a written submission. Submissions received were in the form of letters, emails, route options submission forms and a video. Every submission was accepted and considered as part of this route options submission report. The localities provided in the route options community feedback form were general areas within the study area. This information was predominantly for the RTA to understand the reach of the display material.	247, 465, 893, 1912, 2050, 2174
112	(Some) Members of the Community Liaison Group (CLG) are not satisfied with the CLG process: ■ Issues raised in CLG not taken seriously. ■ CLG members not considered representative of community.	RTA does not expect or require CLG members to be representatives of or 'speak for' any broader community group. However, issues raised by the CLG are considered and taken seriously. The benefits of the CLGs, where the same members meet each time, is the level of information and discussion can grow as the project develops.	262, 266, 371, 893, 1583,

Issue No.	Comments on consultation process	Response	Stakeholder ID
113	Dissatisfaction with the community consultation to date: ■ Community issues are not taken into account. ■ Representatives in the Community Liaison Groups do not represent all communities. ■ The consultation process is divisive. ■ There is a lack of transparency. ■ Information on the potential impacts and route options should have been brought to public attention sooner. ■ Interactive map on website is not easily accessible for all of the community. ■ Further consultation with the community required. ■ Consultation undertaken during times when few tourists are in the area.	Community consultation for this project is being undertaken in accordance with established RTA practices The consultation strategies included advertisements, displays, display posters, Community Updates, meetings with individuals and groups, provision of a freecall telephone number, email and a website. These methods were developed to allow for wide community input within the study area. The Community Liaison Groups have been established to provide two way communication, and for the project team to gain greater knowledge of issues in the study area. It is a voluntary role and the RTA does not require its members to 'speak for' any broader community group.	174, 247, 262, 266, 275, 371, 409, 439, 465, 466, 501, 647, 893, 912, 1186, 1267, 1535, 1538,1583, 1866, 1955,1978, 2032, 2055, 2091, 2106, 2138, 2180, 2207, 2219, 2276, 2311, 2312, 2322, 2345, 2362, 2381, 2388, 2406, 2417, 2500, 2503 , 2540
114	Response to issues raised from project team inadequate. ■ Requested data were not provided. ■ Too long to respond to issues raised. Can information be obtained under Freedom of Information (FOI)?	The project team makes every effort to respond to issues as soon as possible and provide the information requested if this information is available. Where information is not available at the time of request, the request is tracked using a communication management system to ensure it is provided when it is available. The Freedom of Information Act 1989 provides the right to: ■ Obtain access to information held as records by State Government Agencies, a Government Minister, local government and other public bodies; ■ Request amendments to records of a personal nature that are inaccurate; and ■ Appeal against a decision not to grant access to information or to amend personal records.	231, 247, 261, 262, 266, 275, 893, 1535, 1955, 1978, 2106, 2207

Issue No.	Comments on consultation process	Response	Stakeholder ID
115	Lack of consultation with relevant Government authorities and other special interest associations/organisations. Additional consultation with relevant Government authorities and other special interest associations/organisations required.	Consultation with all relevant Government authorities, organisations, interest groups and expertise within the community is an ongoing process and expands as additional sources are identified. All contacts made with the project team are recorded in the project communication management system unless the project team is otherwise advised. Project communications are disseminated to everyone who has agreed to receive information. As new contacts, including the local community are identified, the reach of project information is expanded. This is also part of the continuous improvement system followed by the project team. The project team has also contacted many different authorities and organisations to ensure as much knowledge and information is gathered during this initial stage of the project. This includes the Department of Environment and Conservation, Department of Primary Industries, NSW Heritage Office, Department of Planning, Local Government and Local Aboriginal Land Councils.	262, 327, 2438
116	Announcement of five Pacific Highway options at once overloads Government agencies, other agencies and special interest groups	The route options for the five Pacific Highway projects were on display for six weeks from Friday, 21 October 2005 to Friday, 18 December 2005. The exhibition included staffed and static displays. Submissions on the five Pacific Highway projects are accepted at any time.	2207, 2106
117	What is the RTA and SKM involvement in TourismTask Force and the relevance of the organisation to this project?	The RTA and SKM are members of the Tourism Task Force. According to its webiste, TTF Australia is the peak industry group for the tourism, transport and infrastructure sectors. The TTF has not had any involvement in the project to date.	275, 2106, 2207
118	Some property owners potentially affected by route options were not contacted	Ownership details for potentially affected properties were based on data sets provided by Clarence Valley Council. During the route options display period and the subsequent consultation with the local community, more property information has been provided and this is being recorded and the project details updated.	262, 1866, 2055, 2503

Issue No.	Comments on consultation process	Response	Stakeholder ID
119	Expressed concern about the value management process: ■ Value Management Workshop should be deferred until the Summerland Way option investigated. ■ Workshop should be adequately represented by all communities	The Value Management Workshop was held in early March 2006. The Minister for Roads announced that the Summerland Way option would be investigated concurrently with the continued progress of Pacific Highway projects. A summary of information on community issues collected during discussions, meetings and in submissions was provided to all VMW participants. This,and other information, enabled the participants to gain a good understanding of issues concerning all of the communities across the study area. The community representatives did not represent individual communities, rather broad community views from within the study area.	174
120	The RTA should be open to scrutiny by and held accountable to the general public.	The RTA is required to be accountable to the public.	1978
121	Members of Clarence Valley WIRES have extensive experience with native animals in this region and would appreciate the opportunity to be involved in future discussions on the impact of the highway on wildlife and their habitat.	Information from Clarence Valley WIRES has been provided during the submission process for the route options. Consultation with WIRES will continue as futher investigation as part of the next stages of the project, for the preferred route and concept design.	327
122	In the assessment and planning process, the conservation and preservation of the social and environmental values of the locations involved should be the driving objective of the upgrade of the Pacific Highway transport corridor rather than economic drivers. The NSW Ministry of Transport together with the RTA should pursue a strategic planning program that incorporates adequate and comprehensive consultation with relevant stakeholders along the Pacific Highway route from Hunter River to Queensland border before major developments are given approval.	The objectives for the Pacific Highway Upgrade Program and the Wells Crossing to Iluka Road project include objectives related to social and environmental aspects, as well as traffic and safety and transport efficiency. A consultation program has been developed for the Wells Crossing to Iluka Road project (refer to Section 2.1 for further information). Community feedback is welcome at any time and all of the issues raised will be taken into consideration in the selection of a preferred route.	2032

4.3.5 Design

Issue No.	Comments on design	Response	Stakeholder ID
123	In relation to possible impacts on the Yaegl Nature Reserve and SEPP 14 wetlands, the report notes that design measures may allow the road footprint to be minimised, thereby reducing the stated possible impacts (which are based on a 100 metre road reserve) (p.101). Are such design options available elsewhere, for example, minimising the number of currently road-fronting residences which would have to be removed? Given that such residents have chosen to live with current highway noises, it is likely that some may prefer design options which leave them close to the motorway, over compulsory acquisition. By not providing comparative figures for such an option, and not presenting any explanation as to why it has been ruled out, the report again appears to be maximising its account of the impact of the Orange/A option on existing residences.	The measures to minimise the road footprint (eg use of retaining walls in place of batters) could be used in other locations. This will be further considered at the concept design stage in consultation with landholders.	262
124	In your booklet showing a typical cross section, a second local traffic road would need to be added to allow access to the other section of their property. This second local road would not be needed if the new highway were to be built in a new area, later adding a further maintenance burden on local councils.	In some locations, service roads will be required on both sides of the upgrade, however this would be minimised wherever possible through measures such as reducing property severance and provided cross-highway upgrade where severance occurred.	536
125	How many service centres will there be between Coffs Harbour and Ballina and where these be placed?	The location of Service Centres is a matter for Local Government with guidance of a Section 117 Direction from the Minister for Planning. However, for road safety, employment and provision of services reasons, the RTA would like to see a number of Service Centres develop.	1866
126	The Orange/A option has three dangerous curves immediately south of Harwood Bridge.	The options have been designed to the RTA's Pacific Highway Design Guidelines. The radii used for the curves are higher than the minimum required.	2433
127	The easement should be kept at 100 metres not 250 metres as proposed, to have as little impact on Townsend as possible.	The final road reserve required for the highway will be minimised as far as practical, which will result in a width of approximately 100 metres. The 250 metre corridor was used in the display of options to allow for design development.	357

4.3.6 Flooding

Issue No.	Comments on flooding	Response	Stakeholder ID
128	To achieve a 1 in 20 year flood immunity along the Orange/A option, a defacto levee bank would be created between Grafton and Maclean. The embankment would have the potential to change the flood dynamics of the river with the likely increase of flood damage and duration of inundation. This change in river dynamics would create significant potential to impact negatively on rural areas and townships on the floodplain, including Grafton, South Grafton, Southgate, Ulmarra, Lawrence, Ashby, Maclean, Brushgrove, Tyndale, Shark Creek and Tucabia. There has been insufficient evidence from hydrology surveys to support the theory that this development would not exacerbate flooding and increase risks for farms and residents on the study fringes.	The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). Typical design limits for changes to these properties are 50mm increase in flood height for a given storm event and 5% increase in the flood duration. At this stage, the specific limits of change have not been finalised. The option allows for a significant number of bridges and culverts to allow water to flow into and out of the floodplain and hence maintain the existing storage capacities. It is acknowledged that the risk of adverse impacts from flooding is higher on the Orange/A Option than those with shorter floodplain crossings. This will be considered in the selection of the preferred route and balanced against other issues such as environmental impacts, safety and social impacts.	125, 180, 231, 268, 289, 299, 350, 356, 426, 520, 530, 604, 612, 621, 622, 632, 893, 902, 971, 976, 1016, 1087, 1099, 1108, 1212, 1583, 1611, 1668, 1729, 1783, 1855, 1870, 1885, 1958, 2047, 2069, 2096, 2123, 2148, 2150, 2211, 2230, 2275, 2278, 2279, 2282, 2283, 2291, 2308, 2335, 2348, 2380, 2380, 2385, 2389, 2397, 2407, 2419, 2436, 2489, 6219
129	Even small increases in flood levels eg. 50mm could put floodwater into houses that would otherwise not have been inundated.	Potential impacts on flood behaviours and freqeuncy are a key consideration in the project. Specific impacts will be considered and addressed as part of the design and assessment of the preferred route.	125, 2312, 2238
130	The construction of another levee (the new motorway) would render the protective levees in place around Grafton, South Grafton and Maclean ineffective. The Clarence Valley can ill afford a raised motorway which will further raise flood heights all along the river, with potentially catastrophic consequences.	Refer to response for issue number 128. By minimising the impact on the flows into and out of the main floodplain storage areas (eg the Coldstream Basin), the impact on levees around Grafton and Maclean would be minimised. It is acknowledged that the risk of adversely effecting flood behaviour at Grafton, Maclean and other leveed urban areas is higher for the Orange/A option than to the other options.	536, 942, 982, 1583, 1885, 2278, 2389
131	Given the dramatic effect that the South Grafton levee had on flood levels both above and below Grafton in the 2001 flood, no assurance can be given that the effects on the restriction of water flow would not cause a substantial rise in river levels as we now know that the construction of levees has caused as much as 900mm rise in flood levels. The new levee wall in South Grafton pushes a lot more water down river through Ulmarra and Maclean.	Refer to response to issue number 128.	536, 893, 2105

Issue No.	Comments on flooding	Response	Stakeholder ID
132	The Route Options Development Report indicates that the motorway design would adopt a maximum flood level increase of up to 50mm. There is no human capacity to make such a prediction or to provide any guarantees given the vagaries of future flooding. It is estimated by the experts that have dealt with our floods for the past 30-40 years and know the history of our floods that this type of roads will give us a rise of 900mm at the Prince Street levee in Grafton.	The hydrology study is being undertaken by WBM Oceanics, which undertook the Lower Clarence River Flood Study and which has a significant level of knowledge and understanding of flooding issues in the study area Information on previous storm events has been use to calibrate the computer model and improve the accuracy as much as practically possible. The project team is confident that through good engineering design the changes to the flooding heights can be reduced to levels similar to those nominated rather than 900mm.	893, 1885
133	It is prudent that the floodplain and its environment be left alone and its integrity not destroyed.	While flooding and the integrity of the floodplain is an important consideration, the preferred route will be the one that, 'on balance', meets the project objectives The project objectives includes a range of aspects encompassing social, environmental, functional (engineering) and economics.	893, 982, 2566
134	The proposed Ulmarra Bypass would create a ring levee around the town and produce previously unknown flooding dangers. An underpass of the highway would be unusable, as it would be acting as a spillway for this dam.	The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). The Orange/A Option includes various bridges and culverts to allow water to flow into and out of the floodplain and hence maintain the existing storage capacities. Modelling to date has and discussion with the Hydrology Focus Group indicates that changes to the flooding heights can be minimised to provide levels similar to the existing. More detailed hydrology investigations will be undertaken as part of the concept design.	536, 893
135	A vast collection of experience and knowledge of flooding issues exists within the local community.	It is acknowledged that the community holds a vast amount of experience and knowledge of local flooding issues. A Hydrology Focus Group has been established and this comprises a number of local community members as well as organisations with flooding knowledge and responsibilities. Discussions regarding flooding have been held with numerous community members and landholders to date. The hydrology investigations are being undertaken by WBM Oceanics, which undertook the Lower Clarence River Flood Study for Council in 2003.	893, 1855

Issue No.	Comments on flooding	Response	Stakeholder ID
136	My lack of faith with the RTA's statements is supported by the work they did in 1996 when they realigned the Pacific Highway along the front of our farm. The RTA said that the existing road surface would not be raised because that would require very involved impact studies. The RTA then went ahead and raised the surface one metre. In about the mid to late 1980's the RTA raised the highway surface over about a five kilometre section near our farm. Floodwater previously flowed over the five kilometre section about knee deep into the Coldstream Basin. The small raising of the surface now places an extraordinary pressure on the mouth of the Coldstream River causing extreme erosion during times of heavy rain. All floodwater must now forge its way in through the river mouth and then flow back again. Only time will prove to us who are affected by that work from the RTA, as to how the river will cope.	Refer to response for issue number 128. The comments regarding the Coldstream basin have been noted in the consideration of the route option. Should Orange/A Option be selected as the preferred route, this would be taken into consideration in the design.	1108
137	The Orange/A option would take all the high land on the Clarence River bank between Swan Creek and Tyndale. All these properties have their houses, sheds, silos, hay sheds, silage pits on this ground. The high ground is also used to get cars, tractors and machinery out of the flood water.	The comments have been noted. If the Orange/A Option is selected as the preferred route, the needs of individual property owners would be discussed and assessed with regards to higher ground for animals and equipment in times of flood.	180, 289, 2397, 623
138	All of Harwood Island is under water when it floods. Both sides of the current bridge are affected. Any changes to the Clarence Valley landscape would have great impacts on flooding in the lower reaches of the Clarence, in particular the Harwood Island area. Levee walls, building up of roads and the building of structures in the river itself, all impact on the flow of floodwaters seaward, therefore spreading and deepening the water and keeping floodwater landlocked longer. The construction of the proposed bridge and corresponding road support levies (which would run perpendicular to the river flow) would exacerbate the situation in flood times. By restricting the seaward water flow a damming effect would raise water levels upstream having a devastating consequence on the Harwood and Maclean communities. Villages in the river's delta further down stream would experience turbulent flows due to venturing of floodwater under the proposed bridge. Under flood conditions the highway would be blocked at the lowest points and unusable if the route is to be so close to the coast.	Refer to response to issue number 128. It is acknowledged that any changes to the floodplain will impact on the flood behaviour. While the road across Harwood Island is likely to be raised, various bridges and culverts would be included to allow water to flow across the floodplain. The project team is confident that through good engineering design the changes to the flooding heights can be reduced to levels similar to the existing. Where the new bridge is proposed, the piers would be aligned with the existing bridge piers in order to minimise the impacts on the flood flows. In addition, the flow width below the existing bridge would not be reduced, which would also minimise the impacts on the flood flows. Across the floodplain, the height of the proposed upgraded highway, is generally higher than that of the existing highway, with a minimum flood immunity set for the 1 in 20 year event. As such the closure of the highway due to flooding is expected to be less frequency than is currently the case.	1910, 1974, 1186, 1975, 2052, 2166, 2169, 2307, 2327, 2388, 2557

Issue No.	Comments on flooding	Response	Stakeholder ID
139	The environmental impact due to the construction of the structure itself, or indirectly as a result of additional flooding caused by the structure certainly has not been established.	The specific environmental impacts resulting from construction have not been established, however the specific construction impacts are generally controlled through the consent conditions from the Minister of Planning. Also refer to response to issue number 128. The impacts of the flooding, post construction, are not expected to be dissimilar from the existing.	1910
140	All (or some) of the options have the potential to cause major flooding issues that would prevent us from getting to the nearest shops, town or hospital.	Refer to rsponse to issue number 128. The preferred route will provide for at least one carriageway above 1:20 flood event. It will also improve access during flood, including access for emergency vehicles.	2117
141	How will a large bridge and interchange at Harwood affect flooding? How will water get away?	The design of the new Harwood Bridge would be such that the piers would be aligned with the existing bridge piers in order to minimise the impacts on the flood flows. In addition, the flow width below the existing bridge would not be reduced, which would also minimise the impacts on the flood flows. Like the upgraded highway, the interchanges will need to be designed to consider the localised flood patterns and be designed to minimise the changes to existing flood patterns.	402
142	All options would impact on flood behaviour as there would be less area for floodwaters to disperse.	Due to the alignment of the existing highway and the extent of the study area all options cross the floodplain to some extent. The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities).	174, 373, 598, 2075, 2273
143	The Red/D option is the option which is most subject to flooding as it is located on low lying alluvial floodplain and therefore would be dangerous during these times.	In terms of length across the floodplain (and crossing of soft soils), the Orange/A Option has a significantly longer crossing than the other options: ■ Orange/A – 38km ■ Purple/B – 13km ■ Green/C – 5km ■ Red/D – 10km It is acknowledged that the areas outside the floodplain are still subjected to flooding and this must be considered in the design of the preferred route.	2312

Issue No.	Comments on flooding	Response	Stakeholder ID
144	The Green/C option would be the best as it is mainly built on higher ground.	The comments are noted. Green/C is aligned on higher ground. However, while flooding is an important consideration, the preferred route will be the one that, 'on balance', meets the project objectives. The project objectives includes a range of aspects encompassing social, environmental, functional (engineering) and economics.	2312
145	The area from the ferry North [of Ulmarra] is a flood overflow area and this would have serious implications for any adjacent motorway built to meet a 1 in 20 year flood level.	It is acknowledged that the area north and east of Swan Creek is floodplain area and the design of the options needs to ensure the design provides sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). Typical design limits for changes to these properties are 50mm increase in flood height for a given storm event and 5% increase in the flood duration. At this stage, the specific limits of change have not been finalised. The design aims to maintained flooding heights at levels similar to the existing.	982
146	At present when the Clarence is in major flood, the highway is cut for up to 5 days.	The comments have been noted and passed to the hydrologists on the project team.	1956
147	Back in the fifties when we had lots of floods there weren't to be any more highways built near the river banks.	The comments have been noted.	2181
148	I thought the State Government was supposed to protect farms.	The nature and operation of existing land uses is a consideration in the study, including productive lands.	2181
149	If the Purple/B option was constructed, it would increase the local creek levels in times of flood, some of which are already impassable. In the last flood in 2001, fences were washed away by the amount and the velocity of the water. One fence, was newly erected in 1998 which had a break away system incorporated in it, but the water took out 4 strainer posts, top stays and nine posts all of which were still attached to each other by the five strands of wire!	Refer to response to issue number 128. The comments on the 2001 flood have been noted and passed to the hydrologists on the project team. This information is consistent with the modelling for the project to date.	169, 1707
150	Engineering work can overcome whatever obstacles with flooding.	The comments have been noted.	2319

Issue No.	Comments on flooding	Response	Stakeholder ID
151	The Coldstream River breaks its banks first at our boundary when the river is in flood, giving us up to 12 hours to move everything, get supplies for the house etc. We can also get flood from the mountains on the other side, which floods our property through the centre and front areas. We note that there is no mention of such an event in your Report. The floodwaters can hang around our properties for 3 weeks and even when they subside, depending on tides and the operation of floodgates, it is impossible to move around these properties in any vehicle or machinery for a further 2 -3 weeks, depending on the time of year also. Livestock cannot be returned for at least 3 months and cannot be moved off the high ground for 3-4 weeks and this can only be done now from the area at the front gate (which you will take). We note that your report makes no mention of the frequency of flooding in this area. We have been told that in 1988/1989 our area had 16 events, from minor to major flooding making it impossible to run livestock or crop.	The comments on the 2001 flood have been noted and passed to the hydrologists on the project team. Modelling to date for this project has shown that there are a number of ways which flooding can be generated: ■ Clarence River flooding ■ Local catchment flooding (eg Coldstream River or smaller catchments) ■ storm surge / king tide. In the concept design phase, consideration will be given to each of these types to flooding to ensure that the worst case scenario is allowed for, within the limits specified (ie 1 in 20 year flood immunity).	1795
152	The Green/C and Red/D options are planning to run through low lying wetlands.	The comments have been noted.	426, 608
153	The Green/C and Red/D options will impact on flood issues in Gulmarrad / Townsend / James Creek. This will have huge consequences on changing the direction and level of flood water. An increase in localised flooding would impact on our lifestyle, i.e. our ability to get to work etc. The Green/C and Red/D options will result in destruction of valuable farmland. The Red/D option goes across the waterflow from the river to Lake Wooloweyah and will result in increased flood levels and prolonged inundation.	The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). Typical design limits for changes to these properties are 50mm increase in flood height for a given storm event and 5% increase in the flood duration. At this stage, the specific limits of change have not been finalised.	1142, 2499
154	Bostock water holes feed the Chaffin Creek & Coldstream. In floods, the water rises 1-2m in height.	The comments on the 2001 flood have been noted and passed to the project team's hydrologists. This information is consistent with modelling for the project to date.	1037
155	Between 1857 and 2001, there have been two or more floods a year for 16 of those years and many more in between.	The comments have been noted.	289

Issue No.	Comments on flooding	Response	Stakeholder ID
156	It concerns me greatly that the proposed bypass will inadvertently dam up the floodplain, causing the levee walls at Grafton and Maclean to be easily topped. If this scenario was to eventuate, property as well as lives would be lost due to the flood waters breaching the levee walls and creating a rush of flood water, with no place to escape. This could create a major disaster for these towns and surrounds. I would like to know if SKM have considered this scenario when proposing to build this new bypass? Would SKM need to have this sure probability on their shoulders? Now you have been made aware of such potential disaster, you could be held liable if it did indeed take place. Has SKM spoken to people who have lived in flood prone land all their lives?	The design of the Orange/A option (if selected as the preferred route) would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). Typical design limits for changes to these properties are 50mm increase in flood height for a given storm event and 5% increase in the flood duration. At this stage, the specific limits of change have not been finalised. The design of the preferred route aims to result in flooding heights to levels similar to the existing, and no “dam” will be created. In determining the options presented to the community, the issue of topping the levee walls has been considered. The project team has spoken to a number of property owners who live across the study area and discussed the flooding issues. This has included both individual property owners and the holding of two focus group meetings to discuss flooding specifically.	1087
157	I was born the night the February flood of 1954 peaked and by the time I was 5 years old, nine floods had come into Grafton and by 14 years old there had been fifteen floods into Grafton. The Grafton Levee has stopped 14 floods from coming in since it was built. The last of the 2 floods in 2001 nearly came in and with any extra water that option A will cause will be a terrible disaster for the Clarence Valley. Eight floods occurred in eight years and because the Levee was up people just don’t remember how frequent they were. With only six floods having occurred since 1980 and two of them being in the one year (2001) people think that its rare. Floods were frequent – 30 in 33 years.	The comments have been noted and passed to the hydrologists on the project team. Refer to response to issue number 128.	289
158	Where proposed routes C/D pass through the Franklins Road area there is considerable local flooding concerns. It would require large landfill and or an expensive overpass to clear the regular high level of local flooding that occurs.	The comments have been noted. It is understood that many areas away from the floodplain have substantial flooding issues that need to be considered as part of the design. This will require some sections of road to be constructed on embankments or on structures.	247, 275, 402, 608, 1142, 1535, 2096, 2106, 2207, 2276, 2320, 2391, 2406, 2417, 2418, 2420, 2430, 2231, 2440, 2463, 2486, 2505, 2506, 2507

Issue No.	Comments on flooding	Response	Stakeholder ID
159	Local people are the only ones who know how fast and strong the local creek can run. It does not even show up on your topographical map supplied to us! Therefore would not have been taken into account by your preliminary investigations.	The comments have been noted and passed to the hydrologists on the project team. It is understood that many areas away from the floodplain have substantial flooding issues that need to be considered as part of the design. A considerable amount of localised flooding information has been obtained to date and once a preferred route is selected, more detailed investigations would be undertaken.	1707
160	In 1996 RTA proposed a highway to bypass Ulmarra, to this date they couldn't fix flood or fill issues.	The construction of the Ulmarra Bypass has been deferred due to the proposal to upgrade this entire section of highway rather than due to flooding or fill concerns. It is acknowledged that the flooding risks associated with the Orange/A option and in particular,the Coldstream Basin, are much grerater than other options. Similarly, the Orange/A option would need a significant volume of fill to be imported to enable the construction of the embankments.	1885
161	In the Clarence Valley, floodwaters usually drain within 1-2 days. This means that currently at worst water may lie on the road for 1-2 days. However this is rare as most of the existing road is already elevated compared to the flood plain. Why is it not possible to upgrade the low points on the existing corridor, where water sits on the road, to improve safety and to stop the road being cut off in floods? This would greatly improve safety, and minimise immediately the effects of flooding on the highway.	The upgrading of the Pacific Highway to dual carriageway is needed for a number of reasons including safety, transport efficiency and consistency of conditions for the whole highway. However, upgrading the existing highway would not achieve these long term goals. Upgrading the existing corridor to the proposed standards requires more than changing the levels at the existing low points. Additional traffic lanes and the horizontal alignment are just two of many other considerations.	362
162	The Route Options Development Report argues that it is unlikely for the Clarence and local river systems to peak at the same time, or for the Clarence to peak during a king tide (pp.46-47). What happens if these events coincide? Has anyone considered the safety implications? It is essential that the road be built so it can cope with these worst-case scenarios.	The selection of the level of flood immunity needs to consider the cost of providing a higher level of immunity (higher road level) against the benefits that are provided by this. At this stage, the level agreed is the 1 in 20 year level as a minimum. It should be noted that the level of the existing highway is generally lower than the nominated immunity levels.	262, 362
163	In times of flood, cattle have to be moved from the lower part of the farm to higher levels. There is no time to get in trucks.	The comments in relation to access to flood free land and flood refuges have been reinforced by a number of other property owners and have been noted by the project team.	289, 1795

Issue No.	Comments on flooding	Response	Stakeholder ID
164	A 35.5 km levee wall is definitely not on, given that the findings of draft studies not yet released to the public indicate significant increases to flood heights due to minor levees and part levees compared to this proposal.	Refer to response to issue number 128. At this stage the studies undertaken as part of this project do not indicate significant increases in the flood heights, although further work is required for the preferred route as part of the next stage of work.	2096
165	James Creek has the only flood free land for development. Any type of construction on the flood plain will increase flood levels.	It is understood that the James Creek / Gulmarrad area is generally flood free land. Should either of the Green/C or Red/D options be selected as the preferred route, the design would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities).	604, 1632, 2427
166	Localised flooding is always an issue, if roads are built up, local farms will actually flood.	Refer to response to issue number 128.	1989
167	It makes sense to use areas not affected by flooding. Reducing future maintenance costs and inconvenience. Also construction costs will be dramatically reduced.	The comments have been noted. The use of land currently not subject to flooding must be balanced with other considerations (environmental, social, etc) in the selection of the preferred route.	1260
168	My family and I have been here for 16 years on this flood free bypass to the coast, my property fronts onto Chaffin Creek which becomes severely flooded after constant and heavy rain.	The comments have been noted and passed on to the hydrologists on the project team. Refer to response to issue number 128. It is acknowledged that the areas outside the main floodplain area are different to the floodplain itself, with water levels rising more rapidly and higher flow velocities. The design of the preferred route aims to maintain flooding heights at levels similar to the existing.	954
169	The Green/C option would have cross 5km floodplain compared to 38km for the Orange/A option. The Green/C option would have a devastating effect on floodplain and Grafton if sufficient drainage was not supplied.	Refer to response to issue number 128.	621

Issue No.	Comments on flooding	Response	Stakeholder ID
170	If the road was to sit on concrete piles and precast concrete sections that may work but it may be very expensive. Pipes thorough the earth wall would help but the flow rate in and out of the swamps would still be affected and flood levels would still probably be higher downstream. As a matter of interest all the water flowing down the river is compressed into a width of only one kilometre here at Maclean. To make any more water come through here in a flood one would think it would raise the level and an earth wall between Ulmarra and Maclean certainly sounds like it would.	The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). The cost of various bridges and culverts through the floodplains has been included in the cost estimates that have been prepared and is one contributor to the cost for Orange/A option being higher than the others. The comments on the flood width around Maclean have been noted and passed on to the hydrologists on the project team.	2169
171	Our objections to Orange Option A are as follows:- ■ Affect on flooding is only modelled at this stage. It is too late when it is a disaster for the areas east of the proposal. Climate change also needs to be considered for this option when looking at models for hydrological affects	The sophistication of computer modelling has increased over the years and is at a level today where modelling behaviour can be predictable with a high level of accuracy. The design of the preferred route aims to maintain flooding heights at levels similar to the existing. It is acknowledged that the risk of adversely effecting flood behaviour at Grafton, Maclean and other leveed urban areas is higher for the Orange/A option than to the other options. The comments on climate change have been noted and passed on to the hydrologists on the project team.	971, 2491
172	The Green/C and Red/D options would have minimal effect as both options cross through high ground / ridge country. Further south flooding could become more of a problem.	It is understood that many areas away from the floodplain have significant flooding issues that need to be considered as part of the design. The design of an eastern preferred route (Green/C or Red/D) would need to provide sufficient bridges and culverts to minimise the changes to existing flow patterns (height and velocities).	2246
173	The Red/D option appears to be the most economical one which would have the least impact on the floodplain and flood heights. It avoids the floodplains, which would cause problems with water tables, stagnation, mosquitos etc.	It is noted that the Green/C Option has the shortest crossing of the Clarence River floodplain.	1297, 2373

Issue No.	Comments on flooding	Response	Stakeholder ID
174	Much hysteria has been raised in the community with respect to the flooding impacts of the Orange/A option. Roads have been successfully constructed in flood-prone areas all over the world so I do not believe such hysteria is warranted. I also believe it is very important to maintain clean, healthy, unpolluted areas like James Creek, Gulmarrad and Taloumbi which are flood-free land banks. The Lower Clarence area is restricted in where it can grow as much of the surrounding area is flood-prone and not suitable for development. For the future prosperity of the area these communities must be left unblemished by a motorway.	It is noted that the risk of adversely effecting flood behaviour at Grafton and, Maclean is higher for the Orange/A option than to the other options. The comments are noted. The preferred route will be the one that, 'on balance', meets the project objectives. The project objectives includes a range of aspects encompassing social, environmental, functional (engineering) and economics.	163
175	Subterranean hydrological water flows on floodplain would be affected by, for example, the runoff from the road which would amount to over 10 times the natural rainfall? The Purple/B, Green/C and Red/D options will also affect the flow of floodwaters. Their effects on normal non-flood hydrological flows are less obvious and more ecologically important.	In looking at the increase in the impervious area creating by the construction of a highway against the size of the overall catchments, the increase in runoff is negligible and it not expected to impact on groundwater flows. The consideration of groundwater flows in the design would generally relate to issues such as cut depths and the creation of potential barriers to the flows through piling or other structures.	268
176	The last flood – in 2000 – put the Pacific Highway and local roads going in the same direction, under mud or water for from 7 to 10 days. This meant that people, transport and goods were held up for the whole of this time. This is unacceptable in this economic climate. Another factor is that local people have to be able to attend specialists and major hospitals when required, as these are not available in the Valley.	The proposal under any route option would improve the flood immunity of the highway to the 1 in 20 year leval as a minimum.	227
177	While the options have been placed on high land, these areas have a lot of water running through them which could cause a massive problem were it to back up for the farmers and landowners of the properties.	It is understood that many areas away from the floodplain have substantial flooding issues that need to be considered as part of the design. The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flow patterns (height and velocities).	372
178	The effect of 1 in 20 year floods on the Pacific Highway and the proposed motorway will no doubt pose some problems. As floods are a natural occurrence some inconvenience will always occur from floods.	The comments have been noted.	1855
179	The levee needs to be on high ground, out of flood. There is not a great deal of sense putting a levee down a flood way. i.e through Pillar Valley when you can come in the Eight Mile north of Pillar Valley & plan out the Red/D option & stay on high ground all the way.	It is understood that many areas away from the floodplain have significant flooding issues that need to be considered as part of the design. The design of the preferred route aims to maintain flooding heights at levels similar to the existing.	1956

Issue No.	Comments on flooding	Response	Stakeholder ID
180	Have a look at some aerial photos of a flood here. From Grafton to the coast it is a floodplain.	The extent of the Clarence Floodplain has been considered in the development of the options. It is understood that many areas away from the floodplain have significant flooding issues that need to be considered as part of the design. The design of the preferred route aims to maintain flooding heights at levels similar to the existing.	402
181	The placement of the motorway will affect the way in which localised floodwaters will affect my property. These localised flooding events happen on an annual basis and cause flooding at both ends of Wants Lane for periods of 1-2 days. The addition of the motorway has the potential to channel more floodwaters onto my property, further affecting my access to and from my property. The original map in the report does not show the actual flood levels that extend south over Wants Lane. Previous flood levels have been up to 4-5 metres above the surface of the road and would have a serious impact on the design and construction of the section of motorway through this area and over the Coldstream River.	The comments have been noted and passed on to the hydrologists on the project team. The extent and depth of the flooding in the Clarence Valley is understood by the project team, which includes the company that undertook the Lower Clarence Flood Study for Clarence Valley Council. The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). Further investigations and consultation with landholders would take place as part of the concept design process.	2379
182	In 1967 peak flows from Swan Creek, and the Clarence and Coldstream Rivers did coincide, contributing to significant flooding.	The comments have been noted.	262

Issue No.	Comments on flooding	Response	Stakeholder ID
183	For a substantial distance upstream of where the Purple/B option crosses Somervale Road, Champions Creek constitutes a third order watercourse under the Strahler system of classification and therefore meets the definition of "a river" pursuant to the *Water Act 1912* and the *River and Foreshores Improvement Act*, which provide that, as such, the impediment of the natural passage of water and aquatic fauna of Champions Creek is prohibited. It should be pointed out that in a significant rain event (not a flood), for example, approximately 120mm overnight on 30th June 2005, the Somervale Road bridge over Champions Creek was over-topped causing flooding of the adjacent roadway; further West adjacent to the Purple/B option; again close to the junction with the Tucabia – Tyndale Road, and further across this road for a distance of over a kilometre, before final discharge into the Coldstream River. This is a common occurrence in any heavy rain event of approximately 100mm or more in a day. In a flood, back up water from the Clarence and Coldstream Rivers would cause the Purple/B option to be under water to at least fence height for a distance of over 500 metres north of Somervale Road where it straddles property boundaries. Therefore, the assessment process for the Purple/B option to be routed in this location is seriously questionable. Apart from the obvious damage to the existing environment and ecology, any attempted solution to retain this route involving embankment would cause major flooding upstream of a Champions Creek crossing. The necessity to bridge such a route for in excess of a kilometre, with its attendant cost, visual, pollution and environmental impacts must put adoption of this option out of the question.	The information on the local flooding has been noted and passed to the hydrologists on the project team. The design of the crossings of such waterways will be such that sufficient openings are provided to allow for the passage of large storm events with minimal variation of the existing hydologic regimes. There are no statutory processes under the *Water Act, 1912* or the *Rivers and Foreshores Improvement Act, 1948* that prohibit the impediment of natural passage of aquatic fauna. However, the RTA designs river and creek crossings to avoid the impediment of fish passage in accordance with guidelines prepared by the Department of Primary Industries (NSW Fisheries). Suitable crossings for fish passage would be incorporated in the design of bridges and culverts.	174
184	We are also concerned about the effect the upgrade is likely to have on drainage lines (with the easternmost routes there will be an impact on the upper catchments of many streams).	Refer to response to issue number 177.	299

Issue No.	Comments on flooding	Response	Stakeholder ID
185	We live and own a dairy farm in the Great Marlow – Southgate area of the flood plain. Any embankment constructed through the plain will surely push more water to the northern side of the river. We have already experienced a 200 mm increase in flood height as a result of minor alterations to Ulmarra. It is also worth noting that the Southgate / Albury Creek basin eventually floods the West lawn area of Grafton via Richmond Rd (Summerland Way). The 2001 flood was within 50mm of crossing this road, which incidentally is Grafton's evacuation route to high ground in the event of the levee overtopping. We consider the estimate in your report of a variation as grossly understated going by our past experience.	Refer to response to issue number 128. Based on previous experience in road construction projects, the nominated limits are achievable though good design practices.	2211
186	We will still have local flooding even if there is a flood free freeway. The Orange/A option would flood as it follows the Clarence River and is low. It would have a lot of building up.	Refer to response to issue number 128. The design of the alignment will be such as to allow one carriageway to be above the 1 in 20 year flood event.	2088
187	Our house already goes through the flood up to your waist – if you build the highway here it will make the water rise higher and damage more valuable property, livestock. It is already hard enough to get flood relief from the Government.	Refer to response to issue number 128.	2419
188	Where flood embankments are required, assuming the top width is 32 metres (page 17), what will the side buffers be for safe run off?	The final slope of the batters has not been decided at this time. Typically they are provided at 1V:4H (Vertical:Horizontal), although they may be between 1V:2H or 1V:6H. This would mean a batter of between 4 and 12 metres wide for an embankment of 2 metres height.	294
189	As my property is a major arterial for the catchment area in the southern section of the study area, it results in high levels of floodwaters through my property.	Refer to response to issue number 128.	247
190	Will the new expressway increase the likelihood of flooding of my property?	Refer to response to issue number 128.	474
191	The build-up of the motorway would increase the height of floods for Grafton and Southgate area.	Refer to response to issue number 128. At this stage, the specific limits of change have not been finalised and the limits may be reduced below those above for affects on larger communities such as Grafton and Maclean.	1729

Issue No.	Comments on flooding	Response	Stakeholder ID
192	The Orange/A and Purple/B options will potentially affect the floodplains of the Clarence River especially in flood time if the RTA intends to build the new highway above flood level.	The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). The options include various bridges and culverts to allow water to flow into and out of the floodplain and hence maintain the existing storage characteristics. By minimising the impact on the flows into and out of the main floodplain storage areas (eg the Coldstream Basin), the impact on levees around Grafton and Maclean would be minimised. It is acknowledged that the risk of adversely effecting flood behaviour at Grafton, Maclean and other leveed urban areas is higher for the Orange/A option than to the other options.	150, 1611
193	Referring to Figure 5-7: Drainage and flood levels (p. 45 of the report) I wish to bring to your attention the fact that areas of significant flooding are not indicated in the Pillar Valley area. Significant areas that are in the 1 in 20 year flood level along the Chaffin Creek region in close proximity and relationship with Firth Heinz Road have not been indicated. Why, when three options (Purple/B, Green/C and Red/D) all of which directly cross Firth Heinz Road and Chaffin Creek is this not indicated? If there is no true indication of recorded flooding in this area, again, how can this study allow informed, accurate debate within the community?	It is acknowledged that the areas outside the floodplain are still subjected to flooding and this must be considered in the design of the preferred route. These areas generally are subject to rapid flowing, fast rising waters in times of flood. Although Chaffin Creek was not shown on the specific figure referred to, it has been considered in the evaluation of the options to date and allowances made as required for structures at that location.	380
194	In flood time, Shark Creek carries the depth of 15-17 feet of water over the sugar can land and grazing lands. It has a very large catchment area. To build a roadway above the 1 in 100 year flood level would be like putting in a dam wall. Harwood and Chatsworth Islands have no options to the road widening, so should be compensated highly to allow the highway to pass through their farms and houses. A great area of sugar cane land will be lost to the sugar industry .	The preliminary assessments that have been undertaken to date indicate that a 700 metre bridge would be required at Shark Creek to provide sufficent flow area. It Is proposed that the upgrade be designed to provide a flood free passage for the 1 in 20 year event as a minimum, however, it is likely that the structures will be designed for the 1 in 100 year flows. The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities). Typical design limits for changes to these properties are 50mm increase in flood height for a given storm event and 5% increase in the flood duration. At this stage, the specific limits of change have not been finalised. The options include various bridges and culverts to allow water to flow into and out of the floodplain and hence maintain the existing storage characteristics.	606

Issue No.	Comments on flooding	Response	Stakeholder ID
195	If the highway should be built on the route close to the coast flooding would have less of an impact.	The comments are noted.	622
196	Of further concern is the lack of specific information / models which would show the effects that kilometres of raised highway through flood country would have on existing flood water heights already experienced by land owners. The RTA has advised that modelling to extract projected flood heights had not been done, and wouldn't be done until the preferred option had been announced. This is unacceptable and is an attempt to deliberately withhold important information from the public debate arena and demonstrated the RTA has its own agenda which I believe will compromise public safety. The last major flood to occur in the valley saw floodwaters lapping the top of Grafton City's levee wall system. Knowing the vast Clarence catchment area, and the volume of water during flood, any flood water access provided beneath the new highway would have only minimal impact if any at all, in relieving the extra height in flooding the raised sections of highway would cause. We have grave concerns for the safety of our home and property that is located on the floodplain, and for the safety of the residents of Grafton should flood waters breach its levee system as a result of the proposed location of this new highway.	Some initial modelling has been undertaken as part of the development of the options to determine the likely requirements for bridges and culverts that each option would need in order to pass the flood waters. Based on the work that has been undertaken, an understanding of the flood behaviour and risks has been developed such that a comparison of the routes can be undertaken. During the concept design of the preferred route, flood modelling will be undertaken to confirm the bridge and culvert sizes required to limit the flooding impacts (levels, time of innudation and flow paths) to an acceptable level. It is acknowledged that the flooding risks associated with the Orange/A option and in particular, the Coldstream Basin, are much grerater than other options.	887
197	The Orange/A option will take massive amounts of floodplain land (which is highest quality farming land) and would impact heavily on the agricultural industry in the Clarence Valley with the other 3 options taking less flood plain and lower quality farming land.	The comments are noted. While flooding and the integrity of the floodplain is an important consideration, the preferred route will be the one that, 'on balance', meets the project objectives The project objectives includes a range of aspects encompassing social, environmental, functional (engineering) and economics.	902
198	The eastward loop around the Pillar Valley area has obviously not taken into account that it is superimposed on the Pillar Valley Creek and follows that creek's floodplain which floods frequently after heavy rain and not on the higher ground to the west of the Coldstream River.	The comments are noted. While the corridor follows the loop in Pillar Valley Creek, it does allow for construction of the upgrade on the eastern side of the creek. In determining the corridor location, the design requirements to address flooding were considered against other criteria such as the direct impacts on houses.	912

Issue No.	Comments on flooding	Response	Stakeholder ID
199	The routes for both the Green/C and Red/D options should be west of the Coldstream River where the higher ground is located and settlement is sparse. However, the Green/C and Red/D options still traverse environmentally sensitive areas in flood prone country.	Locating the Green/C and Red/D options west of the Coldstream River would result in them crossing some very low-lying sections of the floodplain. While ecology is an important consideration, the preferred route will be the one that, 'on balance', meets the project objectives The project objectives includes a range of aspects encompassing social, environmental, functional (engineering) and economics.	912
200	During the 2001 flood, flood waters near the Grafton Police Station were only centimetres away from the top of the levee wall. The Orange/A option will cause water displacement during floods on the Clarence River due to large volumes of highway fill and would severely compromise existing flood levee walls. To stop major flooding, wouldn't higher terrain be more practical?	The comments have been noted and passed on to the hydrologists on the project team. It is acknowledged that the risk of adverse impacts from flooding is higher on the Orange/A Option than those with shorter floodplain crossings. It is understood that many areas away from the floodplain have substantial flooding issues that need to be considered as part of the design. A considerable amount of localised flooding information has been obtained to date and once a preferred route is selected, more detailed investigations would be undertaken. The volume of the floodplain that would be reduced for the construction of the road embankment would be negligible compared to the overall storage volume of the basin. Refer to response to issue number 128. The option allows for a significant number of bridges and culverts to allow water to flow into and out of the floodplain and hence maintain the existing storage capacities. Refer also to response for issue number 2.	920
201	The Purple/B option will create a levee bank which would change the whole of the Clarence floodplain, not just the Tyndale - Shark Creek area. The run off from Bondi Hill, Roundmountain and surrounding areas all run into the Sandy Creek system which in times of heavy rain and flood fans out and inundates all the land below and east of Bondi Hill. I have seen 20 feet of water on some of the lower parts of these properties and this is where the Purple/B option is going. In times of flood, Sandy Creek reverts to its original course. The highway would become a huge levee wall changing the Clarence floodplain to the detriment of towns, villages and agricultural holdings.	The comments have been noted and passed on to the hydrologists on the project team. Refer to response to issue number 128.	1611

Issue No.	Comments on flooding	Response	Stakeholder ID
202	The Orange/A option is not appropriate as it creates a bottle neck of water during times of flooding which will then impact on a great number of communities.	Refer to response to issue number 128. It is understood that many areas away from the floodplain have substantial flooding issues that need to be considered as part of the design. A considerable amount of localised flooding information has been obtained to date and once a preferred route is selected, more detailed investigations would be undertaken.	1956
203	Where does all the water go to when it is re directed?	The design of the preferred route would need to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities).	2253
204	Local flooding will also be extensive, because of the nature of the construction involved. The run-off from this could devastate the whole area.	Refer to response to issue number 128.	2255
205	SKM have not conducted a precise study on flooding issues.	The flood modelling undertaken to date has been built up on work originally undertaken as part of the Lower Clarence River Flood Study. Work on the flood model for this river has been ongoing for a number of years. The purpose of the initial modelling undertaken as part of the development of the options was to to determine the likely requirements for bridges and culverts that each option would need in order to pass the flood waters. Detailed modelling to determine specific requirements and projected flood levels will be undertaken for the next phase of the project. Based on the work that has been undertaken, an understanding of the risks associated with flooding has been developed such that a comparison of the routes can be undertaken.	2307
206	Even though the eastern route options are not in the floodplain they do traverse low lying land which is prone to both fog and localised flooding from the hills.	It is acknowledged that all options are impacted by flooding and that areas outside the floodplain have flooding issues such as rapid flow rates and rapid increases in water level. It is understood that many areas away from the floodplain have substantial flooding issues that need to be considered as part of the design. A considerable amount of localised flooding information has been obtained to date and once a preferred route is selected, more detailed investigations would be undertaken.	275, 2106, 2207

Issue No.	Comments on flooding	Response	Stakeholder ID
207	The Options report has ignored the hydrology issues relating to the Clarence River and flooding in the Clarence Valley. Fertile floodplains come from flood waters, and the farmers rely on the floods to replenish their land. The Options report does not identify, assess, or recognise either the value of the floodplains to the farming communities, or the impact on the river communities of any change in the water flow patterns. Towns and communities have constructed levee banks to protect from the ingress of flood waters. A motorway built on levee walls may cause the water to be with held in some areas causing upstream inundation, or provide a dam effect to cause inundation to last longer.	Refer to response to issue number 128. It is acknowledged that changes to the hydrologic regime could potentially impact on farming activities, and that floodwaters are important to farming. The design of the preferred route aims to maintain flooding heights at levels similar to the existing levels. The options allow for a significant number of bridges and culverts to allow water to flow into and out of the floodplain and hence maintain the existing storage capacities.	266
208	The impact of the road structure on natural environmental flows of Shark Creek is also of concern with respect to changed watercourse conditions and resulting erosion of the creek, which is part of the intertidal zone.	The comments are noted. Further work will be undertaken at the concept design stage for the preferred route, to minimise disruption of existing creeks and to reduce the possibilities of future erosion.	1998
209	Expressed concern about flooding impacts: ■ During flood a major part of the land is covered by water that stays around for weeks. What impact will the highway have on drainage patterns on the property? ■ Adjusting drainage may require farms to be reshaped and this issue needs to be incorporated into any compensation agreements with landowners. ■ The road will act as a levee bank and extend the flood risk further. ■ The highway will cause Coldstream Basin to flood and obliterate some farms.	Refer to response to issue number 128. Drainage issues would be discussed with landholders as required, as part of any compensation package. As part of the environmental investigations that are undertaken prior to construction, the potential impacts are identified as well as measures to minimise these impacts.	150, 316, 483, 509, 1108, 1159, 1162, 2175

Issue No.	Comments on flooding	Response	Stakeholder ID
210	As a long term resident in the Harwood area I have observed a gradual silting of the Clarence River necessitating the construction of levee banks along the Maclean and Grafton townships. In the last decade we have suffered two major floods which have virtually submerged the area between Harwood and the Iluka turnoff. The construction of the proposed bridge and corresponding road support levees (which would run perpendicular to the river flow) would exacerbate the situation in flood times. By restricting the seaward water flow a damming effect would raise water levels upstream having a devastating consequence on the Harwood and Maclean communities. Villages in the river's delta further down stream would experience turbulent flows due to venturing of floodwater under the proposed bridge. The discussed scenario is based on my experiences over the last decade, not under the conditions of a 100 year flood. Nevertheless under flood conditions the highway would be blocked at the lowest points and unusable if the route is to be so close to the coast.	Refer to response to issue number 207.	1910

4.3.7 Harwood Bridge

Issue No.	Comments on Harwood Bridge	Response	Stakeholder ID
211	Will a new bridge be built beside the existing Harwood Bridge?	The new bridge would be constructed alongside the existing bridge. The preferred route is on the eastern side, directly adjacent to the existing bridge. Although the ultimate upgrade would be to Class M, requiring two new bridges, at this stage the decision has not been made as to whether under a class M scenario, the two bridges would be required. This would be at a time in the future when warranted by traffic and other factors.	2119
212	A six lane crossing at Harwood Bridge would be forward thinking.	Refer to response to issue number 211.	1956
213	The enormity of the bridge itself is huge with a span of up to 37m above the river.	Discussions have been ongoing between RTA, the NSW Maritime Authority and river users as to the required clearance of any new bridge(s). Options currently being considered are a fixed bridge of 30 metres clearance or an opening bridge with a deck height the same as the existing Harwood Bridge.	271, 2253, 2566

Issue No.	Comments on Harwood Bridge	Response	Stakeholder ID
214	Although the exact location of the new bridge at Harwood is yet to be established, its construction is depicted as being 40 metres above the river with a corresponding footprint of 200 metres wide.	Refer to response to issue number 213. The new bridge would have a deck width of 11.5 metres and an overall width of 13 to 14 metres.	1910
215	The Harwood Bridge must be duplicated ASAP as it is a link that can close the Pacific Highway.	The construction of a second bridge at Harwood is dependent on funding provided by the State and Federal governments. At this stage funding has not been allocated.	1956
216	The Orange/A option keeps the freeway in a straight line to the Harwood Bridge. A new bridge should be built on the western side of current bridge.	Options to the east and to the west of the existing bridge were considered following community comment during the route options display. A bridge west of Harwood has not been pursued due to difficulties in staging, acquisition of more houses than the other options and potential increased impacts to cane land.	1975
217	There are no proposed crossing extension / plans for the Harwood Bridge / Clarence River crossing. Maybe a tunnel could be an option.	As part of the project, two additional bridges will be required at Harwood. One initially, with a second required when warranted by traffic volumes. Consideration is not being given to the construction of a tunnel.	2338
218	I have been informed that an option for a new bridge was downriver (approx 200m) of the Harwood Sugar Mill. ■ The position of the bridge may seriously affect the safe operations of the port. The Port of Yamba extends from a line drawn between the north and south breakwaters at the river seaward entrance to the eastern side of Harwood Bridge. ■ The area immediately adjacent to the Harwood Sugar Mill is a turning basin for ships berthing at the Harwood slipway. ■ The gap in the bridge needs to be wide enough to safely accommodate the beam of a vessel ■ The height of the bridge opening would need to accommodate the air draft of a vessel (height of vessel above waterline). ■ Without sufficient room (at least 500m) to line up this would be a high risk operation and therefore unacceptable.	The comments have been noted. Discussions about the location of the bridge, as well as the clearances are continuing with NSW Maritime Authority and river users, and other stakeholders.	2520

4.3.8 Cost

Issue No.	Comments on cost	Response	Stakeholder ID
219	The Orange/A option is up to double the cost of alternative options. The engineering complexities (eg number and size of culverts and bridges, availability of materials, local access, etc) could result in excessive blow-outs owing to the unknown nature of this route.	The cost of the Orange/A option currently includes allowances for bridges and culverts, imported fill materials, construction on soft soils, local access and the like. As part of the costing preparations, a contingency is allowed for risk in items such as these.	125, 326, 356, 491, 520, 530, 612, 893, 942, 971, 976, 1139, 1159, 1729, 1958, 2012, 2148, 2230, 2291, 2335, 2380
220	A cheaper option should not be chosen at the expense of the environment, local communities and the people who live there.	Refer to response to issue number 2.	350, 426, 486, 2075, 2106, 2246, 2355
221	The Orange/A option can be staged so 'stages' could be built as funds were available & motorists would see benefits sooner.	One of the benefits of the Orange/A option is that it can be staged.	163
222	I do not believe that the proposed costs for the Green/C and Red/D options are true and accurate.	The costing of the Green/C and Red/D options has been undertaken in accordance with the RTA standard estimating procedures and is a true reflection on the project costings.	1956
223	The Purple/B option uses 19km of existing highway. This saves money and allows for staged construction.	One of the benefits of the Purple/B option is that it provides some opportunity for staging of construction. The use of the existing highway does provide some opportunity for cost savings, however it should be noted that some sections of the existing highway are not suitable for the proposed 110km/h design speed.	1956
224	The construction costs of the Green/C and Red/D options would be exorbitant due to wetlands, floodplains, etc.	The cost of the Green/C and Red/D options currently includes allowances for bridges and culverts, imported fill materials, construction on soft soils, local access and the like associated with the wetlands, creeks and floodplains.	2322
225	It must be cheaper to buy agricultural land than destroy a village.	Refer to response to issue number 2. Agricultural land is generally less expensive than residential land. However, consideration must be given to a range of issues.	2327
226	Are saving lives more important than money? I hope not.	Refer to response to issue number 2. One of the objectives of the Pacific Highway Upgrade Program is safety and thus safety considerations will be a major input into the evaluation of the options.	2307

Issue No.	Comments on cost	Response	Stakeholder ID
227	I would imagine that the Orange/A and Purple/B options would be the cheapest as they could use sections of the existing highway. The Red/D option would be the dearest as it would be built on an alluvial floodplain with soft soils.	Although the Orange/A and Purple/B options have sections along the existing highway, they have the longer lengths of floodplain crossings than the Green/C and Red/D Options. As such, they are the more expensive options, as the allowances for soft soils and flooding are more significant items.	2312
228	I need to question why only the Green/C option has been costed and you expect informed choices to be made.	Each of the options has been costed and the information provided in the Route Options Development Report (RTA, 2005) and the subsequent Community Update – Value Management Workshop outcomes (May 2006): ■ Orange/A - $1300 to $1400 million ■ Purple/B - $950 to $1050 million ■ Green/C - $700 to $800 million ■ Red/D - $700 to $800 million	2333, 2408 Are these costs the latest
229	The fact that Red/D option appears to be the least costly route is a benefit to all, as the road will be built using tax payers money.	Refer to response to issue number 2.	2373
230	Are the cost estimates in 2004 dollars (p.154) or 2005 dollars (pp.x-xiv, 107, 120, 130, 139)?	The estimates are provided in 2005 dollars.	262
231	Costs should be done on a per vehicle factor rather than on the basis on straight construction costs. This results in the Orange/A option being the best value for money / cheapest.	Funding of the project is based on the total construction cost rather than the cost per vehicle.	163, 174, 247, 262, 271, 362, 604, 1953, 1978, 2203, 2277, 2310, 2440
232	The report identifies “possible” interchanges east of Four Mile Lane and north of Swan Creek. It does not explain whether these are included in the cost estimates for the Orange/A. option. The same questions also apply to the possible “partial interchange” south of Maclean, whatever a “partial interchange” might mean.	The cost estimates prepared for the route options include three interchanges on the Orange/A option, two on each of the Purple/B, Green/C and Red/D options and one for the section between Harwood and Iluka Road. A partial interchange is one that does not include four sets of ramps. Generally it provides for access in one direction only (eg northbound on ramp and a southbound offramp). As part of the preferred route a full interchange is provided at Maclean.	262
233	Cost isn't a factor.	Refer to response to issue number 2.	402, 417
234	It is obviously best to follow the existing highway to keep cost to a minimum.	Although the Orange/A and Purple/B options have sections along the existing highway, they have the longer lengths of floodplain crossings than the Green/C and Red/D Options. As such, they are the more expensive options, as the allowances for soft soils and flooding are more significant items.	950

Issue No.	Comments on cost	Response	Stakeholder ID
235	Cost of construction on especially the Red/D option would be greater, for this section of the road needs to be built up at least 4 metres across the low lying floodplains.	Refer to response to issue number 2.	2238
236	I believe that the issue of cost is more complicated than merely allocating a cost to each route. There are other considerations such as maintaining the original highway.	Refer to response to issue number 2.	342
237	The Orange/A option would prove not only costly to build due to geotechnical surveys and the importation of fill, but it would be the most costly to maintain. As a result, it fails to minimise the whole of life costs of the project.	The maintenance costs for the Orange/A option would be influenced by the high length of the floodplain crossing through potential settlement of embankments and increased number of structures and potential damage by floodwaters.	2279
238	The Orange/A option is too expensive and does not reduce travel times / costs to transport industry.	Refer to response to issue number 2. it is acknowledged that the Orange/A option is the most expensive and has the least travel time saving. It is noted that although it generally follows the existing highway, it would produce a travel time saving of around 8 minutes over the current 45 minutes journey. In addition, the removal of intersections, different speed zones and the control of grades, would result in additional cost saving to transport.	149, 863, 942, 1139, 1159, 2114, 2433
239	The construction cost of the Red/D option should factor in the maintenance costs for the existing Pacific Highway.	The maintenance costs have not been included as part of the construction costs. However, as part of the evaluation of the options to date, an economic analysis has been undertaken, which considers items such as the ongoing maintenance costs for the existing Pacific Highway.	2131
240	A British government funded study claims that it takes 10,000 cars to do the damage to a road surface caused by one five-axle truck. If this is an approximate fact, then shouldn't construction costs be based against the number of heavy goods vehicles which would use the route and not against a cost per private motor vehicle?	It is true that trucks do significantly more damage to pavements than cars and as such pavement design are based on the numbers of heavy vehicles rather than the number of cars. In developing the overall costs for a project and looking at the benefits, cars are still considered as they receive benefits for the project as well as the heavy vehicles.	1978
241	The construction costs on the Orange/A option will be very high with 175 houses (homes) to be affected.	it is acknowledged that the Orange/A option would be the most expensive to construct. This is due to allowances for bridges and culverts, imported fill material, construction on soft soils etc, rather than property costs.	2282
242	Construction cost is important because the cost will affect how soon the route can be completed and road safety will not be improved until the upgrade is complete.	The overall construction cost of the project is an important consideration in looking at the timing of the works. At this stage no funding has been allocated to the construction of this section of the highway upgrade.	2283

Issue No.	Comments on cost	Response	Stakeholder ID
243	Costs for all of the eastern options should include the cost of upgrading the existing highway because it will continue to carry 70% of traffic.	One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any of the eastern options. An assessment has been completed which indicates that an amount the order of $110 million would be required. This has been included in subsequent estimates.	160, 174, 271, 2178
244	The Red/D option is $200m to $400m less in cost than the Orange/A and Purple/B options. I see no justification in spending $200m more on the Purple/B option when this expenditure can be applied elsewhere on upgrading. Of the options in the $700m to $800m range, the Red/D option has less unfavourable impacts than the Green/C option.	While the cost savings associated with the Green/C or Red/D options could be utilised elsewhere on the Pacific Highway Program, the straight construction cost saving needs to be balanced with other project objectives. The objectives address a range of aspects encompassing social, environmental, functional (engineering) and economics. In this context, the preferred route will be the one that, 'on balance', meets the project objectives, and these objectives will be the point of reference during the entire study.	281, 1885
245	I understand that the Pacific Highway needs to be upgraded for safety, but I cannot see the value of spending approximately $700-$1,400 million to bypass Grafton, Ulmarra and Tyndale.	The need for the Pacific Highway Upgrade relates to more than just safety. It includes reduced travel times and reduced freight transport costs. This section of the highway must also be considered in the overall context of the Sydney to Brisbane link and the need to provide a consistent standards between these cities and along the north coast. The costs reflect the length of flood/soft soil conditions in the study area.	2359
246	A new direct route such as the Red/D option will prove cost-effective compared with the Orange/A option, which is a short term result.	Refer to response to issue number 2.	2383
247	Your claim that these options would be the cheapest does not take into account the cost of lost business for businesses on the present highway route	The impacts on business, along with the costs and many other factors are considered in the assessment and evaluation of the routes. The preferred route will be the one that, 'on balance', meets the project objectives.	2178
248	Do the estimates for the Green/C and Red/D options include the cost of interchanges? How are locals supposed to access the new highway without these? How much extra will these cost?	The cost estimates prepared for the route options include three interchanges on the Orange/A option, two on each of the Purple/B, Green/C and Red/D options and one for the section between Harwood and Iluka Road.	2178

Issue No.	Comments on cost	Response	Stakeholder ID
249	As tax payer I object to millions of dollars being spent on placing a motorway in an area where there is little demand for it and which will have negative impacts on our region. Highways should not just be about getting freight or people between Sydney and Brisbane. The Orange/A option provides value for money as it allows an existing asset to be built on further and encompasses the approved Ulmarra bypass route for which the community has already paid for in terms of its investigation and selection.	Refer to response to issue number 2. The need for the Pacific Highway Upgrade relates to a number of objectives for both local and through traffic.	2106
250	Have the costs of wildlife overpasses or underpasses been allowed for with the other options? If so, how many and where? Has the cost of the huge fences required to keep the large kangaroos off a motorway been included for the Purple/B, Green/C and Red/D options?	Allowances of $17 million (Purple/B) or $24 million (Green C and Red/D) have been made in the costings for environmental mitigation measures, including wildlife underpasses and overpasses. At this stage the location and exact measures required for each option have not been detailed. It is also expected that significant lengths of floppy top (fauna) fences will be required at various locations on any of the options.	163, 393

Issue No.	Comments on cost	Response	Stakeholder ID
251	The cost of the Ulmarra Bypass (costed at $22 million dollars by Connell Wagner in 1998) is not shown on the cost estimates for the Purple/B, Green/C or Red/D options. Nor is the $3.75 million (per annum) in maintenance or any other upgrade work, factored into these options on the cost estimates provided. SKM have explained that the existing highway would be an alternative route and depending on which option was selected, all or part of it would be placed under the control of our local Council. The final costs associated with this "handover" would be dependant on negotiations with Council, and these are generally finalised by the project approval stage. This handover we are informed will be up to $60m (includes contingency) on the Green/C and Red/D options, yet this figure is not present on either of the cost estimates. Furthermore, we believe $60 million would be insufficient to undertake the necessary works required to make this a safer road for motorists particularly considering the number of vehicles which would still have to use it and this would be a great financial burden on the Clarence Valley Council. As 90% of traffic currently using the Pacific Highway through this area would be able to benefit from a Motorway constructed along the Orange/A route, the handover figure would be much less. The Ulmarra Bypass project is included in this option and with the alternative route required by much less traffic, the annual maintenance and upgrading bill to Clarence Valley Council would be dramatically less. Again such information is not reflected in the cost estimate for this particular option.	The cost for the Ulmarra Bypass, as an individual project and as described in the EIS prepared by Connell Wagner (1998) was approximately $22 million. For the Wells Crossing to Iluka Road project, the costs of upgrading the highway that would incorporate the section previously addressed by the Ulmarra Bypass has been incorporated in the total estimate for the Orange/A option. One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any option. An allowance in the order of $110 million has been included in subsequent estimates.	163
252	It doesn't matter how much it costs as long as the reason for this motorway solves the existing highway problems.	The comments are noted.	1632, 2427
253	The cost of the Green/C and Red/D options are half the cost of the Orange/A option which could mean the highway could be built sooner!	The overall construction cost of the project is an important consideration in looking at the timing of the works. At this stage no funding has been allocated to the construction of this section of the highway upgrade.	237

Issue No.	Comments on cost	Response	Stakeholder ID
254	There are at least 17 options shown in the report due to the extensive number of interconnections. The costing excludes all of the alternative routes. This approach to project costing shows that either: ■ The RTA and SKM have not considered the total costs for the project ■ The RTA and SKM are not skilled in project costing analysis ■ The RTA and SKM are providing only information which supports their view ■ The RTA and SKM are treating the Options report as nonsense	The costs provided for the individual routes allowed for comparison of the main options being considered. Costings prepared for the individual sections and connections were to the Value Management Workshop to allow participants to consider this in the assessment of the options. In general, the combinations of options that follow the Orange/A option in the north of the study area are a similar cost to the Purple/B option ($950 to $1050 million). The costing for the Green/C or Red/D options using the Purple/B option south of Pillar Valley have a cost around 5% ($35 million) higher than those provided. In the northern sections around James Creek and Gulmarrad, the Green/C Option provides around 3% ($55 million) saving over Red/D.	174, 271, 266
255	Costs would be at lower end of current estimates.	The estimates that have been prepared include contingencies for unknowns that may impact the overall costs. Depending on the construction industry and other factors, it is possible that the costs may increase or decrease.	2149
256	The Orange/A option is unsuitable because it is the most expensive.	Refer to response to issue number 2.	621, 1783, 2150, 2230
257	Of more concern though is the higher cost of the Orange/A option, although work is being done on the road at the present time.	Works on the existing road will need to continue as part of the on going maintenance and safety program. At this stage no funding has been allocated to the construction of this section of the upgrade, so these tasks will need to continue.	2158
258	Has on-going maintenance of embankment quality been costed into the Orange/A option?	The on-going maintenance of the floodplain embankments has not been included in the construction costs, however, this has been considered as part of the economic analysis for the project.	170
259	Remember prices go up with time, not down and it would be refreshing to have a government build with a view to tomorrow instead of yesterday.	The proposed road corridor would allow for the future upgrade of the highway from two to three lanes in each direction without needing to further widen the road corridor.	227
260	The Orange/A option is too costly on flood areas and is the longest route. We strongly object to this proposed highway route.	The comments are noted.	150
261	Does costing of the Orange/A option include purchase and post construction rehabilitation of the quarries and borrow pits?	The costs allow for the importing of fill from other sources. Some of this cost may go to the purchase and rehabilitation of quarries, should that be seen to be more cost effective than utilising materials for existing quarries.	170

Issue No.	Comments on cost	Response	Stakeholder ID
262	The Route Options Report is ambiguous /contradictory as to whether the Orange/A Option has been costed on the basis of a new M Class Motorway alongside the existing Pacific Highway, or an upgrade to Class-A dual carriageway.	The costing of the Orange/A Option is for a Class M standard road to enable a proper comparison to the other options, which are as costed as Class M.	174, 266
263	While the Orange/A route has the least ecological impact it still has a higher risk of flooding from the Clarence River and is therefore not worth the significantly higher cost to build.	Refer to response to issue number 2.	178
264	It is hard to justify spending $800million for the Purple/B, Green/C and Red/D options to transport 30% of the daily usage of the current Pacific Highway. The money would be better spent upgrading the existing highway in its current location with appropriate on/off ramps.	Refer to response to issue number 2. One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any option. An allowance in the order of $110 million has been included in subsequent estimates.	247
265	The massive amounts of concrete structures required to minimise floodwater impact are also a prohibitive environmental cost.	Refer to response to issue number 2.	362
266	Are these options being suggested because the purchase of grazing and forested land may be cheaper than purchasing land for widening the existing highway?	Refer to response to issue number 2. Agricultural land is generally less expensive than residential land. However, consideration must be given to a range of issues.	2540
267	The Orange/A and Purple/B options cost double that of the Green/C and Red/D options.	Refer to response to issue number 2.	149
268	Do the costs include the cost of compensation for land resumed along the routes? As some of the options cross high value land, the compensation costs are likely to be higher in those circumstances. These costs are easily estimated by valuers, just as the construction costs can be estimated by quantity surveyors and engineers.	Land acquisition costs have been included in the estimates. These were prepared on a corridor basis rather, which is appropriate for this stage of the project.	266

4.3.9 Geotechnical considerations

Issue No.	Comments on geotechnical considerations	Response	Stakeholder ID
269	The Orange / Option A shows high levels of acid sulphates, which, on disturbance of the soil, may leach into the waterways. Given the extremely high number of bridge footings necessary on this option acid sulphate soils pose a very real problem	Any works through areas of potential acid sulphate soils will require an appropriate management plan for the treatment of affected soils. Established techniques are used to minimise the disturbance of these soils and to control the removal, treatment and disposal of this material.	299, 356, 491, 530, 893, 971, 1958, 2291, 2380
270	Acid sulphate soils play a major role in coastal floodplain landscapes. The use of drainage structures (wick drains) and clearance of wetland vegetation to construct a 4-6 lane highway will activate massive acid loads in sensitive wetland areas (Yelgun to Chinderah Bypass is still exuding massive acid and toxic metal loads).	The issue of acid sulphate soils needs to be considered in two parts – actual acid sulphate soils and potential acid sulphate soils. Actual acid sulphate soils have already oxidised resulting in a low pH. Potential acid sulphate soils have not yet oxidised but may do if they are excavated or the ground water level is lowered. Where actual acid sulphate soils are encountered, the options available are to use wicks and neutralise the water that is discharged or to use alternative techniques such as piling. Where potential acid sulphate soils are encountered, the construction of wick drains is not generally expected to cause oxidation as the ground water levels are not lowered. There may be some potential for trapped air in the construction of the wick drains to cause acid sulphate soils although this is expected to be very low. Any soils excavated in the construction of the wick drains, will require treatment in order to neutralise the acids.	268
271	The Orange/A and Purple/B options will disturb acid sulphate soils.	Refer to response to issue number 269.	149
272	The incidence of acid sulphate soils within the Orange/A option has the potential to pollute waterways.	Further assessment of acid sulphate soils would be undertaken as part of the preferred route option assessment and prior to construction further sampling and testing would be carried out. An Environmental Management Plan would be prepared which would detail acid sulphate soil management procedures and appropriate mitigations measures.	170, 356, 520, 612, 2335,

Issue No.	Comments on geotechnical considerations	Response	Stakeholder ID
273	If the three sources of flood water (upstream catchment, local and storm tides) coincide, will the high embankments for the Orange/A option be stable i.e. will the six metre high stretches be built to the quality of an earth dam embankment (which will probably need to be the case)? Can slope stability analyses show that the road pavement itself will not be undermined by such embankment soil slips? Would successive deposits of flood - muds render the embankment toe impermeable and so increase chance of future toe failures.	As part of the detailed design of the preferred route, an embankment stability analysis will be required. This analysis will be for a range of conditions, including one for a water level above the road. In designing the upgrade, the design of the embankment needs to consider the cost of providing a higher quality embankment against the risk of failure. Similarly, the selection of the level of flood immunity / embankment height needs to consider the cost of providing a higher level of immunity (higher road level) against the benefits that are provided by this (flood free route during larger storm events). The deposit of any mud at the toe of the embankment is not expected to decrease the stability of the embankment.	170
274	The Orange/A option is not an option. Substandard soils for road construction alluvial with high water tables.	The issues associated with the soft soils along the Orange/A option are not seen as being sufficient to eliminate this option from consideration, although it is certainly a major item to be considered in the selection of the preferred route. There are a number of proven techniques for the construction of embankment across soft soils including: ■ preloading – constructing the embankments higher than required or some years ahead of required completion to allow for settlements; ■ piling – installation of structural piles to transfer the load of the embankment to stiffer soils below the soft materials; ■ wick drains – installation of vertical drains to assist with the removal of excess water from the softer soils to speed the settlement (used in conjunction with preloading); ■ construction of a flexible pavement and installation of a strict maintenance regime to respond to any settlement of the embankment (not often preferred).	1783, 2148
275	The map of acid sulphate soils includes four classes, but no explanation of what these mean.	Class 1 soils have the highest potential to be affected by acid sulphates as these are located at the lowest elevation. Class 4 soils have the lowest potential to be acid sulphate soils.	262
276	The longest length of floodplain potentially creates the worst engineering conditions for road construction.	Refer to response to issue number 274	356, 491,520, 530, 612, 1958, 2275, 2291, 2335, 2380

Issue No.	Comments on geotechnical considerations	Response	Stakeholder ID
277	The Orange/A option would not solve the current problem of the river bank slipping.	From information provided by local residents, the RTA is aware of some stability problems associated with the existing alignment and with Shark Creek following the construction of the new bridge. Should the Orange/A option be selected as the preferred route, the design would incorporate bridges of sufficient length and construction techniques to improve bank stability as required.	156, 1729, 2105, 2373
278	The route also involves major engineering and logistic challenges. The floodplain is a natural underground water reserve with poor to indifferent load bearing soils which will seriously affect the building and maintenance of the motorway. The difficulties in building on the floodplain have been demonstrated with the proposed Ulmarra Bypass leading to its abandonment.	Refer to response to issue number 274. It is acknowledged that the floodplain creates a number of engineering conditions that required special consideration during design – soft soils, acid sulphate soils and flooding. It should be noted that the Ulmarra Bypass is still being considered as part of this project.	893
279	The summary of Orange/A option notes that there is a high potential to encounter acid sulphate soils, however, the report also notes this would not greatly effect construction as the road would be predominantly on fill, with the exception of bridge foundations, which would require special design measures.	Refer to response to issue number 274.	262
280	Both the Orange/A and Purple/B options would need parts of the road to be raised considerably to get out of flood. The need to maintain these options would be greater as sinking and slippage will continue for many years.	All options include some sections that traverse areas of floodplain would need to consider the likely soil settlements. Techniques such as preloading (constructing the embankments higher than required or some years ahead of required completion) and piling (timber, grout, stone) will be investigated with the view to minimising the ongoing settlement and therefore maintenance requirements through the operational phase of the road's life cycle.	2373
281	Who was the Geologist who studied the Red/D option?	Coffey Geosciences Pty Ltd carried out geotechnical investigations as part of the assessment of the options.	376
282	The Green/C and Red/D options would require considerable filling due to the soil conditions. Under normal conditions there would be between 10cm to 50cm of water on the ground. Much of the area is made up of blue/grey clay which in some places reaches a depth of 40ft.	All options include some sections that traverse areas of floodplain would need to consider the likely soil settlements. Techniques such as preloading (constructing the embankments higher than required or some years ahead of required completion) and piling (timber, grout, stone) will be investigated with the view to minimising the ongoing settlement and therefore maintenance requirements through the operational phase of the road's life cycle.	608

Issue No.	Comments on geotechnical considerations	Response	Stakeholder ID
283	Where the map of the Orange/A option is marked, the bottom or east side would be in 6 feet of water last flood. Also a large amount of fill and gravel would be required.	The Orange/A option would require the importation of fill from outside the works. This may be sourced from: ■ existing local quarries; ■ new quarries specifically opened for this project (these would be subject to the same legislative requirements for approval as the upgrade project); or ■ adjoining sections of the highway upgrade that provide a surplus of fill material (if available).	892
284	Building foundation destabilisation is a concern due to shale along the Orange/A option.	Through the southern portion of the study area, each of the options will be subjected to similar geotechnical conditions due to the presence of predominantly shale materials.	920
285	I have recently completed work under the Environmental Services Scheme on acid sulphate soils in the Shark Creek area. The soil distribution involved if the connection between the Red/D, Green/C and Purple/B options was selected would undo this work. The Shark Creek area is a known acid sulphate hot spot.	Refer to response to issue number 269.	1172
286	The Purple/B option will disturb acid sulphate soils which we know would affect the rest of our land, neighbouring land and ultimately the Tyndale, Shark Creek floodplain. The floodplain soil base is very fragile; the present highway is constantly subsiding with repairs increasing, particularly in prolonged wet weather.	Refer to response to 269. All options include some sections that traverse areas of floodplain would need to consider the likely soil settlements. Techniques such as preloading (constructing the embankments higher than required or some years ahead of required completion) and piling (timber, grout, stone) will be investigated with the view to minimising the ongoing settlement and therefore maintenance requirements through the operational phase of the road's life cycle.	1611
287	We request that a study team or engineer be sent to our property for soil tests and personal observation of your proposed route.	More detailed investigation will be required for concept design and environmental assessment of the preferred route. At that stage the project team will contact property owners to discuss the proposal and for permission to carry out a range of tests and investigations.	1611
288	Why was the geotechical sample (near Foster's Hut Lane at Tucabia) taken 1km west of the proposal?	Geotechnical investigations were undertaken to determine existing conditions of the overall study area. In order to facilitate this, some samples were collected were not within the route options corridors.	1866
289	Expressed concern about acid sulphate soils	Refer to response to issue number 269.	2321

4.3.10 Fog and other hazards

Issue No.	Comments on fog and other hazards	Response	Stakeholder ID
290	More thought needs to be given to some of the options around the Coldstream / Pillar Valley. These areas are the worst fog affected areas in the valley and there is an increased safety risk due to the effects of fog in this area.	Fog and other climatic conditions have been considered in the development and assessment of route options. There are issues with fog across much of the study area, including adjacent to the Clarence River, the Coldstream Basin and Pillar Valley where fog is known to occur for prolonged periods.	380, 2311, 2321, 2173, 647
291	The Orange/A option is located within an area along the Clarence River that is subject to prolonged periods of heavy fog and this would impact on the safety of this route, particularly at the interchange. The implications of fog on the development of the options and the potential impact to safety requires more investigation	Refer to response to issue number 290.	275, 289, 362, 628, 893, 976, 1001, 1852, 2105, 2275, 2476
292	Locating the route options through inaccessible bushland would increase the risk of bushfire both from accidents and arson, including cigarette butts being thrown from vehicles.	Emergency response procedures would include consideration of bushfire access as well access to other emergency services including Police, Ambulance, Fire Brigade and State Emergency Service.	163, 1924, 2173, 2244, 2318
293	Hazardous waste spills and polluted road run off would be a hazard to adjacent bushland areas.	The design of the road would include the consideration of detention basins capable of containing spills from the road and minimising the risk of pollutants entering bushland. Emergency procedures would be implemented in the event of an accident to contain and clean up spills, and rehabilitate any affected areas.	502
294	The information regarding the effects of fog submitted by Graham Griffin to the RTA (Griffin 2005) has been misrepresented within the Route Options Development Report. Most notable are: ■ Griffin notes there are seasonal differences in fog patterns however SKM only note that there is more fog in February – March; ■ There is no reference in the SKM report to the *magnitude* of the fog issue, nor to the fact that the Green/C and Red/D options go right through the area subject to our observations; ■ The ability to measure fog affects over the whole of the study area using historic satellite imagery is available to SKM but has not been utilised. ■ There seems to be no clear point to what this discussion is concluding. Is it to provide information on safety risks from fog and which option would be less at risk from fog?	Refer to response to issue number 290. Data provided by the community has however been considered in developing an understanding of this issue in the local area.	262

Issue No.	Comments on fog and other hazards	Response	Stakeholder ID
295	Frequent burn offs and bushfires would be an issue along the Purple/B, Green/C and Red/D options, and would cause smoke hazard and possibly close the road at times.	This is a risk that would need to be considered for all route options but would be managed by the RTA and emergency services organisations in the event of a fire. It is not a primary consideration in the selection of the preferred route.	949
296	The Green/C and Red/D options would make excellent fire breaks.	The route options may create fire breaks however, this is not a primary consideration in selecting the preferred route for the project.	1583
297	The climatic conditions in Pillar Valley would cause severe problems. Heavy flooding, large masses of water. A heavy thunderstorm belt causing severe electrical storms. Winter whiteouts that can last the best part of the day only to return at dark. Strong winds, even having a tornado in 1988 which caused extensive damage to the area and fires every year bringing heavy smoke are all regular occurrences	It is considered that risks associated with climatic conditions are applicable to all route options.	1866
298	It may be necessary to build the road along the coast to avoid fog.	Route options along the coast are outside the study area and have not been considered in this study.	1956

4.3.11 Construction

Issue No.	Comments on construction	Response	Stakeholder ID
299	The dust, noise and pollution that we will encounter during construction will be enormous.	A licence would most likely be required from the Department of Environment and Conservation (DEC) for the construction of the works. As part of the licence, various conditions are set with regards to noise emissions, dust control, water run-off, etc. Examples include controls such as: ▪ Watering of earthworks would be required to control dust and works would be restricted on windy days. ▪ Maximum construction noise limits would be set along with hours for construction works. ▪ Control of stormwater run-off would be required through the provision of sediment control.	1583, 2238, 2327
300	The amount of landfill required to build the Orange/A option is phenomenal. Where will this come from?	Refer to response to issue number 283.	170, 299, 362, 976, 1583, 1885

Issue No.	Comments on construction	Response	Stakeholder ID
301	The Orange/A option is not an option due to the high volume of imported material required for road construction.	The issues associated with the amount of fill required for the Orange/A option are not seen as being sufficient to eliminate this option from consideration. The option would require the importation of fill from outside the works (refer to response to issue number 283).	1870, 2148
302	Getting fill from another area will cost more, pollute more, disrupt traffic more and have major effects on another community's environment.	As part of the evaluation of the options available, the availability of fill is one item for consideration. The eastern routes provide the benefit of generating sufficient materials for fill and for the lower pavement layers. All options would require some materials to be imported (fill for western options and materials for pavements). Local sources will be utilised where appropriate otherwise materials will need to be sourced from outside the study area. If one of the western options is selected as the preferred route, it may be necessary to open a quarry in the ranges as a source of materials. The impacts of truck movements would be assessed in the environmental impact assessment for the preferred route.	491, 520, 530, 612, 1885, 1958, 2335
303	The Orange/A option would cause the greatest inconvenience to users of existing highway during construction, adding to cost.	It is acknowledged that the construction of the Orange/A option would create disruption to existing highway traffic. This could be minimised through good design and construction management (eg minimising the number of points whether the upgrade crosses the existing highway).	520, 530, 976, 2279, 2291, 2335
304	Is it the RTA's intention to level the Pillar Range to build the Orange/A option? Other hills in other areas have been levelled for this purpose and this would cause massive irreparable damage to the topography and environment of a pristine and richly biodiverse area which currently provides vital support for the fauna and flora of Yuraygir National Park. What effect would such a devastating change in topography have on rainfall patterns in the valley and on the biodiversity and viability of Yuraygir National Park?	Refer to response to issue number 283.	362, 2311, 2648
305	The Orange/A option would be the least practical option due to the importation of huge quantities of fill material to bring the road to the specified flood level resulting in an excessive number of truck movements from (an as yet unidentified) quarries causing deterioration of existing road pavements.	The number and frequency of truck movements for the importation of fill is dependant of the source of the fill materials and the proposed construction period and construction techniques During construction, the fill would be imported via designated haul roads after discussions with Council. Generally a contractual requirement is included to repair any damage to the local roads resulting from the construction. Where practical, haulage trucks would be directed to use the partially completed upgrade embankments rather than using existing roads.	530, 356, 2291, 2380,

Issue No.	Comments on construction	Response	Stakeholder ID
306	The construction of the Orange/A option would have a detrimental effect on residents and tourism in the whole of the Clarence Valley for the complete period of construction.	The construction of the Orange/A option would create some disruption to the existing highway traffic although this could be staged such that different areas are impacted at different times. Disruption to traffic can be minimised through good design and construction management.	149, 356, 530, 971, 2291, 2327,
307	We don't think that the Orange/A option is viable because of the difficulties in constructing so close to the current highway.	The issues associated with the construction of the Orange/A option are not seen as being sufficient to eliminate this option from consideration, although it is an item for consideration in the selection of the preferred route. While there would be disruption to the existing highway traffic, this could be minimised through good design and construction management.	326, 1783
308	Alternative route options to the Orange/A and Purple/B options offer less impediment for uninterrupted road construction and less impact on local roads during construction.	Construction of the Orange/A option, and to a lesser extent the Purple/B option, would create disruption to the existing highway traffic. This can be minimised through good design and construction management (eg minimising the number of points whether the upgrade crosses the existing highway).	149, 1159
309	If quarries on Woodford Island are used does this mean we can expect non-stop truck traffic passing through Brushgrove and Cowper?	At this stage the sources of fill have not been determined as they will vary depending on the location of the preferred route, and construction programming. Haulage routes would be determined following a consideration of house, noise and other factors.	170
310	One point of the wildlife conservationists have overlooked is the fact that the western route would require a tremendous amount of fill to build the highway. I have estimated that it could be as much as 10,000,000 cubic metres of material. This would need to come out of areas to the east and the excavation would have a disastrous effect on the ecology. This would also mean up to 250,000 truck movements on existing roads would be necessary.	The Orange/A option would require the importation of fill from Fill materials may be sourced from: ■ Existing local quarries. ■ New quarries specifically opened for this project (these would be subject to egislative requirements for approval). ■ Adjoining sections of the highway upgrade that provide a surplus of fill material (if available).	425, 1668
311	The Orange/A option has potential to increase the safety risks, especially during the construction phase.	During construction the safety risk would be higher for the Orange/A option compared to others. In order the control the risks, measures such as reduced speed zones and provision of barriers between the existing highway and the construction zones would be implemented.	356, 530, 612, 971, 1958, 2291, 2380

Issue No.	Comments on construction	Response	Stakeholder ID
312	The route requires a massive quantity of fill for both the road base and its embankment raising issues of: ■ Availability of road material and location ■ Wear and tear on existing roads ■ Use of a resource otherwise required by Council	Refer to response to issue number 283. The eastern routes provide the benefit of generating sufficient materials for fill and for the lower pavement layers. All options would require some materials to be imported (fill for western options and materials for pavements). Local sources would be utilised where appropriate otherwise materials would need to be sourced from outside the study area. As part of the construction contract, the contractor will need to maintain any roads that are used as haul roads. In considering the options for sources of local materials, the impacts on other local requirements will need to be considered. This will form part of the next stage of the project.	942, 893
313	Between Amos Rd and Brooms Head Road, the Red/D option would need an enormous amount of filling. I do not see how it is possible to get enough fill locally to build this highway above the major flood level.	The Red/D option could be constructed with an overall balance of cut to fill, meaning that material taken from cuttings further to the south would be used to fill across the floodplain section.	1871
314	How will RTA access fill and material for any of the options?	Refer to response to issue number 283. The Orange/A option would require a substantial amount of imported fill to enable construction. The Purple/B option would require the importing of some fill material but less than the Orange/A option. The Green/C and Red/D options would generally be balanced in terms of cut and fill.	2311
315	The Orange/A option is the most difficult to construct and manage.	The Orange/A option has a number of construction issues that increase the difficulty compared to other options, however, from the preliminary investigations, none of these issues have been such as to rule the Orange/A option out of consideration.	893, 2279
316	The Red/D option would allow uninterrupted road construction.	The comment is noted.	993

4.3.12 Number of lanes

Issue No.	Comments on number of lanes	Response	Stakeholder ID
317	Please look to the future. We want the best highway for years ahead. The current route does not have options. Keep the new highway as far to the east as possible and allow for expansion in the years to come.	The proposed cross section provides for two lanes in each direction and a median that would be wide enough to accommodate an additional lane in each direction, if and when needed. The road corridor would allow for the upgrade of the highway without need for further widening. This is applicable to whichever option is selected as the preferred route.	257
318	Six lanes would mean extra maintenance or more potholes.	Initially two lanes would be constructed in each direction. Allowance would be made in the median width for an additional lane in each direction that would be built if and when traffic volumes would require it. At this stage the inclusion of the additional lanes is only for planning purposes in obtaining a sufficient corridor width.	502

4.3.13 Staging

Issue No.	Comments on staging	Response	Stakeholder ID
319	Contrary to (the Route Options Development Report), the Purple/B, Green/C and Red/D options could be built in stages as it won't affect flow on the old highway whilst being built.	'Staging' refers to the construction of sections of the highway and then opening them to traffic. There are some possibilities of staging the Purple/B option through construction of the sections along the existing highway separately to the new alignments. The Green/C and Red/D options do not facilitate staging as any partial construction would result in the upgrading ending either at a dead end or a local road that would not cater with the additional traffic.	1346
320	The staged nature of the Orange/A option surely suits the government / RTA better.	Staging is a consideration in any major road development, but has to be considered, on balance, with other factors.	1352
321	Staging will cause massive delays for years while the route is being completed. It will take longer than if the road was to be built straight through as it would be for the Green/C and Red/D options.	While staging of the project could cause the overall construction time to be increased, it could also allow for some sections of the works to be brought forward, resulting in upgraded sections of the highway sooner.	1583

322	The eastern options do not allow for staged development, therefore no benefit can be derived until they are entirely finished and full funding must be found.	Staging is a consideration in any major road developmen, but has to be considered, on balance, with other factors.	2217, 2323

4.3.14 Timing

Issue No.	Comments on timing	Response	Stakeholder ID
323	In 1993, the incoming State and Federal governments promised a new upgraded Pacific Highway within 6 years. This 6 year period has blown out to over 10 years.	The original ten year Pacific Highway Upgrading program commenced in 1996. For the Ten years to June 2006, the NSW and Federal Governments committed to a $2.2 billion upgrade, $1.6 billion from the NSW Government and $0.6 billion from the Federal Government. In December 2005, the NSW and Australian governments announced a jointly funded program of $960 million for the three years to 2009. In May 2006, the Federal budget announced an additional $160 million, matched by NSW for the period to the end of 2009.	227
324	My main concern is the time taken to make a decision on the preferred route.	The announcement of the preferred route follows consideration of all of the information collected during the route options development and the route options display, including the social, environmental, functional and economic investigations, the feedback from the community and stakeholders, and the outcomes from the Value Management Workhop. Some additional investigations were also undertaken following the Value Management Workshop and these are also considered in the preferred route selection process. RTA is mindful of timing and the impacts this has to the community. However, there is a need to provide the community with information on the project	876, 1267
325	How long will it take to construct the new highway and at what cost if it took two years for Halfway Creek?	The construction of this sectoin of the upgraded highway is likely to take between three and five years due to the size of the project. The costings to date have been calculated in 2005 dollars as the timing of construction is unknown.	898
326	Please do not muck about with this project, the lives of people travelling this section of highway is absolutely paramount.	The timing of construction of this section of the road is dependent on funding provided by the State and Federal governments. At this stage funding has not been allocated.	149, 453, 2237, 2278
327	Jobs relating to the upgrade could commence within one to two years e.g. fencing of boundaries, clearing of timber, bridge building. These things could be done as finance comes available – why wait years to do the basics.	Prior to the commencement of any works, project approval is required from the Minister for Planning and the land would need to be acquired. These processes are anticipated to take longer than one to two years.	1346

328	As soon as an option is decided upon, it should be constructed.	The construction of this section of the road is dependent on funding provided by the State and Federal governments. At this stage funding has not been allocated.	149

4.3.15 Noise and vibration

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
329	The Route Options Development Report does not present any information about the potential for noise mitigation. What noise mitigation measures were considered? The cost of road noise mitigation needs to be factored into the cost of the options.	Noise mitigation can be a significant component of road project costs. At the route selection stage there is no requirement to develop a full noise assessment for each option which includes these costs. Each option has been assessed on the basis of unmitigated noise impacts for the purposes of enabling comparison of noise impacts of each option. More mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage, in accordance with the NSW Department of Environment and Conservation requirements and in discussion with landholders .	159, 170, 262, 266, 268, 271, 483, 893, 1267, 2278, 2370
330	Will extraneous compliance conditions will be imposed on adjacent landowners with regard to future utilisation of the land for purposes other than rural activities because of noise impacts from the highway?	The assessment of potential noise impacts is based on the location of houses and other sensitive receptors at the time of assessment. The consideration of any development adjacent to the road corridor, including any conditions imposed as part of a development consent, or otherwise, would be a matter for Council,	170, 262, 268, 271, 893, 1267
331	Construction of effective noise abatement barriers with a raised motorway and flood ways could be both difficult and expensive to achieve.	The study team is aware of issues associated with constructing noise walls or mounds within the floodplain and this issue would be further addressed as necessary for the preferred route.	170, 262, 268, 271, 893, 1267
332	Noise impacts can be minimised with good design and the implementation of mitigation measures.	The noise issues were considered early on the route options development process and the initial designs located the options as far as possible from residences, taking into consideration other constraints.	150, 281
333	Off ramps will be 20-30 metres from our house. Noise at the moment is unbearable. We cannot imagine what it will be like if these options go ahead.	The design of the proposed upgrade would be required to consider the noise criteria established by the NSW Department of Environment and Conservation. This may result in the inclusion of noise mitigation measures to achieve these goals.	1850, 2348

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
334	The bottom line for most of these options could well be the management of road noise.	Noise generation and management of impacts is a major consideration for all road projects, and needs to be considered along with a range of other social, functional, environmental and economic factors.	170, 2476
335	Detrimental impacts of the Red/D option can be reduced by installing sound barriers such as a green belt of thick trees.	Vegetation does not generally provide an effective noise barrier. A significant depth of dense foliage is required before this form of attenuation becomes effective. The most suitable form of noise mitigation would be selected for the preferred option. However, noise mitigation may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage, in accordance with the NSW Department of Environment and Conservation requirements and in discussion with landholders.	622, 1297
336	The Green/C and Red/D options should not be chosen because: ■ These areas are peaceful; ■ Noise pollution would be unbearable. Noise would travel through the valley, and will be channelled along low lying flats by the higher surrounding grounds; ■ Our home is close to the option and therefore impacted by motorway noise at all times due to lack of any natural landscape barrier; ■ Highway noise day and night would destroy the peoples' lifestyle; ■ Noisy traffic exuding pollution all day close to your residence is not a pretty thought and some will probably have to sell and move if the options proceed.	Because the area of these options is currently not subject to road traffic noise, the impacts of a new road would be pronounced for residents close to the route. While noise issues are an important consequence of any of the route options, these must be considered along with a wide range of other factors in the selection of a preferred route. Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage, in accordance with the NSW Department of Environment and Conservation requirements and in discussion with landholders.	174, 247, 271, 275, 372, 382, 417, 426, 430, 486, 950, 1855, 1868, 1870, 2082, 2088, 2096, 2106, 2173, 2231, 2238, 2246, 2276, 2320, 2334, 2355, 2360, 2391, 2406, 2417, 2418, 2420, 2430,2439, 2440, 2486, 2505, 2506, 2507
337	While the erection of acoustic walls may be built, from experience, these fail to control the noise.	Noise barriers are effective and aim to reduce noise levels to below criteria set by the Department of Environment and Conservation but this does not mean that traffic noise would be inaudible.	486

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
338	The Orange/A option should not be chosen as : ■ Noise levels resounding off the river as a result of increased traffic flows would affect more properties; ■ Increased noise due to an increase in the number of trucks and B-doubles using the highway and travelling at high speed; ■ Brings the highway closer to my house; ■ Already impacted by noise and will be made worse ■ Impacts on the most people	The Orange/A option would not in itself result in an increase in traffic volumes or growth in heavy vehicle volumes. However, it is recognised that the density of population along the Orange/A option is greater than for other parts of the study area, and this has been considered in the assessment of noise impacts for this options. Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage, in accordance with DEC requirements and in discussion with landholders.	125, 149 520, 530, 612, 920, 1159, 1493, 1870, 1783, 1937, 1958, 2088, 2148, 2157, 2319, 2335, 2380, 2397, 2419
339	The Purple/B option should not be chosen because of: ■ Increased noise levels; ■ Noisy traffic exuding pollution 24/7 close to your residence is not a pretty thought and some will probably have to sell and move if the option proceeds; ■ We currently hear the highway traffic during day and night, when the wind blows this way or the weather is still. Under the Purple option the noise would be a real intrusion in our lives.	Comments in relation to noise impacts of these options are noted. Because the area of these options is currently not subject to road traffic noise, the impacts of a new road would be pronounced for residents close to the route. While noise issues are an important consequence of any of the route options, these must be considered along with a wide range of other factors in the selection of a preferred route. Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage, in accordance with DEC requirements and in discussion with landholders.	166, 174, 1159, 2173, 1795, 2088, 2360, 2379
340	Existing noise affected areas would still be significantly noise affected if other options were chosen because so much traffic will remain on the current highway.	The comment is noted.	2173
341	To have to suffer the continuous noise from two highways would be unbearable. The noise would also stop anyone from buying the land to build on.	The comment is noted.	622, 2158

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
342	I am concerned about excessive noise (in excess of DEC standards).	In New South Wales, the guidelines for road traffic noise are documented in the *Environmental Criteria for Road Traffic Noise*) (NSW Environment Protection Authority, 1999 - available online at: www.environment.nsw.gov.au/resources/roadnoise.pdf.) and the RTA's *Environmental Noise Management Manual* (available online at: www.rta.nsw.gov.au/environment/noise/noise_management_manual.html). Construction and operational noise from highway projects is regulated by the NSW Department of Environment and Conservation. The Department of Environment and Conservation sets the road traffic noise level goals for the RTA. The RTA must try to achieve these goals 10 years after opening a project to traffic. Potential noise effects are considered early in the route options selection process for highway upgrade projects. Potential measures to reduce noise examined at this stage include: locating routes away from noise sensitive areas (where feasible); using existing hills and ridges to help shield from noise impacts; minimising road slope (grades) that need more energy from vehicles. Also providing a buffer area, or 'setback' on either side of the road. Consultation with the community forms an important part of this process. Practicality, technical feasibility, visual impact, cost and community preferences all need to be taken into account. While noise-reducing measures are undertaken during construction, some noise disturbance may be unavoidable. The most appropriate noise-reducing measures and their locations are decided after the preferred route has been chosen. Following construction, the RTA undertakes noise assessments to record the actual level of noise being experienced. These checks help the RTA to assess the accuracy of noise predictions, the effectiveness of the noise-reducing measures adopted, and the need to implement further noise-reducing measures.	175, 2238
343	Noise from traffic is not important. People can learn to live with noise - people cannot live without a house.	The comment is noted.	2282

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
344	Harwood Island Village would be affected by all options with respect to noise and vibration particularly with a bridge across the Clarence River. The old existing bridge already is a nightmare to live near with the noise.	Two additional options to the east and to the west of the existing bridge were considered following community comment during the route options display. A bridge west of Harwood has not been pursued due to difficulties in staging, acquisiton of more houses than the other options and potential impacts to cane land. However, noise impacts for the upgrade of the highway through Harwood have been assessed and residences that are predicted to experience noise levels in excess of the relevant criteria would be subject to noise mitigation. For some properties (where the criteria are already exceeded) this may mean a reduction in noise levels. The RTA is aware of noise and vibration issues associated with Harwood Bridge and responses to this are being considered separately to the Wells Crossing to Iluka Road project. Noise mitigation may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage, in accordance with DEC requirements and in discussion with landholders.	1975, 1850, 2134,
345	Since you have allowed B-doubles to use the highway now, the noise level is already too high here.	The highway would have noise mitigation measures incorporated into the design to limit traffic noise impacts to the DEC guideline levels. Noise mitigation can be a significant component of road project costs. Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage, in accordance with DEC requirements and in discussion with landholders.	2388
346	Of the four options my last choice is the Orange/A option. This is because it has the greatest number of residential buildings where night-time noise criteria would be exceeded (225 compared with 35 in the Green/C option).	The comment is noted.	125
347	The Red/D option will keep noise pollution to a minimum and affect fewer people (particularly if the suggested variation through Shark Creek is adopted as an alternate to protect James Creek residents).	The comment is noted.	491, 2319, 2362, 2441
348	How much noise would the people in James Creek have to endure?	Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage, in accordance with DEC requirements and in discussion with landholders.	2133

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
349	If the Green/C or Red/D options were selected, a bridge over Wooli Road Creek would need to be soundproof to reduce noise impacts on Pillar Valley Village.	Noise mitigation would be considered in accordance with DEC guidelines and in discussion with landholders.	1346
350	If we wanted to build near noise we would have built in town.	The comment is noted.	2266
351	Keep the noise of the railway and motorway together.	The comment is noted.	1956
352	Whatever option, my life will be affected by noise. We already live within 300m of the existing road and bridge and have to sleep with all the windows closed.	The comment is noted.	307, 2300
353	The RTA have been unable to address the issue of the extra noise impacts for residents along the present highway so residents hold no hope of this issue being addressed if a new highway is created.	The RTA recognises traffic noise impacts as a major issue in the community and endeavours to meet the DEC Environmental Criteria for Road Traffic (ECRTN), which sets out road traffic noise goals to be achieved for road proposals which involve new corridors, substantially changed alignments and/or proposals where traffic carrying capacity is increased. Noise mitigation measures for the preferred route will be further refined and detailed in the Environmental Assessment as part of the planning approval process.	536, 2388
354	Under the Purple/B, Green/C and Red/D options, several currently non-noise affected communities would become severely noise affected while existing noise affected areas would still be significantly noise affected because so much traffic will remain on the current highway.	The eastern route options would result in splitting of traffic between the new route and the existing highway, because approximately 70% of traffic is predicted to remain on the existing highway. However, at night, residents along the existing highway would benefit from substantial reductions in heavy vehicle volumes on the existing highway. Each option has been assessed on the basis of unmitigated noise impacts for the purposes of enabling comparison of noise impacts of each option. Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage in accordance with DEC requirements and in discussion with landholders.	166, 2217, 2323
355	Noise issues would be extremely important for Ulmarra.	The comment is noted.	893

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
356	On page 72, we are first told that the "base criteria" (whatever that might mean) for a new freeway are 55db(A)-50dB(A) (day-night) and for a redevelopment, 60dB(A)-55dB(A). Four paragraphs later, we are told that "new roads should be designed so as not to increase existing noise levels by more than 0.5dB. For a road redevelopment, noise levels should not increase above the existing by more than 2dB". The readers' best guess at understanding this non-lucid explanation is that for a new freeway, road noise can be as high as 55-50dB(A) (day-night), but simultaneously must not rise more than 0.5dB above the existing noise level, which SKM have already admitted is slight (i.e. much less than 49.5dB(A)). I hope that no readers have gained unjustified comfort from this information, since it is a misrepresentation of the EPA criteria (1999:6): the 0.5/2dB maximum increases in noise apply only where the maximum noise criteria are already exceeded i.e. to increases in noise above the 55-50/60-55dB(A) levels.	The allowance criteria only applies where the existing noise levels exceed the base criteria for new and/or re-developed roads and only after all 'reasonable and feasible' road design factors have been considered to minimise operational noise impacts. Practice Note IV of the RTA Environmental Noise Manual sets out the process for selecting and designing "feasible and reasonable" noise treatment options and can be down loaded from http://www.rta.nsw.gov.au/environment/noise/noise_management_manual.html	262
357	At lower noise levels than the maximum criteria, some people will still be subject to annoyance as a result of new noise impacts in areas that are currently not subject to high levels of road traffic noise. Were the background hum of a motorway to become a permanent part of the Pillar Valley environment, it would, even at low levels, destroy the sense of living in nature that many Pillar Valley residents have chosen.	It is acknowledged that much of the study area is currently not subject to high levels of road traffic noise, and that a new route option through these areas would result in a substantial change to the existing noise environment.	262, 268
358	It appears that noise modelling greatly underestimates the noise impacts. We ask you to provide a figure on how many residents were affected in previous Pacific Highway upgrade projects, when the RTA/consultant noise modelling predicted no noise impact above set criteria.	Noise modelling uses predictions of traffic numbers and heavy vehicle content to determine potential impacts therefore the noise predictions rely heavily on these input parameters. The RTA undertakes monitoring following opening of new roads to determine the accuracy of noise modelling predictions and where necessary this may lead to additional noise mitigation measures where standards are not currently met.	371, 2203
359	The current highway area is already a 'sacrifice' area so any more developments should be restricted to the already developed area. People who live there already have noise impacts so a new highway won't ruin their quality of life.	The noise impact assessment considers all sensitive receivers in the context of their respective noise criteria. The aim of the project is to meet relevant noise standards for all options, regardless of existing levels of noise affectation.	1887
360	The existing highway noise can be heard on quiet evenings and when we have North-West and Westerly winds.	The comment is noted.	2075, 2278, 2361

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
361	Construction of the upgrade may result in damage to properties due to heavy earthmoving equipment causing vibration.	Construction noise and vibration will be assessed for the preferred option. There are noise and vibration limits that would apply to the works that control these types of impacts at sensitive receivers.	486, 942
362	Fair compensation should be provided to all noise affected residents. Any other industry in NSW is limited to no more than a 5 decibel increase in noise. Residents are eligible for compensation for noise by the RTA only at a level of 55 decibels. In quiet country areas this may represent an increase noise levels up to 30 decibels above background. The guidelines for road traffic noise review need an urgent review with community input.	The comments are noted. This is a broad policy issue and includes consideration of both new and existing impacts.	2203
363	There is no attempt to distinguish new from existing impacts. The EPA (1999:6) applies different criteria for cases where the maximum noise levels are already exceeded (for redeveloping an existing highway, noise levels should not increase by more than 2dB). The Route Options Development Report simply notes the number of houses along the Orange/A option that will have noises at particular levels (p.105). Without knowing the current noise level, not only is it impossible to know the real impact of Orange/A. It is also impossible to know if the relevant maximum noise criterion is 60/55dB(A) or an increase of 2dB(A).	The approach taken for the route options assessment enables the comparison of the impacts of the route options. A distinction has been provided in the results tables showing where the criteria are valid for both the new and redeveloped roads.	262, 466, 2311
364	Noise impacts reported for the Orange/A option do not differentiate between houses already experiencing noise from the existing highway, those which will be impacted by new noise and those houses which will be acquired for demolition and hence having no noise affected residents. When the 175 houses estimated to be directly affected (i.e. are to be demolished) are subtracted from the 225 houses noise affected, all routes have similar numbers of noise affected houses.	Since the Route Options Development Report (RTA, 2005) was released, further review of noise affectation taking into account residences to be acquired has been undertaken. The results of this indicate that noise affectation for the Orange/A option would continue to be greater than for other options, however, the difference between the options is significantly less. It should also be noted that estimates of house acquisitions are preliminary only and therefore residual residences affected by noise may be subject to change.	174, 262, 268, 621
365	Of great concern is that these options will expose the "Pillar" of Pillar Valley to greater vibrations from a highway either just under or through it so you could be ruining a landmark.	Vibration from road traffic is expected to be at a very low level when compared to the standards for structural damage criteria. Damage to this landmark from vibration is highly unlikely given the separation distance of the options from it.	2393

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
366	The Orange/A and Purple/B options both avoid the residential communities of James Creek, Gulmarrad, and Pillar Valley solving the increase in noise to these areas where people have moved to be in peace and quiet. These two options follow the existing highway path through Maclean/Townsend, in which case a new highway would be significantly quieter than the existing highway for the residents who live there.	The comments are noted. However, it is still a requirement that noise affectation above the DEC criteria is addressed should the Orange/A or Purple/B options be selected.	413, 2227
367	Previously I resided for 27 years on the current Pacific Highway and the noise of the traffic never disturbed me.	The comment is noted.	2280
368	The Environmental Protection Authority (EPA) argue it is “less costly and more effective” to avoid noise impacts at the planning stage, rather than having to mitigate impacts “relatively late in the road development process” (EPA 1999:1). It is hard to see how SKM plan to do this, given the absence of any information which distinguishes existing highway noise, noise which will continue along the highway even if the Purple/C, Green/C or Red/D options are built, and new noise created by the Orange/A option.	Noise issues were considered early in the route options design process by identifying structures within the study area and including this in the constraints analysis that contributed to the development of route options. The development of the route options therefore applied the process suggested by the EPA (now Department of Environment and Conservation).	262
369	The Orange/A option would affect the greatest number of houses by acquisition or noise (175 to 225) compared to the Purple/B option (35 to 65), the Green/C option (5 to 35) and the Red/D option (10 to 40).	The comment is noted.	356
370	The noise from the highway would travel directly to us on the prevailing easterly sea breezes. We have tried to replicate the RTA's projected night time noise levels and are terrified by the din that your own figures suggest we would be subjected to.	The comment is noted.	350, 1855
371	The noise level generated by Orange/A option will greatly exceed existing road noise in the area of McLachlans Lane, Four Mile Lane, Buchanan’s Lane and Norton’s Lane. The information provided does not appear anywhere in the RTA route options magazine and should be brought to the forefront of the debate. Consideration must be given to minimal impact upon the lives of people living in a rural community.	The Orange/A option would result in new noise affectation in the areas identified in the submission. This is noted on page 105 in the Route Options Development Report (RTA, 2005) .	1852
372	The noise that the Green/C and Red/D option will incur on our property will be immense due to failure to take into account the north-east wind that blows constantly. This noise, due to the wind, will be constant and of high levels.	The assessment undertaken for the project is consistent with established methodologies for route options noise assessment. However, climatic conditions may at different times influence the level of noise experienced at individual receivers.	163, 1953, 2307

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
373	Noise impacts will destroy our amenity and the peace and quiet of the area. We did not choose to live next to a highway and its noise.	It is acknowledged that residents in some parts of the study area currently enjoy low levels of general noise and limited influence from road traffic on noise levels. Because of the spread of settlement across the study area, it is impossible to avoid noise impacts on all residences. However, noise impacts must be considered along with a wide range of other issues when developing and assessing the route options.	166, 271, 354, 479, 1868, 2453
374	The project's aims of minimal disruption to populations would be well off the mark with the Orange/A option as some 225 residences would be affected by noise or the road corridor itself. It is close to the existing highway and major residential areas and would impact on the most properties of any of the options being considered.	The comments are noted	2279
375	The RTA solutions of installing double glazing to noise affected properties does not recognise that most people in these areas consider activities in the outdoor environment as a normal part of their lifestyle.	Noise mitigation can be a significant component of road project costs. Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage in accordance with DEC requirements and in discussion with landholders.	166, 266, 271
376	Construction noise would also impact greatly on the residences during the period of construction. The impact of construction noise is not addressed in the Options report.	The impact of construction noise will be addressed in detail as part of the environmental impact assessment of the preferred route.	266, 271
377	The Doppler effect on air borne noise is basic engineering physics. SKM claim to have traffic planning and acoustic engineering skills yet the impact is not detailed in the Options report.	The Doppler Effect relates to the apparent shift in frequency (not level) of a noise source with respect to an observer. Inclusion of this phenomenon is not a requirement of the DEC or RTA and would not change the outcome of the noise assessment undertaken by SKM.	266, 271
378	The Orange/A option directly impacts on the most number of houses (homes to those who live there) and also indirectly impacts a few hundred others through daytime and night time noise levels.	The comment is noted.	2304
379	Tucabia is a peaceful village. At night the only noises are dogs and birds. The noise from the highway will be a negative impact on Tucabia.	The comment is noted.	166, 1956

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
380	We are already suffering from noise/pollution. We live with our doors and windows closed, and can't sleep at night due to continual trucking noise.	Existing noise levels along the highway have grown incrementally as traffic volumes (and in particular the volume of heavy vehicles) has increased over time. The development of route options has considered the high concentration of people in the study area living close to the existing highway and the impacts of current noise levels on amenity. This is reflected in the results of noise modelling, that show a relatively high number of people affected by options that are close to the existing highway, relative to options that deviate from the highway.	1850
381	The Purple/B, Green/C and Red/D options would lead only to a minimal reduction in noise for current highway dwellers during the day, though there would be some improvement at night. In other words, the report seems to be saying that during the day, current highway dwellers would have similar noise levels to those they have now, under any option; they would be somewhat better off at night under the Purple/C, Green/C or Red/D option than they are now, but not significantly worse off under the Orange/A option than they are now. Given qualifying comments about noise effects in the report, the summary table data are misleading.	Table 7-24 of the Route Options Development Report (RTA, 2005) provides the comparative assessment of the route options between Wells Crossing and Iluka Road. The cumulative noise impacts are noted in the table with the following explanation: ■ Noise effects would be split between the existing highway and the new road corridor. A new noise source would be created in areas that are currently not subject to high levels of road traffic noise. ■ Noise reduction on the existing highway would be minimal during the day, as approximately 65% of traffic would continue to use the existing highway. ■ Noise reduction along the existing highway at night would be substantial as a result of heavy vehicles using the Purple/B, Green/C or Red/D options. The summary data in the noise assessment tables identify the number of residences that may potentially require some form of mitigation and does not provide misleading or contradictory information.	262
382	We will be affected by extremely high levels of noise in excess of the night time noise requirements. We believe the noise level will be over 100 dB(A) which would be too high to gain any peaceful sleep or reside peacefully. Such close proximity not only could significantly increase noise levels but it would also increase pollution levels.	It is not possible for noise levels in the order of L_{Aeq} 100 dB(A) to be generated by the highway. Irrespective, noise levels generated by the proposal have the potential to be high. Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage in accordance with DEC requirements and in discussion with landholders.	1975

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
383	We live at Glenugie which appears to be completely forgotten in the Orange/A and Purple/B options. We live in Airport Rd, 700 metres from the Orange/A option and 800 metres from the Purple/B option. The noise from the Pacific Highway is very extreme and with either one of the proposed options mentioned must increase. We feel that the Red/D option has the least impact on community lifestyle. More consideration needs to be given to those people near the Orange/A and Purple/B options.	The commenst are noted.	1967
384	We moved to Gulmarrad for peace & quiet. As it is, we can hear trucks during the night going down the hill to Ferry Park.	The comment is noted.	1956
385	How many houses would be affected by Purple/B night time noise levels exceeding DEC criteria: 90 (pp.xii, 152) or 65 (p.121)?	At the time of developing the Route Options Development Report (RTA, 2005), Purple/B option is predicted to result in exceedence of the night time noise criteria for a new road at approximately 90 residences. The figure on page 121 is an error.	262
386	Noise will echo across the valley from the amount of traffic using the "super highway", the majority of which will be heavy vehicles. So much for peaceful, country life.	The comment is noted.	2158, 2189
387	The Green/C option contains two corners very close to our property in Gulmarrad to allow the motor way to pass to the west of a SEPP14 wetland. These corners will cause the noise to be concentrated in the direction of the residences.	The noise emissions from any of the route options would spread out geometrically from the roadway in all directions. The route options have been designed with long, sweeping bends that reduce the potential for noise to be concentrated towards particular receivers. Modelling of noise impacts takes the geometry of the road into consideration when predicting the level of impact on residences.	266

Issue No.	Comments on noise and vibration	Response	Stakeholder ID
388	Some of the most important elements of social and environmental impact have neither been studied nor included in the lists of key criteria. The criteria used in the summary tables and elsewhere do not recognise the value of rural bush and are, in effect, biased against rural residents, since impact is measured in terms of the number of houses affected by direct acquisition and noise, i.e. areas of higher population density (Orange/A) automatically rate as high impact, whereas less developed areas automatically appear to be low impact. The report notes that many of these residences along the Orange/A option are already affected by high noise levels along the existing highway, but makes no attempt to quantify this. The other options are largely or entirely new routes, where any noise would be a new noise. Hence, for a valid comparison between options, the report needs to quantify how many houses along Orange/A would be newly affected by noise, and to what extent.	The impacts on rural residential areas were considered during the route development and assessment phases, along with other social considerations. The Route Options Development Report (RTA, 2005) specifies: ■ The approximate number of houses within each route corridor (taken as a 200 metre wide corridor); ■ The area of urban/ village zoned land within each route corridor; ■ The area of urban investigation zoned land within each route corridor; and ■ The area of rural residential or rural small holdings zoned land within each route corridor. The noise criteria differentiate between areas where a new road would be constructed and areas where the road would be redeveloped. The report assesses the noise impacts on each of the options on a comparative basis and documents the potential for exceedance of the criteria. Following the route options display the project team has undertaken further assessment of the cumulative noise impact of each of the modified options (which were developed at the Value Management Workshop in March 2006) combined with traffic that would continue to use the existing highway to better understand how noise would be distributed across the study area as a result of the options. The outcome of these additional assessments is reported in the Noise and Vibration Working Paper (RTA, 2006) in Appendix B and discussed in the Preferred Route Report (RTA, 2006).	262

4.3.16 Air quality

Issue No.	Comments on air quality	Response	Stakeholder ID
389	Pollution studies have not been done to date but historical data indicates that concentrations will be above the recommended levels. The health risks of increased exhaust emission pollution are not mentioned or assessed in the Route Options Development Report.	Potential air quality impacts are discussed in Section 5.3.5 of the Route Options Development Report (RTA, 2005). Modelling results have been assessed against the criteria established by the NSW Department of Environment and Conservation. Historical data from monitoring of other sections of the Pacific Highway indicate that sampled pollutant concentrations near the road are well below DEC criteria. Health risks are considered in the context of standards established by the DEC, that are reflected in the air quality criteria.	166, 175, 271, 382, 479, 505, 1953, 1970, 2307, 2439, 2456
390	Six lane highways reduce greenhouse gasses by allowing fast efficient flow of traffic.	Improved fuel efficiency as a result of reduced gradients and reduced acceleration or deceleration can contribute to reduced greenhouse gas emissions from traffic using the highway.	1205
391	The air quality assessment did not factor in the predominant north-east wind which will increase the incidence of air pollution at our homes.	The air quality model assumes that wind is blowing from the road towards areas of settlement, and would transport airborne pollutants to these areas. The concentrations of pollutants at various distances from the road therefore are a 'worst case' assessment and take into consideration wind direction.	271, 382, 479, 505, 1632, 1953, 1970, 1978, 2307, 2234, 2417, 2427, 2439
392	The government should discourage consumption of fossil fuels to reduce global air pollution.	The comments are noted. This is a broader strategic policy issue.	502
393	Construction of a new highway will generate increased greenhouse gases over retaining the existing route option, as a result of greenhouse gasses released by construction processes. Construction of a Class A road will result in far less greenhouse gas emissions from the construction process than a Class M road.	It is anticipated that there would be very little difference in the greenhouse gas emissions from construction of a Class A road as compared to a Class M road, because the two classes are similar in design and therefore construction effort.	268, 362
394	Greenhouse gases will not be offset because fuel consumption increases as vehicle speed increases.	Vehicle operating speeds would increase only slightly as much of the current road is sign-posted at 100km/h and the new road would be either at 100 or 110km/h. Fuel consumption benefits would arise from smoother traffic flow and less need to slow down or speed up through urban areas.	268, 362
395	The Route Options Development Report does not detail DEC air pollution standards and provides no evaluation of existing air quality conditions.	Qualitative discussion of existing air quality conditions is provided in the Route Options Development Report (RTA, 2005). There are very few sources of ongoing air pollution and traffic volumes on the existing highway are relatively low, with generally good conditions for the dispersal of airborne pollutants.	174, 262, 275

Issue No.	Comments on air quality	Response	Stakeholder ID
396	Air pollution would affect flora communities around the Franklins Road area and in the vicinity of the Green/C and Red/D options.	Concentrations of air pollutants are unlikely to be sufficiently high to result in impacts on flora communities. Roadside vegetation typically shows little sign of affectation by air pollution, even in urban environments.	268, 2096, 2231, 2276, 2320, 2391, 2406, 2418, 2420, 2440, 2430, 2486, 2505, 2506, 2507
397	Using urban criteria for (air) pollution in a bush environment is misleading and unfair.	The NSW Department of Environment and Conservation criteria do not distinguish between urban and rural settings, but establish standards based on maintenance of human health.	268
398	The longer route of the Orange/A option will increase greenhouse emissions, and air pollution with the easterly breeze amplifying this affect.	Greenhouse emissions are not influenced by the direction of wind. However, it is likely that the Orange/A option would result in higher emissions because the longer distance for vehicles to travel would result in greater fuel consumption compared to shorter options. However, overall fuel consumption must be considered taking into account other factors such as congestion, vehicle speed and road gradients.	942
399	The Red/D option will have the minimum diesel pollution.	The comment is noted.	2362
400	Recent air pollution studies reveal that living and /or working near major highways is equivalent to smoking 80 cigarettes a day.	The comment is noted.	2447
401	Organic citrus orchard next to the Purple/B option will be adversely affected by the new road Please advise us of projected fall out figures and any relevant impact.	A review of existing air emission studies on the Pacific Highway indicate that the potential for significant air quality impacts adjacent to the easterly route options is minimal. Air quality impacts will be determined in more detail as part of the environmental impact assessment for the preferred route so that impacts can be evaluated accurately.	265, 1357
402	Chemical pollution from petrol/ diesel fumes would become a major problem.	Modelling of air quality impacts for this project, along with evidence from monitoring undertaken for other Pacific Highway projects indicates that air pollution is not likely to be a significant issue for this project, because of relatively low traffic volumes and relatively good existing air quality.	2246
403	Our water supply relies on rainfall collection which would be contaminated by the exhaust emission residues generated by any nearby highway in the eastern study area.	Air quality assessment indicates that the concentrations of air emissions from the route options would be generally well below standards established by the NSW Department of Environment and Conservation. It is therefore considered unlikely that air emissions would impact on the quality of drinking water.	166, 174, 247, 262, 265, 372, 1357, 1795, 2255, 2311, 2318, 2379, 2420, 2505, 2506, 2507

Issue No.	Comments on air quality	Response	Stakeholder ID
404	Trees are scientifically proven to clean the air we breathe by absorbing carbon dioxide and returning oxygen to the air. This is another reason why as few as possible should be removed for any development and the option which would affect the least amount of bushland is again the Orange/A option.	The comment is noted.	163
405	The increasing movement of heavy freight which is shifted long distances by road has serious implications in terms of greenhouse emissions.	Road freight is an efficient way of transporting many goods over long distances. Rail freight is suitable for some goods but is not cost effective or quick enough for a large proportion of freight that moves along the coastal corridor. Improving the standard of the Pacific Highway will improve vehicle efficiency and reduce travel times and distances, thereby assisting to reduce greenhouse emissions in the absence of other suitable forms of freight transport.	299

4.3.17 Water quality

Issue No.	Comments on water quality	Response	Stakeholder ID
406	How will adjacent water courses be protected from pollutants / contamination from highway run off and accidental spills?	In order to minimise the impact of contaminants and pollutants on the surrounding watercourses, structural and non structural measures capable of controlling road run-off pollutants would be implemented. Pollution control measures can include (but are not limited to) gross pollutant traps, grass swales, sediment basins and constructed wetlands. Areas near watercourses could also be bunded to ensure no pollution can escape if an accidental spill occurs. These measures would be addressed as part of the preferred route option assessment and incorporated into Environmental Management Plans developed during construction.	174, 268, 356, 362, 491, 520, 530, 612,893, 971, 1099, 1493, 1583, 1783, 1870, 2105 , 2148, 2238, 2255, 2291, 2311, 2318, 2335, 2380
407	The Green/C and Red/D options would have potential to contaminate waterways and the result would be catastrophic for the ecological, agricultural and domestic uses of these waterways due to the sensitivity of the area.	Prior to the construction of any route, assessment of water quality would be undertaken in more detail, including measures to manage these impacts both during construction and operation. These would be incorporated into an Environmental Management Plan that assists with the environmental management of construction activities.	247, 2096, 2231, 2276, 2320, 2391, 2406, 2417, 2418, 2420, 2430, 2486, 2505, 2506, 2507

Issue No.	Comments on water quality	Response	Stakeholder ID
408	The Green/C and Red/D options would have potential to contaminate Lake Wooloweyah in particular and the result would be catastrophic for the ecological and agricultural activities that depend on this waterway.	The impact of the proposal on water quality, in particular Lake Wooloweyah would be evaluated during the detailed environment impact assessment of the preferred route, and measures will be proposed to manage these impacts. Measures identified to manage these impacts will be incorporated into the Environmental Management Plans that assist in the environmental management of construction activities.	608
409	The Orange/A option affects our access to well water that has low salinity. Well water such as this is hard to obtain.	Further assessment would be undertaken to determine if proposal impacted upon the water supply source. If the source were to be directly affected then the RTA propose measures to address these impacts in consultation with landholders.	1001
410	Our spring fed dam would be affected.	Refer to response to issue number 409. The potential impact on the quantity of water would also be further assessed to determine if the preferred route would directly affect water supply. If the road was found to directly affect the water supply source, the RTA would provide an alternative supply, eg by reconstructing the water supply source.	898, 1937, 2360
411	We are worried about the gross pollutants that will enter the river system / SEPP 14 wetland through people dumping rubbish from vehicles.	In order to minimise the chance of pollutants entering waterways and SEPP14 wetlands, structural and non structural measures capable of controlling road run-off pollutants would be implemented. Pollution control measures can include (but are not limited to) gross pollutant traps, grass swales, constructed wetlands. Areas near watercourses could also be bunded to ensure no pollution can escape if an accidental spill occurs. These measures would be addressed as part of the preferred route option assessment and incorporated into Environmental Management Plans developed during construction	1998

Issue No.	Comments on water quality	Response	Stakeholder ID
412	Expressed concern about water quality impacts: ■ Need to consider impacts on the fishing industry. ■ Impacts from pollution of run-off water for dams has consequences for the emerging aquaculture industry. ■ There will be major water contamination to local waterways rendering them unsuitable for cattle, horses, gardening, fauna and flora.	It is acknowledged that impacts on water quality will have consequential impacts, for example on fishing and acquaculture industry and the agricultural industries relying on clean waterways. In order to minimise the impact of contaminants and pollutants on the surrounding watercourses, structural and non structural measures capable of controlling road run-off pollutants would be implemented. Pollution control measures can include (but are not limited to) gross pollutant traps, grass swales, sediment basins and constructed wetlands. Areas near watercourses could also be bunded to ensure no pollution can escape if an accidental spill occurs. These measures would be addressed as part of the preferred route option assessment and incorporated into Environmental Management Plans developed during construction.	247, 1611, 2231, 2276,2320, 2360, 2391, 2406, 2417, 2418, 2420, 2430, 2486, 2505, 2506, 2507, 2440
413	The Red/D option would remove any risk of chemical spillage from the Clarence River.	The comment has been noted.	993
414	The Green/C option would affect our water catchment and remove our water source.	Refer to response to issue number 409.	1866
415	Run off water for dams has the potential to be polluted which will impact on the potential growth of the aquaculture industry in the Taloumbi area.	As part of the preferred route option stage, further assessment of impacts to water quality and in aquaculture industry will undertaken. In order to minimise the impact of contaminants and pollutants on the surrounding watercourses from runoff entering dams, structural and non structural measures capable of controlling road run-off pollutants would be implemented. Pollution control measures can include (but are not limited to) gross pollutant traps, grass swales, constructed wetlands. Areas near watercourses could also be bunded to ensure no pollution can escape if an accidental spill occurs. These measures would be addressed as part of the preferred route option assessment and incorporated into Environmental Management Plans developed during construction.	2360

Issue No.	Comments on water quality	Response	Stakeholder ID
416	The Route Options Development Report discusses water quality ratings at length, without ever explaining the relevance of this to the assessment of the route options i.e. what will the effects of road run off be to nearby waterways.	Potential water quality impacts are an issue for any option. The purpose of reporting water quality data at this stage is to present an overview of the quality of the wateerways in the study area and to determine if there are any specific issues to be taken into consideration in the selection of a preferred route from a water quality perspective and which could influence the selection of one option over another. In the case of the study area there are some water quality issues but they are not significant and also are not suffcientily different to warrant this paramter being a critical determinant in route selection, although it will continue to be an important consideration. If not properly controlled and managed, roads can contibute high levels of sediment and other pollutants to waterbodies during construction; during operation a number of pollutants including oils and rubbish can run off to waterbodies and waterways. In addition to impacting on the quality of the waterway there may be an impact on the habiitat of aquatic flora and fauna. Following selection of the preferred route, the impacts of road runoff to the water quality of surrounding watercourses will be assessed in more detail as part of the detailed environmental assessment. The level of impact will depend on the type of waterway being affected. Potential impacts will be identified and control measures will be proposed to manage these impacts. These measures would be incorporated into an Environmental Management Plan that would be developed prior to construction to assist in the environmental management of activities. Regulatory bodies ensure impacts to water quality are monitored and measures are in place to meet the criteria set for the type of waterway being affected.	262, 362
417	The Orange/A option should be chosen over the eastern options as all other options will impact on the sensitive headwaters of the Clarence River.	The comment has been noted	275
418	The highway is to run very close to a natural water hole that has been left in its natural state by the owner, so as to attract and help our animal life survive.	Prior to construction of the proposal, a detailed assessment of the preferred route would be undertaken to identify potential impacts to the water quality of nearby waterbodies and the measures proposed to manage these impacts. Measures identified to manage these impacts will be incorporated into the Environmental Management Plans that assist in the environmental management of construction activities	372

Issue No.	Comments on water quality	Response	Stakeholder ID
419	It must be pointed out that the State government is currently supporting a move to classify the Tullymorgan's Broadwater wetlands internationally, minimising developments in efforts to protect it. The wetlands are only 4 kilometres upstream from the proposed bridge site, thus will be directly affected if the bridge construction is successful. It seems hypocritical that the wetlands in the Harwood area are held to ransom due to this development but the attempts to protect the Broadwater's are supported.	Prior to construction of the proposal, a detailed assessment of the preferred route would be undertaken to identify potential impacts construction and operation of the proposal will have on wetlands surrounding the proposal. In order to minimise the chance of pollutants entering waterways and SEPP14 wetlands, structural and non structural measures capable of controlling road run-off pollutants would be implemented. Pollution control measures can include (but are not limited to) gross pollutant traps, grass swales, constructed wetlands. Areas near watercourses could also be bunded to ensure no pollution can escape if an accidental spill occurs. These measures would be addressed as part of the preferred route option assessment and incorporated into Environmental Management Plans developed during construction	1910
420	Following many years of flood mitigation and draining of wetlands, there has been an enlightened approach to the management of floodgates and farming practices, which is seeing the gradual restoration of wetlands and free streams. This is an important move which benefits not only the environment, but also the economic and social life of the community. The cattle industry gains from improved fodder to carry them through drought times. The fishing industry gains from better water quality and breeding habitat. The adverse effects of acid sulphate soils are reduced. There are many benefits, and the project should take these into account in its planning.	The comment has been noted and these issues will be taken into account during the detailed environmental impact assessment of the preferred route option.	1955
421	The potential for chemical spills into the river is increased and could create an ecological disaster in the complete River system affecting a large fishing industry and recreational users of the river.	Current design standards require the provision of spill basins sized to capture runoff from potential accidents. Areas near watercourses could be bunded to ensure no pollution can escape if an accidental spill occurs. These measures would be addressed as part of the preferred route option assessment and incorporated into Environmental Management Plans developed during construction	530

4.3.18 Flora and fauna

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
422	Fauna crossings to facilitate the movement of terrestrial and arboreal marsupials, reptiles, amphibians, and possibly Emus across the study area require consideration in the design of the options. This may require large bridges rather than small culverts to cater for species such as the coastal Emu. The Purple/B, Green/C and Red/D options in particular would sever high value habitats and would require crossings. Viable populations of a range of species may no longer be possible. Fencing of much of the length of the options would also be required to prevent road kill.	The RTA will continue to investigate the potential for inclusion of fauna crossings in the design of the options and the preferred route for the project. This would include consideration of the likely effectiveness of a range of different crossings (such as underpasses or overpasses) in catering for the needs of a range of species known to inhabit the area.	163,175, 178, 262, 294, 350, 362, 371, 371, 380, 483, 502, 537, 949, 1001, 1142, 1924, 1955, 2077, 2080, 2086, 2093, 2094, 2096, 2127, 2130, 2135, 2137, 2145, 2158, 2158, 2159, 2165, 2168, 2174, 2176, 2177, 2186, 2188, 2203, 2205, 2206, 2210, 2223, 2236, 2239, 2242, 2244, 2245, 2261, 2268, 2276, 2301, 2311, 2313, 2320, 2328, 2343, 2353, 2365, 2374, 2378, 2391, 2401, 2402, 2406, 2410, 2417, 2418, 2420, 2423, 2430, 2431, 2438, 2440, 2444, 2446, 2474, 2480, 2486, 2493, 2505, 2506, 2507, 2512
423	The route options have the potential to impact on wildlife. However, the impacts of route options on fauna can be managed by fencing and provision of crossings, as shown by other road projects.	Refer to response to issue number 422.	149, 150, 530, 1016, 1205, 1297, 1870, 2148, 2278, 2314, 2376 2383, 2385, 2478
424	A bridge structure should be incorporated in the design over the SEPP 14 wetland north of Pine Brush State Forest rather than fill as this will allow a corridor from the wetland to the east.	Should the Green/C option be selected as the preferred route, a bridge structure would be considered for the crossing of the Shark Creek SEPP 14 wetland both to reduce the footprint of the road (and impacts on the wetland) and to provide for fauna movement corridors known to exist in this area.	245

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
425	The Route Options Development Report states that the Orange/A option has "the least comparative potential impact on threatened fauna and significant habitats". However, the report also notes there is a "wildlife black spot" on the existing highway and suggests that "fauna crossings at this location would be considered". There is no discussion of what fauna are involved, nor the efficacy of fauna crossings. Further discussion is required in which species would be affected, whether fauna crossings would be practical for any of the routes, and if not, what the impact on local animal populations would be.	The effectiveness of fauna crossings and requirements for their location and design for each of the route options is to be further considered prior to the selection of a preferred route for the project. This would include consideration of the specific requirements for species known to inhabit the area.	262
426	Wildlife corridors are described in very general terms and are quantified in the summary table as if they have a well defined objective status. However, there is no evidence for how corridors were defined and they are not mapped. It appears that other key corridor areas have been excluded. It is impossible to assess the true impact of the route options on these corridors.	Information has been provided based on previous mapping undertaken by the Department of Environment and Conservation and knowledge of the study area from a range of sources including field work and records of local land owners and ecologists. During the route options development process, preliminary investigations were undertaken, as well as consultation with individual landowners and other members of the community to gather as much information as possible to ensure a good understanding of the issue. Further work has also been undertaken since the route options display.	262, 268, 362, 2414
427	Severance of wildlife corridors within and between properties, National Parks and State Forests is a concern.	During the route options development process, preliminary investigations were undertaken, as well as consultation with individual landowners and other members of the community to gather as much information as possible to ensure a good understanding of the issue. RTA recognises many of the potential impacts to wildlife corridors and is continuing consultation with relevant authorities to determine the extent of impact that this may cause to the various species identified within the study area. This information will be incorporated into the concept design and environmental assessment for the project. The RTA will continue to investigate the potential for inclusion of fauna crossings in the design of the options and the preferred route for the project. This would include consideration of the likely effectiveness of a range of different crossings (such as underpasses or overpasses) in catering for the needs of a range of species known to inhabit the area.	247

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
428	Protective fences and flyovers, while effective when new, will deteriorate and lose their efficiency.	Maintenance of fauna mitigation measures including fences, underpasses and overpasses would be undertaken by the RTA on a regular basis to ensure that they continue to be effective.	2329
429	While tunnels under the highway may work for koalas and possums, we have seen no documentation to suggest that these tunnels work for coastal Emus and other mammals.	Prior to, during and following the route options display the project team endeavoured to futher investigate the requirements for the coastal Emu. It is recognised that uncertainty remains associated with the paucity of data relating to the effectiveness of corssing measures. For this reason assessment of the impacts of the route options requires a conservative approach and has focused on avoiding potential for impacts to the greatest extent practicable. The RTA intends to undertake substantial further investigations to assist in understanding the likely impacts of the project and identifying mitigation measures that will be effective for the Emu, and for other mammals.	305, 371, 2191
430	Flora and fauna would be totally destroyed and this is outside the control of any agencies. Life experiences and knowledge of property owners have contributed to the management and protection of the ecological values of the area, combined with productive farming.	It is acknowledged that many property owners have contributed to the conservation of native species in and around the study area.	2096, 2276, 2320, 2391, 2406, 2417, 2418,2420, 2430, 2440, 2486, 2505, 2506, 2507

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
431	The Route Options Development Report refers to the Sandon/Brooms Head area being "one of two main breeding areas" for the endangered coastal Emu. The other area is not identified. The "study team" have seen emus around Taloumbi and Red Root Rd and the report states that they are well known around Gulmarrad. There is no discussion of Emus around the Pillar Ridge foothills south and west of Firth Heinz Road, and it must therefore be assumed that the study team are ignorant that this is also a breeding area for the Emu and this breeding population is larger than that around Sandon/Brooms Head. This area would be directly impacted by route options Purple/B, Green/C and Red/D.	The study team has obtained records of the coastal Emu from the DEC NSW Wildlife Atlas, additional records from DEC (Matt Clarke) not yet included in the Atlas, the Scientific Committee Final Determination for listing of the coastal Emu as an Endangered Population, from local ecologists and property owners, and from field investigations. These records are spread across the eastern part of the study area and into floodplain areas and indicate that Emus are known from the Pillar Valley area. The entire range of the Yuraygir sub-population is known to be from the Red Rock area to south of Maclean and west to around Tucabia. It is also known that the area from the Coast Range over the Pillar Ridge and to Crowsnest Swamp is an important fauna corridor (see page 55 of the Route Options Development Report (RTA, 2005)) and the records of Emu sightings indicate that they inhabit this area. The Report acknowledges that the Purple/B, Green/C and Red/D options would impact on the corridors in this area. The reference to the importance of breeding areas in the Sandon/Brooms Head area is a direct reference from the Scientific Committee Final Determination (2002) and does not imply that other areas are not important for this species. The majority of the Emu population is centred on Yuraygir NP for at least part of the year with the probable exception of two groups: the first group ranges the area south of Tucabia from the Coldstream River wetlands in the west to Pillar Valley and Yuraygir NP to the east. The second group is largely found on the agricultural lands and woodlands between Pine Brush and Candole State Forest in the south, and north to the Sandon and Brooms Head Road area.	262

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
432	The habitat of the coastal Emu has already been substantially reduced. Only 15% of that habitat remains and is situated in the Clarence Valley of Northern NSW. The only viable breeding group is found south of the Clarence River. It contains approximately 100 individuals with breeding pairs being only a fraction of this total. Only 15% of the habitat of this species remains. Further encroachment into this last refuge will spell local extinction. No highway route should traverse the Coastal Emu habitat under any circumstances. The Purple/B, Green/C and Red/D options dissect the Emu territory lengthwise, effectively halving it in a north/south direction, and are unacceptable. The Emu is of national significance and warrants being treated as a special case.	The presence of the coastal Emu and the small size of the population is known and has been raised during ecology focus group meetings and in discussions with local residents, as well as with DEC. The Threatened Species Conservation Act, 1995 requires, in the first instance, consideration of the likelihood of significant impacts on the Emu population, and further detailed assessment should the initial assessment indicate that significant impacts are likely. The process includes consideration of the effectiveness of mitigation measures in reducing the impacts on the viability of the species. It is considered that the Green/C and Red/D options have the potential to fragment and potentially isolate a significant portion of the habitat known to be used by this population. This in itself may not directly result in the loss of the population but may contribute substantially to the cumulative impact on habitat availability, along with impacts from other future development and activity within the Emus' habitat. As more clearing and development occurs, the population would become extremely vulnerable to stochastic events such as drought and bushfire and create a high risk of fragmenting the population into smaller less viable units that would be further at risk as a result of other pressures such as road strike and predation. The Purple/B option (between Tucabia and Pillar Valley) dissects a passageway used by the Emus for access to the Coldstream River wetlands, which have been identified as locally significant habitat for the sub-population, particularly during drought and within the pre and post breeding stages. This would have direct impacts on a proportion of the population, residing in the Tucabia and Pillar Valley area and may lead to a long-term reduction in numbers. Mitigation in the form of suitable crossing structures is required, and large bridges incorporated in the design of the Purple/B option at the crossing of the Coldstream River may prove effective as crossings for the Emu. However, if this is not the case and it is assumed that access to the wetlands would be prevented by the Purple/B option, this has the potential to contribute to reduced viability of the population. The comparative risk of substantial impacts from the Purpl/B option is however, substantially less than for the Green/C and Red/D options, as the area of habitat to which access would be restricted is substantially less, and access to the Shark Creek wetlands and Yaegl Nature Reserve would be retained.	163, 175, 262, 266, 268, 275, 299, 305, 342, 357, 359, 376, 409, 439, 459, 465, 483, 515, 516, 604, 950, 1017 , 1142, 1331, 1535, 1632, 1850, 1855, 1866, 1887, 1909, 1924, 1953, 1978, 1983, 1991, 2032, 2072, 2077, 2078, 2080, 2081, 2086, 2088, 2092, 2093, 2094, 2106, 2117, 2120, 2127, 2130, 2135, 2137, 2147, 2153, 2165, 2168, 2173, 2176, 2177, 2186, 2188, 2189, 2190, 2191, 2192, 2196, 2205, 2206, 2210, 2217, 2223, 2236, 2238, 2239, 2240, 2242, 2244, 2245, 2247, 2248, 2260, 2261, 2265, 2268, 2271, 2277, 2287, 2294, 2301, 2307, 2308, 2312, 2313, 2321,2322, 2322, 2323, 2328, 2328, 2331, 2332, 2333, 2334, 2336, 2343, 2349, 2353, 2368, 2374, 2378, 2381, 2390, 2401, 2402, 2408, 2410, 2412, 2414, 2415, 2421, 2422, 2423, 2424, 2425, 2426, 2431, 2444, 2447, 2453, 2459, 2460, 2474, 2480, 2493, 2497, 2500, 2500, 2512, 2558, 2560, 2570, 2566, 2592, 2566

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
433	Emus will walk back and forwards along a fence-line for a few days even though there is an open gate available for them to pass through. They will run alongside a car then almost always turn in front. There is no way they will adapt to a Motorway because of the difficulty in accessing fauna crossings and potential for injury from fences.	Behavioural characteristics of the Emu are an important consideration in the assessment of potential effectiveness of mitigation measures including fencing and fauna crossings. Fencing would be used in known habitat areas to prevent Emus from entering the road carriageway. The RTA will continue to investigate the potential for inclusion of suitable fencing and crossings in the design of the preferred route for the project. This would include consideration of the likely effectiveness of underpasses or overpasses and types of fences in catering for the needs of the Emus in the area.	163, 1953
434	The coastal Emu wanders over a vast area and plays a vital role in seed dispersal which affects the sensitive biodiversity within the area. Removal of the Emu from this area may also be destructive to other flora and fauna species.	The role of the Emu in seed dispersal is acknowledged in the NSW Scientific Committee Final Determination to list the coastal Emu as an endangered population. Measures to maintain access to the current habitat range of the population will be investigated as part of the ongoing assessments for the preferred route.	163, 1953, 2592
435	Emus also roam on the floodplain and are not restricted to Pillar Valley or Gulmarrad areas but have been seen regularly in large groups on sugar cane fields adjoining the highway at Shark Creek and Tyndale.	The known range of the Emu population in the west of the study area extends to the Pacific Highway in the area around Townsend and south to Shark Creek. The range of the Emu population extends across much of the eastern portion of the study area, as evidenced by the distribution of records collected by the DEC and the project team indicated in the Preferred Route Report. The entire range extends from the James Creek area in the north to Red Rock in the south and west to at least Tucabia and the floodplain around Ulmarra. The existing Pacific Highway and the Clarence River form the western boundary of the Yuraygir sub-population.	180, 356, 2154, 1583, 2390,

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
436	I have received a circulation from a pressure group opposed to the eastern options for the Highway upgrade. Enclosed was a form letter opposing the eastern routes because of the effect it would have on the Emu population. This stance is hypocritical because local people have contributed to impacts on the Emu through clearing residential blocks, erecting fences, building houses and sheds, owning dogs and cats, local road construction and associated increases in traffic volumes.	The NSW Scientific Committee final determination to list the coastal Emu as an endangered population identifies a range of threatening processes including: ▪ Deliberate killing through poisoning or shooting. ▪ Risk of local extinction due to small population size and isolation. ▪ Clearing and fragmentation of areas of habitat for agriculture and urban development. ▪ Burning of suitable habitat at too frequent intervals. ▪ Predation of young and eggs by foxes, feral and domestic dogs and feral pigs. ▪ Being hit by vehicles. The impacts of the proposed route options must be considered in combination with other threats to the survival of the population.	425, 1897
437	Fencing the highway to prevent Emu access will make them vulnerable to predators such as dingoes and wild pigs.	Potential predation of the species is an issue to be addressed through recovery planning for the population, which is the responsibility of the Department of Environment and Conservation. However, consideration would be given to design measures to minimise the increased risk of predation as a result of the project.	1795
438	The loss of endemic flora and fauna as a result of upgrades in particular those species and communities listed in the NSW Threatened Species Conservation Act or the Commonwealth Environment Protection & Biodiversity Act is a primary concern, in particular the effects of habitat loss and fragmentation including isolated and limited breeding populations, interbreeding and loss of genetic diversity, road kill, migratory displacement.	Concern in relation to the ecological impacts of the route options is noted. The assessment of impacts of the route options to date has addressed issues of threatened species, habitat loss and fragmentation, and other related issues. The assessment of these impacts will continue to be refined as the project progresses and are an important consideration in the selection of the preferred route.	266, 268, 305, 362, 417, 470, 1955,2032, 2128, 2234, 2328, 2350, 2375, 2466, 2592
439	The property "Alternifolia Wetlands" and surrounding locations are definitely to be considered as critical habitat for threatened species under the TSC Act 1995.	Review of the register of critical habitat declarations and recommendations under the *Threatened Species Conservation Act, 1995* (http://www.nationalparks.nsw.gov.au/npws.nsf/) indicates that there has been no listing or recommendation of critical habitat in the study area to date (as at March 2006). However, the habitat values of the study area for a wide range of threatened species are recognised.	466

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
440	The following key threatening processes, listed under the *Threatened Species Conservation Act, 1995* have not been addressed in the report: ■ Clearance of native vegetation. ■ Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands.	Statutory requirements to assess threatening processes relate to the assessment of the preferred route, but are a consideration in the development and assessment of route options. Further assessment following the release of the Route Options Development Report (RTA, 2005) has included calculation of the area of native vegetation to be cleared for each route option based on vegetation community mapping obtained from the Department of Environment and Conservation. The results of this are as follows: ■ Orange/A option: 125 hectares ■ Purple/B option: 290 hectares ■ Green/C option: 290 hectares ■ Red/D option: 270 hectares ■ Tyndale connection: 27 hectares ■ Shark Creek connection: 40 hectares The design of the preferred route will minimise potential to alter flow regimes in rivers and streams, floodplains and wetlands to reduce the impact on flooding and hydrology.	268, 537
441	My property is home to a range of native species including the coastal Emu and various other birds, mammals, amphibians and reptiles, many of which are threatened. The habitats of many threatened species such as Jabirus will be severely impacted by the Purple/B, Green/C and Red/D options.	The assessment of impacts of the route options on threatened species has included consideration of potential impacts on a range of habitats including wetlands and remnant bushland on private land and within State Forests and other reserves. The assessment of these impacts will continue to be refined as the project progresses. Impacts on threatened species is one of the considerations in the selection of the preferred route.	175, 266, 382, 483, 604, 949, 1011, 1535, 1632, 2073, 2265, 2355, 2427, 2444, 2497
442	The Purple/B option impacts on endangered wetland vegetation and fauna habitat and would have a high level of ecological impact.	The ecological impacts of the Purple/B option include the potential for impacts on endangered ecological communities within the floodplain and impacts on fauna corridors and high value habitat areas. The Purple/B option impacts on endangered wetland vegetation particularly around the Coldstream River and Shark Creek.	178, 262, 949, 1924, 2080, 2086, 2094, 2127, 2130, 2135, 2137, 2145, 2159, 2165, 2168, 2176, 2177, 2186, 2188, 2205, 2206, 2210, 2223, 2236, 2239, 2242, 2244, 2261, 2268,2313, 2328, 2343, 2353, 2365, 2374, 2378, 2401, 2402, 2423, 2431, 2480, 2493, 2512

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
443	Detailed species lists or information on the presence of species within the study area were provided from individual properties and other sources in the local community.	Species lists and other information provided by property owners have been included in the assessment of the route options and are a consideration in the assessments leading to selection of a preferred route for the project.	247, 262, 270, 305, 466, 1017, 1331, 1909, 2096, 2231, 2276, 2320, 2391, 2406, 2417, 2418, 2420, 2430, 2438, 2486, 2505, 2506, 2507, 2602,
444	Examples of species found on individual properties and the local area were provided.	Refer to response to issue number 443.	163, 174, 271,289, 322, 350, 372, 417, 420, 470, 479, 483, 486, 516, 521, 622, 1989, 1998, 2106, 2175, 2234, 2308, 2318, 2360, 2440

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
445	Section 5.3.4, 1st paragraph page 49 states 'Given the size of the study area, investigations have focussed on providing a general understanding of ecological conditions, as a basis for assessment of the route options'. The approach appears to be to defer detailed investigations until after a preferred route is selected. Figure 5.8 shows vast areas of land along the eastern options which have no or few endangered ecological communities yet have vast areas of natural bushland which are likely to represent these communities particularly moist open forests, swamp forests and fresh water wetlands, e.g. around Firth Heinz Rd and Chaffin Creek. The high level of uncertainty posed by incompleteness of this data and other scientific data should warrant further targeted investigations. The level of detail on threatened species and endangered ecological communities and their likely occurrence in the report is insufficient and inconsistent between the options. The report understates the significance of forests along the option D and the likelihood of Endangered Ecological Communities. The impacts on waterways should not be just said to be similar to the green option. Where is the detail needed for proper assessment of these options? Important fauna habitats in Pillar Valley are not identified.	The focus of investigations to date has been to gain sufficient information on the ecological conditions of the study area to enable differentiation of the impacts of the route options. Information on the presence of threatened species, value of habitats, extent of native vegetation and presence of endangered ecological communities is sufficiently detailed to enable this assessment to be made. The intent of the investigations has not been to provide detailed information on the ecological features of the study area, but to enable assessment of the route options. The information available to the project team has been sufficiently detailed to enable comparative assessment of the impacts of the options. Areas particularly in the east of the study area have been identified as high value habitats in recognition of the importance of remnant vegetation of all types that is present in these areas. The Biological Working Paper (RTA, 2006) and Preferred Route Report (RTA, 2006) provide detail in relation to the forests and foothills along the Coast Range, Shark Creek Range and Pillar Ridge. These habitats comprise a greater density of mature trees and higher structural and floristic diversity and thereby provide high quality key habitats particularly important for populations of threatened species. These forests are also recognised as contiguous with and similar in quality to Yuraygir National Park and as such provide significant opportunities for wildlife movement. The mapping of high quality habitats has been updated since the Route Options Development Report (RTA, 2005) was released and the updated information is reported in the Biological Working Paper (RTA, 2006) and the Preferred Route Report (RTA, 2006).	174, 247, 262, 275,2106, 2420, 2438, 2505, 2506, 2507, 2558

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
446	The Route Options Development Report does not include a map of designated key habitats and regional and subregional corridors. This information could have been included in Figure 5.8. There is no indication of threatened plants and animals recorded or likely to occur in the study area. While the location of EECs is mapped, their differentiation is not - a simple key would suffice. An appendix that lists fauna and flora species recorded during recent and past surveys undertaken in or near the study area would be useful.	Mapping of key habitats and regional and sub-regional corridors has been ongoing since the release of the Route Options Development Report (RTA, 2005) and is included in the assessment. Results of this mapping were provided to the Value Management Workshop. Lists of threatened species were produced for the Route Options Development Report (RTA, 2005) but not reported in it. The Route Options Development Report (RTA, 2005) focussed on rare, threatened and significant flora and fauna. A full list of all flora and fauna recorded in the study area was not considered necessary in the context of assessing the various routes. Complete species lists if available are generally included within a flora and fauna section of a final Environmental Impact Statement. These lists are subject to continual updating and a version was provided to the Value Management Workshop, along with mapping. Updated species lists, including threatened and regionally significant species, are provided in the Biological Working Paper. The mapping of EECs has been substantially updated since the Route Options Development Report (RTA, 2005) was released to include better definition of boundaries, differentiation between the various listed communities and assessment of the condition of remnant EECs. This updated information is included in the Biological Working Paper (RTA, 2006) and the Preferred Route Report. (RTA, 2006)	174, 262, 275, 299, 305, 2032, 2379
447	I am aware that RTA / SKM commissioned Greg Clancy (a local ecological expert) to undertake a study. However, there is no mention of this in the Route Options Development Report, as to the terms of reference, physical extent or results, or if the work has been completed.	Mr Greg Clancy has been commissioned as part of SKM's ecology team to provide advice and input to the ecological investigations for the project. As Mr Clancy is part of the project team, his contributions are not separately identified. To date his involvement has included provision of records of threatened species, advice on ecological conditions in the study area, participation in field work, participation in Ecology Focus Group meetings and review.	174, 380

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
448	The RTA appears to be confused as to the extent of conservation zoned State Forest affected by the Green/C option. Page 127 of the Report refers to 4.8 ha., whereas Pages 125 and 153 refer to 9 ha. There are two distinct provisions of the Forestry Act (as amended) which relate to this issue: ■ Section 19 provides that revocation of any area of State Forest greater than 20 ha. requires a Resolution of State Parliament. ■ Separately and independently, Section 21A provides that revocation of any area of Special Management Zones of State Forest greater than 20 ha. requires an Act of State Parliament. Irrespective of the contradictory figures in The Report, based on a footprint 250 metres wide per RTA's Interactive Grid Maps, I have assessed the area of Pine Brush and Glenugie State Forests which would be required to be revoked for Green/C Option as 28.4 ha.- approx 42% above the limit imposed by Section 19 of the Forestry Act without a Resolution of State Parliament.	Impacts on Forest Management Zones 1, 2 and 3A for the Green/C option total approximately 5 hectares (based on a 100 metre wide road reserve) and these impacts are within both Glenugie and Pine Brush State Forests. Section 19 of the *Forestry Act, 1916* enables the Governor to revoke declarations of State Forests following passing of resolutions by both houses of the NSW Parliament. However, section 19B of the Act enables the Minister for Primary Industries to revoke the declaration of an area of State Forest of less than 20 hectares where that land is required for a public purpose (within the meaning of any other Act). This specifically includes revocation of declarations in relation to special management zones. Section 19B would apply to roads constructed and operated under the *Roads Act, 1993*. The RTA is required to comply with all relevant statutory requirements, and if necessary would seek a revocation by the Minister of the declaration of land as a State Forest where greater than 20 hectares of land within a State Forest is required for the preferred route. Similarly, while the area of special management zones to be impacted for any option is substantially less than 20 hectares, the RTA is still bound by the provisions of section 21A should it need to occupy more than 20 hectares of land to which this section applies.	174

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
449	Inadequacies in the Route Options development Report include: ■ Identification of important aquatic habitats, without quoting sources. ■ Failure to include aquatic habitat impacts in the summaries of options. ■ Suggestions that wild fires have contributed to a decline in ecological values in some areas. ■ Failure to fully describe the impacts of the Red/D option, in stead referencing the impacts of the Green/C option.	The information in the report comes from field studies, literature reviews, desk top studies and consultation with relevant agencies, local ecologiests and landholders. Additional information is available in the working papers for the project released as part of the Preferred Route Report. The summaries of impacts relate to key potential impacts of each option, and are not comprehensive assessments of the options. Wild fires are part of the natural process of the Australian bush, but can also lead to reductions in species diversity and localised extinction of some species. Other submissions refer to the impact of fires on local populations of some species. The discussion of impacts of the Red/D option was limited to locations where it follows a different route from the Green/C option, for the sake of brevity of the report. The Route Options Development Report (RTA, 2005) states that the impacts of the Red/D option are the same as the Green/C option in sections where they share a common alignment.	262
450	A commitment was made at the Ecological Focus Group meeting on 7 November to provide fauna lists and access to a study on the effectiveness of wildlife crossings to environment groups. Such information would have been of great assistance to environment groups in comparing the options. Why was this information not provided so that environment groups could use it in completing their submissions?	Information was provided to participants of the Ecology Focus Group meeting as requested. The information was also made available for the Value Management Workshop and was considered in the selection of a preferred route.	299, 2032
451	Based on the information available, the Orange/A option is likely to have the least potential to adversely impact on the ecology of the study area. It will minimise disturbance of SEPP 14 freshwater wetlands and estuarine communities, riparian ecosystems, key habitats and wildlife corridors, threatened plant and animal species and populations, endangered ecological communities (EECs), high conservation value (HCV) and remnant native vegetation, and landscape structure and function.	The findings of the assessment of the route options to date are consistent with the conclusion that the Orange/A option presents the least potential risk to the ecological values of the study area in terms of habitats and corridors, EECs, threatened species and remnant vegetation. However, as noted in other submissions, the Orange/A option still does have the potential to impact on ecological values.	163, 262, 275, 305, 347, 350, 362, 409, 439, 465, 524, 599, 604, 920, 1076, 1347, 1349, 1868, 1953, 1975, 2032, 2082, 2106, 2202, 2219, 2269, 2277, 2329, 2330, 2360, 2369, 2379

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
452	The Orange/A option will potentially impinge on EECs on the Clarence River floodplains - Swamp Sclerophyll Forest, Swamp Oak Floodplain Forest, Subtropical Coastal Floodplain Forest, and patches of Coastal Saltmarsh, and may affect the foraging habitat of the threatened Black-necked Stork at, for example, Cowper Swamp south of Ulmarra. Significant remnant trees are also present along this route, which provide habitat for a range of species.	The Orange/A option does have the potential to impact on some habitats and remnants of Endangered Ecological Communities on the floodplain as well as wetland habitats of endangered bird species. This comment has been noted by the study team and is consistent with assessments completed to date.	160, 2246, 2333, 2342, 1909, 2263, 976, 1885, 289
453	The Orange/A option has the greatest impact on conservation reserves. However, all options have the potential to impact on Yaegl Nature Reserve and indirectly on the Yuraygir National Park, Yuraygir State Conservation Area and Mororo Creek Nature Reserve. The Wells Crossing Flora Reserve is also potentially impacted by all options. These areas should be avoided as they have been reserved for conservation purposes.	Reserves under the National Parks and Wildlife Act are identified as having a high level of constraint and options have been designed to avoid or minimise impacts on these. The Orange/A option and Purple/B option have the potential to impact on the Yaegl Nature Reserve, although impacts may be avoided or at least minimised through further refinement of the design. Other reserves are unlikely to be impacted by any of the options.	125, 299, 1955
454	The study area includes part of the largest tract of intact coastal bushland in NSW. A high diversity of species and many rare or threatened native species are found in the areas dissected by the easterly options. The footprint of a six lane motorway would dramatically scar the landscape and destroy native fauna. Only approximately 100 coastal Emus remain. This alone presents a strong reason to preserve the eastern sections of the study area.	Refer to response to issue number 2.	160, 232, 244, 247, 266, 271, 275, 327, 348, 350, 354, 357, 376, 402, 426, 470, 483, 608, 954, 1017, 1037, 1144, 1331, 1868, 1887, 1978, 2096, 2106, 2177, 2220, 2236, 2272, 2276, 2277, 2297, 2303, 2311, 2318, 2320, 2334, 2349, 2368, 2381, 2390, 2391, 2406, 2408, 2410, 2414, 2417, 2418, 2420, 2430, 2439, 2463, 2484, 2486, 2505, 2506, 2507
455	The Green/C and Red/D options will destroy the beauty and serenity of the State Forests and bring the highway very close to hard-won areas of Yuraygir National Park.	The Green/C and Red/D options would impact on the Glenugie State Forest and the Green/C option would also impact on the Pine Brush State Forest. These options would also bring the highway closer to the Yuraygir National Park, however, it is unlikely to directly or indirectly impact on its ecological values.	174, 178, 1340, 2177, 2178, 2196

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
456	The eastern options would have extreme environmental impacts on the coastal strip, which is a valuable asset for the Clarence in terms of potential eco-tourism.	The extent to which the proposal would impact on potential ecotourism potential has not been quantified. However, regardless of which option is selected, substantial areas of the study area and surrounds would remain distant from the highway and would therefore retain potential for ecotourism developments.	2173, 2217,
457	The Orange/A option has the potential to cause damage to the lake at the end of Four Mile Lane where the Black Headed Jabiru often is seen feeding and rearing its young.	The comments are noted. Ongoing assessment of impacts will be undertaken to determine mitigation measures required to minimise the impacts as much as possible.	180
458	The North Coast Water Habitats Study (NSW NPWS, 2001) identified mosaics of water dependant habitats. It identified a clear dependence on the ongoing maintenance of hydrological connection in mosaics of water habitat such as those occurring on the eastern Floodplain. The filling of groundwater bearing surfaces with road fill and base causes not just hydrological disruption, but substantial disruption to organic nutrient exchange and distribution pathways in these high conservation value ecosystems. Road construction on floodplains involves the import of substantial volumes of material - all of different porosity, density and load bearing capacity to the original surface. The disruption to both surface and subsurface drainage is substantial with resulting mortality and shifts in vegetation community.	These comments are noted. Impacts on hydrological regimes have been addressed through the flooding and hydrology assessment undertaken to date for the project. Options that minimise the length of road through the floodplain generally present less risk of changes to hydrology and flooding.	268, 362, 537, 1611, 1707, 1998, 2379
459	The Purple /B option has ignored the environmental and ecological importance of a critical area of habitat surrounding Champions Creek.	The area around Champions Creek is broadly recognised, as part of the large tracts of native vegetation in the east of the study area, as having important ecological and habitat values. It is recognised that the control of runoff is more difficult in sensitive wetland areas. In order to minimise the impact of contaminants and pollutants on the surrounding watercourses, structural and non structural measures capable of controlling road run-off pollutants would be implemented. Pollution control measures can include (but are not limited to) gross pollutant traps, grass swales, sediment basins and constructed wetlands. Areas near watercourses could also be bunded to ensure no pollution can escape if an accidental spill occurs. These measures would be addressed as part of the preferred route option assessment and incorporated into Environmental Management Plans developed during construction.	174

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
460	Fine sediment from the fill used during construction will, in both the short term and long term, wash from the construction area and cause siltation of the Shark Creek swamp. Pollutants from construction vehicles, spills etc will also enter the wetlands. As the swamp is very close to sea level, silt and pollutants will not be washed through it along the Shark Creek. Siltation and pollutants will irrevocably damage the integrity of the swamp.	The RTA incorporates measures into the design of the project to minimise the potential for pollution of water both during construction and operation. The construction of the road would be subject to an Environment Protection Licence under the *Protection of the Environment Operations Act, 1997*.	537, 1611, 1707, 1998, 2379
461	The Orange/A option creates a threat to the wildlife and fauna that live off or along the Clarence River, particularly from spills involving toxic or hazardous cargo. The river is very important as a fish and prawn breeding area.	In order to minimise the impact of contaminants and pollutants on the surrounding watercourses, structural and non structural measures capable of controlling road run-off pollutants would be implemented. Pollution control measures can include (but are not limited to) gross pollutant traps, grass swales, sediment basins and constructed wetlands. Areas near watercourses could also be bunded to ensure no pollution can escape if an accidental spill occurs. These measures would be addressed as part of the preferred route option assessment and incorporated into Environmental Management Plans developed during construction.	305, 628
462	The Purple/B, Green/C and Red/D routes will all have either a direct or indirect negative impact on SEPP 14 wetlands. The Government of NSW has an obligation to defend it's own SEPP 14 policy and this means that there are actually fewer viable options for the road route than those put forward to the public.	SEPP 14 wetlands are recognised as a constraint because of their ecological values. However, SEPP 14 does not prevent projects from impacting on identified wetlands, but establishes a more rigorous process for assessment that recognises the values of the wetland. It should be noted that SEPP 14 wetlands were considered a major constraint to the route option develoment and are for the most part avoided by the route option alignments.	163, 266, 299, 305, 466, 537, 949, 1037, 1355, 1611, 1707, 1953, 1998, 2075, 2077, 2093, 2096, 2174, 2229, 2379, 2409, 2433
463	The route of The Green/C and Red/D options through Pillar Valley Creek destroys pristine aquatic habitat. This is an extremely high flow area. It would be better to place this section to the west of Pillar Valley.	The ecological values of the Pillar Valley Creek and hydrological regimes in this area have been considered in the development of the route options. The Pacific Highway Program objectives and the specific project objectives form the basis for the identification of options and for their evaluation. The route options are considered using a range of criteria encompassing functional (engineering), social, economic and environmental aspects. In this context, the preferred route will be the one that, 'on balance', meets these criteria, while taking costs into consideration.	2322, 2446, 2473

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
464	The Purple/B option impacts on endangered wetland vegetation and fauna habitat. The Green/C option dissects the Tyndale wetlands near Shark Creek, known to contain least four endangered ecological communities and habitat of numerous other threatened flora and fauna species. Other wetlands in the James Creek area would be affected by the Green/C and Red/D options. Impacting on fauna habitats and wetlands is not acceptable.	The Purple/B option, Green/C option and Red/D option so have the potential to impact on on wetland vegetation including endangered ecological communities. This comment is noted by the study team and is consistent with assessments completed to date. These potential impacts are an important consideration in the route selection process.	163, 231, 305, 393, 426, 1352, 1357, 1924, 1953, 1983, 2080, 2086, 2094, 2121, 2127, 2130, 2135, 2137, 2145, 2159, 2165, 2168, 2176, 2177, 2186, 2188, 2205, 2206, 2210, 2223, 2236, 2239, 2242, 2244, 2245, 2261, 2268, 2313, 2328, 2334, 2343, 2353, 2365, 2368, 2374, 2378, 2388, 2401, 2402, 2408, 2409, 2410, 2423, 2426, 2431, 2444, 2476, 2480, 2493, 2512
465	Flora will be disturbed during construction, but will have the opportunity to recover within road verges and medians. If this land is left for private enterprise, it will most likely eventually be opened up for residential development.	Part of the design of the preferred option would be landscaping using indigenous species where possible. Areas of the road reserve would be allowed to regenerate naturally. However, it is not appropriate to speculate that land may be developed and use this as justification for the proposed road. The impacts of the options must be assessed on their merits.	227
466	The Purple/B option will impact on fauna west of Pillar Valley. However, this could be overcome by a program of relocation of species to other areas prior to work commencing. This has been done before with great success.	The ongoing investigations that would be undertaken for the preferred route would include idenfitying the impacts to fauna (and other social, environmental, functional and economic factors) and determining the appropriate measures to minimise the impact as much as possible. Relocation of fauna may be one of the mitigation measures considered.	437
467	The Red/D option seems to not affect forest and national parks to a great extent.	The comment is noted.	1493, 2371
468	The arguments in relation to impacts on wildlife are irrelevant, as many people who are objecting to the route options have destroyed more wildlife by clearing the bush for houses than would be destroyed by the Highway.	Other human activity has contributed to impacts on wildlife. However, the impacts of the route options must still be assessed on their merits, in the context of other pressures.	1897

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
469	The noise from construction equipment and from road traffic will travel directly into the swamp and will impact on all the fauna in the area. The net outcome will be that the bird life will vacate the swamp to reach less noisy areas. This comment is also valid for the Pine Brush State Forest.	Construction impacts are likely to be short term only, but may potentially impact on the habitat of some species. However, evidence from other studies is that birds and wildlife are generally relatively resilient to noise impacts. This is particularly demonstrated by the use of wetlands close to the existing highway (such as near Cowper) by a range of bird species. Following construction, birds and other animals would be expected to re-colonise areas relatively close to the road over time.	362, 537, 1611, 1707, 1998, 2379
470	The property at 198 Gardiner's Road, Maclean has been used as a release site for injured and orphaned native wildlife and suits this purpose due to its mix of bush and grazing land. A large and diverse group of native animals live in this area. As many as five or six mobs of the local Eastern Grey Kangaroo population graze here in the late afternoon. The Green/C option takes in part of the property at 208 Gardiners Road, and would block access to this valuable habitat from the east, where a large majority of these animals come from.	The RTA will continue to investigate the potential for inclusion of fauna crossings in the design of the options and the preferred route for the project. This would include consideration of the likely effectiveness of a range of different crossings (such as underpasses or overpasses) in catering for the needs of a range of species known to inhabit the area.	350
471	Yuraygir National Park and adjacent State Forests are key habitat areas. However, adjoining areas on private land serve as fauna nurseries to enable wildlife to gradually move back into the areas and utilise different habitats during events such as fires and droughts. Areas such as Pillar Valley and the surrounding locales are all part of an integrated forest system.	The relationship between the National Park, State Forests and areas of habitat value on private land is particularly important in the study area and surrounds. These issues have been considered in the development and assessment of the route options through consideration of impacts on fauna corridors and areas of high habitat value.	1868
472	I have done research and a pilot study on the edge effects of disturbance on flora and fauna. In relation to the latter in particular it appears that the disturbance factor, even from small walking tracks, extends for considerable distance. A highway will have a significantly high level of disturbance; more than 100 metres either side of any proposed realignment even in densely vegetated areas. It would be reasonable to calculate any major disturbance at least as 250m (200m habitat disturbance zone plus width of highway works) multiplied by the length of road works.	Edge effects arising from the creation of a new road corridor through areas of remnant vegetation would be likely. However, the extent of effects is dependent on a wide range of factors including topography, other land uses and the implementation of management and mitigation measures. Impacts of the route options on high value habitats have been calculated on the basis of potential direct clearing of a 100 metre wide road reserve, and this is appropriate for the purposes of comparing the impacts of the options.	2387
473	Hollow-dwelling species would be particularly vulnerable during the clearing process. We ask that the RTA recognise this, and have a contingency plan to appropriately collect any such wildlife displaced by clearing operations, and have them come into the care of WIRES.	Environmental management measures for construction would include measures to prevent impacts on hollow dwelling species where required. The offer of assistance from WIRES is noted and would be considered by the RTA as part of the construction contract requirements.	2438

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
474	Careful consideration needs to be given to the choice of plants to revegetate the roadside areas. Some shrubs and flowering trees seasonally attract both birds and mammals down to the roadside making them vulnerable to collisions with motor vehicles.	Species selection for revegetation would be considered as part of the detailed design of the project.	2438
475	As most of the blocks on Four Mile Lane between the Pacific Highway and Tancred's Lane retain good tree cover, they constitute a valuable habitat and corridor which will be increasingly important over time. The property is used for release of rehabilitated animals, when this is appropriate. If the highway upgrade were to cross our block and others then it would undo our conservation objectives and remove an important environmental resource.	The RTA will continue to investigate the potential for inclusion of fauna crossings in the design of the options and the preferred route for the project. This would include consideration of the likely effectiveness of a range of different crossings (such as underpasses or overpasses) in catering for the needs of a range of species known to inhabit the area.	270
476	If the upgrade proceeds, and whatever option is chosen, there should be appropriate and considerable compensatory habitat provided. This should be in the form of further protected land. Pine Brush State Forest may be appropriate because of its important ecological values. However, as State Forests is apparently planning extensive logging of this forest (perhaps because there is a desire to harvest timber before the highway upgrade goes ahead) we are concerned that much of the ecological value of this area may be degraded.	The need for compensatory habitat would be considered and determined for the preferred route. Appropriate locations in and around the study area would be identified and secured through the most appropriate means. Issues associated with the environmental impacts of forestry operations are outside the scope of assessment for this project.	299, 1955
477	On the 14th April 2000 we entered into a management contract with the Department of Land and Water Conservation. The Department identified a riparian habitat that is of significant environmental value, which meanders through the middle of our Four Mile Lane property and is dependant on the surrounding catchment area to provide unpolluted water to this zone. The proposed Highway passes directly through this riparian zone and would put us in breach of our contract with the Department of Land and Water Conservation.	Should the Orange/A option be selected as the preferred route for the project, further assessment of potential impacts on the land subject to the Voluntary Conservation Agreement would be undertaken. proposed mitigation measures for any land requiring direct acquisition would take into account the nature of existing contractual arrangements.	887
478	The impacts of the Orange/A or Purple/B options on the Yaegl Nature Reserve would be less significant than the impacts of options which dissect Pine Brush and Bom Bom State Forests, wetlands and Glenegie State Forest.	The comment is noted.	2226, 2227
479	The Green/C and Red/D options both affect the Yaegl Reserve. The Orange/A and Purple/B options do not have any effect.	It is not clear from this comment how these options would impact on the Yaegl Nature Reserve. The Orange/A and Purple/B options have the potential to directly impact on the Yaegl Nature Reserve.	2312, 2441

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
480	Going through Pine Brush State Forest is totally unacceptable as it would fragment the values of this area and increase exposure and weeds. There is not enough remnant forest, especially moist, lowland/dry rainforest left.	The ecological values of Pine Brush State Forest are not necessarily higher than impacts on private land. Remnant vegetation on private land also has ecological values. The preferred route alignment is designed to minimise all impacts as much as possible. Where possible, alignments may be refined to further reduce impacts.	2321
481	There is no mention or costing of any possible compensatory habitat.	Compensatory habitat requirements have not been costed at this stage of the project as exact requirements would depend on the option selected, the specific impacts of the option and negotiations with relevant government agencies; however an allowance has been made for environmental mitigation measures in the project cost estimate.	268
482	Clarence Valley WIRES requests that funds be set aside to cover the rescue and rehabilitation cost of any animal injured, orphaned or displaced during the construction of the highway. These costs may include the provision of large animal enclosures suitable for macropods and/or emus, fees for veterinarian services, and food costs for animals requiring long-term care etc.	During construction the contractor will be responsible to ensure injuries to animals are minimised and that relocations are undertaken appropriately. This could include management measures such as: ■ Stage clearing to reduce injury and risk. ■ Inspection of hollow trees etc and relocation of any fauna found. ■ Arrangements and/or funding with organisations such as WIRES to assist in the relocation of fauna. ■ Ongoing consultation with agencies such as DEC.	2438
483	Diesel fumes contain large amounts of fine particles. Some plants and animals are particularly sensitive to fine particle pollution. Lichens, for example, are often among the first life forms to be affected, while particles can cover the leaves of larger plants and damage their ability to photosynthesise.	Concentrations of air pollutants are unlikely to be sufficiently high to result in impacts on flora communities. Roadside vegetation typically shows little sign of affectation by air pollution, even in urban environments.	362
484	Nature cannot always be replaced, Motorways can. Is a Motorway worth risking the life of nature? If you look after nature, nature will look after you.	The comment is noted.	376, 1224, 2152
485	During the night lights from vehicles will shine into the forest of the swamp. This will disturb the fauna, and potentially change the species distribution from that naturally occurring now. Lights will also impact on the feeding ability of forest owls.	Consideration has been given to the potential for the options to impact on habitat values, including swamp habitats. The potential for changes to habitat values in some locations is recognised in the assessments undertaken to date.	268, 362, 537, 1998
486	The road will provide a vector for the infiltration and invasion of the wetland by weeds. Natural rainfall will wash seeds dropped off vehicles on the road into the swamp. This will alter the flora of the area.	Weed management is an important consideration in the construction and operation of the road. Measures to control weed spread would include maintenance and weed eradication. However, the road would increase the potential for weeds to establish in surrounding areas.	163, 537, 1611, 1707, 1953, 1998, 2379

Issue No.	Comments on flora and fauna	Response	Stakeholder ID
487	Why are we clearing trees to make a highway to burn fuel on in these times of global warming? Why not use the already cleared land we have a major road on and improve on that. We could even plant trees around the existing highway to try to offset some of the pollution we all create by using vehicles.	The route options include options that pass through largely cleared areas, as well as options that have a greater potential impact on remnant vegetation. Impacts on vegetation are one of the considerations in selecting a preferred route. Landscaping of the road reserve would include revegetation with indigenous species.	2311
488	We need to protect what we have left for future generations and for a future economy that depends on the inherent wealth of protecting natural environments.	The comment is noted.	2390, 2602,
489	Impact on Ramsar World Heritage listed wetland No 57 upper Coldstream of Purple B option. This area is of National and International conservation significance and should override options B, C and D.	No wetlands in the study area are listed on the Ramsar list of wetlands of international importance (ref http://ramsar.org/sitelist.pdf, viewed 04/04/06). No areas within the study area are listed as world heritage sites (ref http://www.deh.gov.au/heritage/worldheritage/, viewed 04/04/06).	169, 2321
490	I consider that the new highway should take the shortest, cheapest route but taken into account ecologically sensitive areas. The free movement of wildlife must be considered in the design or the road.	The Pacific Highway Program objectives and the specific project objectives form the basis for the identification of options and for their evaluation. The route options are considered using a range of criteria encompassing functional (engineering) The RTA will continue to investigate the potential for inclusion of fauna crossings in the design of the options and the preferred route for the project. This would include consideration of the likely effectiveness of a range of different crossings (such as underpasses or overpasses) in catering for the needs of a range of species known to inhabit the area.	2150
491	Regular hot fires (often in Yuraygir National Park) have a significant impact on the local ecology. The Red/D option will help in containing these fires by providing a "firebreak". This will more than outweigh the fauna corridor impact.	While the Red/D option has the potential to act as a fire break and this may have some benefits for fire management, this potential benefit must be assessed against the impacts relating to habitat loss and fragmentation.	2257
492	The severe ecological impacts of eastern route options should be given upmost importance when assessing highway route options.	The comments are noted. The Pacific Highway Program objectives and the specific project objectives form the basis for the identification of options and for their evaluation. The route options are considered using a range of criteria encompassing functional (engineering), social, economic and environmental aspects. In this context, the preferred route will be the one that, 'on balance', meets these criteria, while taking costs into consideration.	247,2159, 2231, 2276, 2320, 2322, 2328, 2353, 2391, 2406, 2417, 2418, 2430,2486, 2499
493	To date no on the ground impact studies have been conducted.	Field work has been undertaken to date over two periods of 4-5 days each, in May and November 2005. Field investigations were undertaken earlier in the year and will be continued through the project.	2231, 2276,2320, 2391, 2406, 2417, 2418, 2430, 2440, 2486

4.3.19 Indigenous heritage

Issue No.	Comments on indigenous heritage	Response	Stakeholder ID
494	One of the two main Aboriginal groups which have pre-European ties to the Pillar Valley area was not consulted during development of the route options.	Since the release of the Route Options Development Report (RTA, 2005), the study team has had extensive consultation with the Garby Elders, including a meeting and two visits to the Pillar Valley and Glenugie Peak areas. Advice has been obtained on the significance of these areas and other parts of the study area to the Garby Elders community.	174, 262, 2106, 2207
495	The Green/C and Red/D options will destroy an Aboriginal burial ground - another era of the indigenous people's history would be lost and destroyed.	The site referred to is not specifically referenced in the submission. However, the assessment of heritage impacts does not identify any known Aboriginal burial sites as potentially impacted by these options. The Aboriginal community who were involved in the field assessment have not raised this issue. However, further detailed investigation would be undertaken to identify Aboriginal heritage sites following the selection of a preferred route, and measures would be implemented avoid these where possible.	1978
496	There are inconsistencies in the number of indigenous heritage sites directly and indirectly impacted by the Green/C option, between the assessment (p. 127), option summary table (p. 128) and final summary table (p. 153).	The impacts of the options on indigenous heritage items and sites of significance have been updated and are reported in the Preferred Route Report (RTA, 2006) and the Cultural Heritage Working Paper (RTA, 2006). The heritage information used in the selection of the preferred route included updates such as reference to the Maclean Heritage Study and on-going review of the data. This updated information is included in the Cultural Heritage Working Paper (RTA, 2006) and the Preferred Route Report (RTA, 2006).	262
497	The Purple/B, Green/C and Red/D options pass through beautiful Pillar Valley and in close proximity to sacred Aboriginal sites.	Further consultation with the Aboriginal communities that have interests in the Pillar Valley area have indicated that the Purple/B option presents a low risk of impacts on culturally significant sites. The Green/C and Red/D options have greater potential for impacts and will require appropriate management to preserve the cultural values of the area if they are found to be impacted.	2408, 2414
498	Have Local Aboriginal Land Councils been consulted in relation to the development of these options? Have the routes been constructed with reference to known sites of cultural heritage or significance?	The route options have been developed and assessed through a process that has included consultation with Aboriginal groups to identify sites and assessment their significance. The assessment has been undertaken in accordance with guidelines from the Department of Environment and Conservation.	2414

Issue No.	Comments on indigenous heritage	Response	Stakeholder ID
499	The over-reliance on the predictive model for Aboriginal cultural heritage sensitivity leads to confusion between actual and potential archaeological sites.	The predictive model is just one of a number of tools used in the assessment, along with other methods including field work and consultation with the Aboriginal community.	262
500	It is impossible for the reader to resolve the contradictory references to possible impacts, due to the paucity of information in the report. It neither maps indigenous heritage sites, nor gives clear descriptions of their relation to the various options, due to the withholding of information for "reasons of sensitivity to the local Aboriginal community". Some of the information used by the study team seems to come from information which is already in the public arena. If the Aboriginal people consulted by SKM asked that no location information be provided, the report should state this.	Consultation with the Aboriginal community included discussion of the appropriate level of detail in reporting the locations and other details of sites of significance. Representatives at the first Aboriginal Focus Group meeting in May 2005 specifically requested that the locations of sites not be shown on maps and that details not be included in publicly available reports. However, this information has been considered in the assessment of the route options.	262
501	The Route Options Development Report states that the Green/C option has the potential to directly impact on three sites containing Aboriginal artefact scatters.	Since the Route Options Development Report (RTA, 2005) was prepared the potential impacts on Aboriginal heritage sites have been reviewed and the Green/C option is assessed to have potential for direct impacts on one site of high significance and two sites of low significance.	483
502	The Aboriginal people have an interest in properties in Pillar Valley area.	The comment is noted.	521
503	The report focuses on specific sites or items that may be significant to the local Aboriginal community. However, there is a need to understand the importance of the indigenous cultural landscape as whole that includes locally significant features such as Pillar Valley Range, Bondi Hill and Shark Creek Range. Glenugie Peak and Pillar Rock have deep spiritual and dreaming significance, while Glenugie Peak is an important story site. Gumbaingirr men regard Pillar Rock and adjacent areas as highly significant sites. Other areas such as Pillar Valley Range and Glenugie Peak are important as travelling routes, have caves, or feature rock art. Statements made in the Route Options Development Report regarding, for example, the greater potential of floodplains to the west of the study area to be significant to Aboriginal people than the "forested coastal ranges and slopes of the eastern study area" should be reviewed. In fact, the floodplains and coastal ranges and slopes of the study area and the regional landscape are likely to be of high significance to Aboriginal people.	Ongoing consultation with the Aboriginal communities in the study area has revealed much about the significance of the landscape and the importance of the sites mentioned in the submission. These issues have been addressed in the assessment of the route options. The Route Options Development Report (RTA, 2005) states on page 68 that the floodplain topographies *in* the west of the study area have greater potential than the coastal ranges and slopes in the eastern side of the study area (our emphasis). This comment relates to the potential for archaeological sites to be present, and provides a useful broad scale generalisation about likely diversity and size of archaeological remains. It is not meant to infer that the coastal ranges and slopes have less potential to be significant to Aboriginal people. The report acknowledges that the whole study area has cultural significance to Aboriginal people and is considered to have high archaeological potential.	

Issue No.	Comments on indigenous heritage	Response	Stakeholder ID
504	Potential impacts on Aboriginal cultural heritage sites should thoroughly explored at the Value Management Workshop.	Aboriginal heritage issues were discussed at the Value Management Workshop. Representatives from within each Land Council boundary were invited to the VMW, along with by the RTA Aboriginal Program Consultant and officers of the Department of Environment and Conservation (which has statutory responsibility for Aboriginal heritage under the *National Parks and Wildlife Act, 1974*).	262
505	Local knowledge suggests that the predictive model referred to in the Route Options Development Report is likely to be flawed in predicting a greater likelihood of remains to the west of the study area. For example, long term residents have told me about Aboriginal camps towards the northern end of Pillar Valley around Chaffin Creek, which probably corresponds with an area identified as only “moderate to low” significance. Aboriginal tradition tells of migration between marine resources in summer and, in winter, the ranges for their shelter and food (Robinson 1965:27). In contrast, Navin Officer’s model focuses on floodplains rather than coastal ranges and foothills (Route Options Development Report p.68).	The predictive model has been used in conjunction with other tools to assess the Aboriginal heritage values of the study area. The mapping of the predictive model was presented at a broad level and provides only a generalised and small scale picture. The full text and description of the model, which was not reproduced in the Route Options Development Report (RTA, 2005), provides more detail and includes small scale topographic units and predictions. The model identifies valleys associated with large or permanent watercourses as having high potential. This would include Chaffin Creek, although the upper reaches of the creek are outside the study area. The model also identifies the valleys that bisect the coastal range as having high archaeological potential due to their probable uses as travel routes between the coast and the Clarence River valley. The detailed descriptions of the model also identify Lowland ranges, low ranges adjacent to and bordering the valley floor, as having high archaeological potential. This topography includes the ranges identified in the submission. In relative terms, the floodplain and its associated micro-topographies has a generally higher archaeological potential than the steeper slopes and ranges on the eastern side of the study area. However, given the nature of Aboriginal occupation of the study area, the slopes and ranges also have archaeological potential. Further detail is provided in the Cultural Heritage Working Paper (RTA, 2006).	262

4.3.20 Heritage

Issue No.	Comments on heritage	Response	Stakeholder ID
506	You should be aware the Harwood Island village is a significant historical river settlement and that Clarence Valley Council Heritage Officer, Deborah Wray, is currently involved in a heritage study. The study includes Maclean Shire area and has listed a number of sites and buildings in the Harwood Island village. I suggest these points be considered when making your decisions.	The study team has consulted with Council's Heritage Officer, who has provided a copy of the draft Community Heritage Study for Harwood and with relevant records from the overall review of heritage sites in the Clarence Valley area. These records have been considered in the assessment of the route options and will be an important factor in the ongoing assessment of route options for the section of the project between Harwood and Iluka Road.	356, 893, 1910, 1975, 2052, 2166, 2388, 2405
507	Many of the homes that will be affected or demolished to build the Orange/A option are heritage homes and have significance of being homes of early settlers to this region. If you demolish them you take away some of the region's past.	The comments are noted. The Route Options Development Report (RTA, 2005) identifies the Orange/A option as having the greatest potential to impact on European heritage of all the options.	180, 289, 628, 1001, 1783, 1855, 1870, 2148, 2275, 2279, 2428, 2429
508	Lack of consultation with known local "authorities" on non-indigenous heritage, resulting in omission of significant buildings and sites.	Consultation with relevant authorities has included Clarence Valley Council, individual property owners and reference to previous studies and other heritage lists.	174
509	In the absence of any references listed in the Route Options Development Report, the reader has no idea what, if any, anthropological sources have been consulted. There is certainly no evidence of any attempt to consult earlier sources such as Gerhardt Laves (manuscript held at AIATSIS), Archibald Meston (records held at John Oxley, State Library of Queensland) or A.R. Radcliffe-Brown (specifically his 1929 trip, cf. notebooks in the Elkin Archive, Fisher Library, University of Sydney).	The comments are noted. The references are appreciated and will be referenced for the cultural heritage assessment, which will be publicly available following the announcement of the preferred route.	262
510	There are inconsistencies in the reporting of impacts on non-indigenous heritage items for the route options in the Route Options Development Report.	Since release of the Route Options Development Report (RTA, 2005) the assessment of heritage impacts has been refined and updated.	262
511	16 sites have been identified as having "potential heritage significance" as they "are believed to be in excess of 50 years old". There is no clarity as to whether these sites have heritage status or not. How is the reader supposed to know which of the sites enumerated in the comparison table are confirmed heritage sites and which only "potential" sites?	The NSW *Heritage Act, 1977* classifies any item of greater than 50 years old as a relic and affords these items a level of protection. It is for this purpose that sites of potentially greater than 50 years old have been identified. A precautionary approach has been adopted in the identification of relics due to a lack of information in some cases. The presence of relics would be further considered for the preferred route, along with measures to avoid or minimise impacts on these where necessary.	262

Issue No.	Comments on heritage	Response	Stakeholder ID
512	The report provides little more than numbers, though we do at least get to see where about half the heritage sites are roughly situated in the study area. Nowhere is there a full list of places allowing the reader to assess whether the report has included heritage places known to him or her. Nowhere is there a discussion of how sites are ranked as “high”, “moderate” or “low” significance (p.153). Nowhere does the report explain what it means by saying specific route options will have a “direct” or “indirect” “impacts” on a specified number of sites.	The Route Options Development Report (RTA, 2005) provides a summary of the investigations undertaken to that point in relation to heritage items. Direct impacts are defined as where the route option has the potential to impact on the item directly (either in part or in whole), Indirect impacts relate to those that may affect the understanding of the context of the heritage item.	262
513	Green/C option may impact on the Bostock Water holes, which were part of a historical travelling route for cattle run from Coffs to Yamba. The surveyor Mr Bostock was speared by Aboriginals at the holes.	The comment is noted.	1037
514	Our property is situated in the path of the Green/C option which we feel has significant historical importance; it is gazetted on all topographical maps as a landmark and has been here for generations.	The comment is noted.	1866
515	Our house was built in 1892, classified as heritage with 2, 100 year old plus Bunya pine trees in front of dwelling and there are similar dwellings in the vicinity plus a quiet village.	The comment is noted.	1125
516	Ulmarra is also known for its history. Most of the buildings are Heritage Listed because of the first settlers making Ulmarra their home.	The comment is noted.	2105
517	Foster's Hut is on the map as a historical item. Is it a heritage item on any registers?	Foster’s Hut is not listed on any statutory heritage registers, but its historic significance is noted.	1866

Issue No.	Comments on heritage	Response	Stakeholder ID
518	Heritage listings of dwellings (already listed): i) Harwood Primary School, Harwood Village ii) Harwood Primary School Residence, Harwood Village iii) Residence at no. 18 Morpeth Street, Harwood Village iv) Residence at no. 86 Martins Pt Road, Harwood v) Church in Church St, Harwood Village vi) Residence, Church St. Harwood Village vii) Grand Stand, Cricket Oval, Harwood Village The following dwellings are pending heritage listings at Harwood: i) Police station, River St, Harwood Village ii) Water Brigade Hall, River St. Harwood Village iii) Post Office, River St. iv) Harwood Village Obviously, these heritage listed buildings will be affected by the building of a bridge / motorway through the village.	The listed heritage items within Harwood Village are noted and have been considered in the assessment of heritage impacts of the upgrade between Harwood and Iluka Road.	1975

4.3.21 Land use

Issue No.	Comments on land use	Response	Stakeholder ID
519	The Orange/A option would reduce the sustainability of land holdings due to increased fragmentation and would result in direct loss of prime agricultural lands.	Fragmentation and direct loss of prime agricultural land is identified in the Route Options Development Report (RTA, 2005) as an impact of a number of route options. The assessment of these impacts will continue to be refined as the project progresses. These impacts are considered as part of the selection of the preferred route.	491, 893, 1267, 2279, 2291
520	The Green/C and Red/D options will affect flood refuge paddocks.	It is understood from consultation with numerous property owners that land in hillier areas within the study area is used on a seasonal basis and during floods by farmers who also have land within the floodplain. The importance of flood free land and flood refuge areas is acknowledged.	647, 1535
521	The Orange/A option minimises impacts on farmland compared to the Green/C and Red/D options.	The Orange/A option would have a greater impact on prime agricultural land than other options, as the majority of prime land is within the floodplain. However, it is recognised that the other route options would also impact on agricultural land that serves important functions.	361, 2143
522	The project aims to minimise impacts to land use and to safeguard the future sustainability of the land.	The comment is noted.	1347
523	The ongoing viability and survival of the cane growing industry is dependent on the continued availability of prime land that is capable of producing sugar cane.	The comments are noted. Potential impacts on cane farms and on the cane industry have been considered in the assessment of the route options. Fragmentation and direct loss of prime agricultural land is identified in the Route Options Development Report (RTA, 2005) as an impact of a number of route options. The assessment of these impacts will continue to be refined as the project progresses. These impacts are considered as part of the selection of the preferred route.	316
524	Shale oil has been found beneath our property and this land use would be lost if the Orange/A option was adopted.	Further assessment of mineral and oil resources is being undertaken, including consultation with the Department of Primary Industries (Mineral Resources), to better understand the impacts of the options on resources.	1937, 898

Issue No.	Comments on land use	Response	Stakeholder ID
525	The area to the east of Maclean is the only area that will cater for the expansion of Maclean and district. The area has been among the fastest in the state, because people are just beginning to discover the area and the lifestyle that it offers. Both options [Green/C and Red/D] would have a huge impact on this expanding area.	Consultaton with Clarence Valley Council planning officers and the Department of Planning has been ongoing since the commencement of the project, so that the potential existing and future land use constraints are understood in the development of route options. Council planning officers have indicated that rural residential or rural small holdings are unlikely to be expanded substantially further east. The Green/C and Red/D options would therefore be unlikely to substantially limit future urban or rural residential development. These routes are consistent with Council planning requirements.	160, 342, 382, 483, 604, 2234, 2246, 2293
526	The Orange/A option will remove 465 hectares of the most fertile land in the Clarence Valley.	The comment is noted. Refer to response to issue number 523.	289
527	Land zoned for the preservation of wildlife and with potential to be part of a Voluntary Conservation Agreement with the National Parks and Wildlife Service is now being considered as part of the highway route.	The conservation values of much of the land within the study area have been documented in the Route Options Development Report (RTA, 2005) and considered in the assessment of the route options.	268, 2318
528	Impacts to private forest land should be better quantified as part of the investigation.	It is acknowledged that the route options could affect private properties currently being utilised (or having potential to be utilised) for selective logging. Many of these properties are contiguous with state forests and have high economic values. Since the release of the Route Options Development Report (RTA, 2005), further assessment of the clearing of native vegetation (on both private and public land) has been carried out. The results of that assessment are addressed in this report under issue number 444, in the responses to flora and fauna issues.	262
529	The Orange/A option would impact on the current river bank which is used as a flood free refuge.	The area close to the Clarence River (referred to as the terrace) is generally higher in elevation than land further away from the river, in the Coldstream Basin. The Orange/A option would directly impact on much of this higher ground. Consultation with farmers has indicated the importance of this land to the viability of agricultural production, particularly for dairy farmers and cane farmers.	530, 2279

Issue No.	Comments on land use	Response	Stakeholder ID
530	More detail is required regarding the specific land uses / management zones within the state forest areas and what the relevance would be to the choice of motorway route.	State Forest Management Zones identify within forests that are appropriate for harvesting, conservation, recreation, buffers or a mix of land uses. The impacts of the route options on these various management zones have been considered. Impacts on harvesting areas have been considered in the context of overall local economic impacts. Impacts on conservation and recreation zones have been considered in the context of ecological impacts and access to recreational resources for the community. Section 19 of the *Forestry Act, 1916* enables the Governor to revoke declarations of State Forests following passing of resolutions by both houses of the NSW Parliament. However, section 19B of the Act enables the Minister for Primary Industries to revoke the declaration of an area of State Forest of less than 20 hectares where that land is required for a public purpose (within the meaning of any other Act). This specifically includes revocation of declarations in relation to special management zones. Section 19B would apply to roads constructed and operated under the *Roads Act, 1993*.	262
531	The argument that government owned land cannot be used for these projects unless compensatory areas are made available rings rather hollow when there is no more prime agricultural land being created.	The impacts of the options on a wide range of land uses have been assessed. Government agencies responsible for the ownership and management of reserved land have established processes for determining compensatory provision where direct impacts would arise from the project. Similarly, the RTA is required under the *Land Acquisition (Just Terms Compensation) Act, 1991* to compensate affected rural land owners for loss of land and loss of productive capability, based on the market value of the land.	536
532	Lack of determination of the ultimate Highway reserve location and configuration creates considerable business hardship. Land within the 250 metre wide corridors is essentially frozen until further design work is done, and this impacts on future land use potential and current operations. This also puts commercial restrictions on the sale or development of land.	It is acknowledged that the announcement of projects such as these can affect the sale and development of land. The RTA is mindful of this in the timing of its processes. However it remains that there is a need to provide the community with information on the project. The identification of the preferred route will provide more certainty for planning and investment decisions with a reduced corridor width.	1267
533	A comprehensive freeway service centre would be required within the development of the Green/C or Red/D options.	The RTA agrees that it would be desirable for a service centre to be developed. However, decisions on land use matters are for the local government to make. The Clarence Valley Council will make this decision in accordance with Section 117 ministerial directions issued under the Environmental Planning and Assessment Act 1979.	1267

Issue No.	Comments on land use	Response	Stakeholder ID
534	The report omits the existence of the residential land use at Gulmarrad and James Creek due to reliance on the Clarence Valley Settlement Strategy, which dates from 1999.	The Clarence Valley Settlement Strategy is only one of a number of sources referenced in the land use impact assessment of the route options. The study team also sourced up to date zoning from the Maclean Local Environmental Plan and discussed current and potential future development issues with Council staff. The Gulmarrad and James Creek rural residential and rural small holdings zones are clearly shown on the zoning and land use maps used by the study team. Clarence Valley Council has advised that the Clarence Valley Settlement Strategy, 1999 remains the current Council policy in relation to future growth in residential and rural residential development for the study area.	163, 350, 382, 2307, 2234
535	The New South Wales sugar industry has excellent environmental credentials and is proactive in maintaining sustainable farming systems and environmental management. It is the only industry to achieve self-regulation status for its management of acid sulphate soils.	The comments are noted.	316
536	Pillar Valley is not mentioned as a rural residential area, but is more rural residential than many of the areas listed including Gulmarrad and James Creek which are more urban, even though the land is zoned for general agriculture.	The Route Options Development Report (RTA, 2005) refers to land zoned under Council's planning controls for rural residential, rural small holdings or similar purposes. The Pillar Valley area is zoned general agriculture. However, the study has recognised residential settlement in this area through the identification of individual houses based on aerial photography and field inspection.	275
537	The Pillar Valley is an important area for agricultural production. People have purchased large lots to live and develop crops for local markets, grazing, sustainable selective logging of high value timbers, aquaculture, low key tourism and conservation. Many residents grow organic produce for their own use and for sale to supply the growing demand for organic produce for both city and local markets. Route options through this area will limit the ability to diversify economic uses of the land and hence affect viability. Pillar Valley and surrounding areas are less affected by flooding and have historically been used by farmers for stock during drought and floods.	It is acknowldged that the Pillar Valley area is important for a range of agricultural activities including small volume and niche producers, and for seasonal or flood related uses. These aspects are considered in the selection of a preferred route.	275

Issue No.	Comments on land use	Response	Stakeholder ID
538	Pillar Valley is situated between Grafton and the coastal towns of Minnie Water, Wooli and Brooms Head. Demand for rural residential land has risen in recent years and Pillar Valley and surrounding areas have grown as more people are making lifestyle decisions to move away from developed areas. The Clarence Valley Settlement Strategy identifies potential future growth in this area. Pillar Valley is well situated for planned rural residential development with conservation as a major theme. This may have future importance to the area, particularly since there are limited development opportunities in the coastal towns.	The assessment of route options is based on a range of information sources, including the views of the community and information provided by Council and other government agencies. Council officers have indicated that a review of future development in the Pillar Valley area, and generally across the Clarence Valley area, is to be undertaken. The Clarence Valley Settlement Strategy states that Pillar Valley could, beyond the life of the strategy, develop as a small village centre. However, land is not specifically identified for this purpose and Council has indicated that it has no definite plans for significant population growth in the Pillar Valley area at present.	262, 275, 2106
539	The Purple/B. Green/C and Red/D options would be against the current pattern of land use and development in the Clarence Valley. Land near the existing highway is more suited to the highway development whereas land use to the east should remain rural. Development of the eastern options would be negative to the economies of Pacific Highway centred towns and villages and would draw economic development away from the existing centres into predominantly rural areas.	It is acknowledged that highway developments can change land use and development patterns. Future land use changes would occur subject to market demand, land availability and suitability, and the strategic and statutory plans and policies of the local Council and the state government. Demand for land for highway related development would be largely determined by the access to the new road, and for this reason would be typically limited to locations in proximity to interchanges.	1909, 2096, 2106, 2231, 2276, 2320, 2391, 2406, 2417, 2418, 2420, 2430, 2440,2505, 2506, 2507
540	The baby boomer generation are now reaching or approaching retirement age. The North Coast of NSW is a preferred destination for many people of this generation. The new highway will allow many more people to discover the Clarence Valley and encourage relocation. Yamba, Gulmarrad, Townsend, Clarenza and Junction Hill are all poised to provide subdivisions to accommodate the future growth.	The Pacific Highway Upgrade Program as a whole is anticipated to reduce travel times to major destinations and improve regional accessibility. However, it is only one of many factors in population growth on the North Coast of NSW. It may therefore contribute to increased demand for residential land within Clarence Valley. However, land use policy decisions are the responsibility of Clarence Valley Council and the Department of Planning.	160
541	The Orange/A option provides the safest route for travel within the Clarence Valley for services, shopping & medical needs. The Clarenza area now has three new schools and will be the main population growth centre for young families. By following the alignment of Four Mile Lane, the Clarenza area will be a much safer place for children to access schooling. Families from Clarenza, Junction Hill, Grafton & South Grafton will also be able to quickly access the new motorway at either interchange for travel to the beach or trips to the Gold Coast & Brisbane.	The Orange/A option would bypass South Grafton and Clarenza. Discussions with Council officers have indicated that Council sees benefits in diverting through traffic away from these areas to improve local connections between Grafton and potential growth areas in Clarenza and South Grafton. The Orange/A option would also potentially provide greater regional accessibility benefits to the local population than other options.	160

Issue No.	Comments on land use	Response	Stakeholder ID
542	The communities of Taloumbi, Gulmarrad and James Creek are located in a flood-free area on the Lower Clarence, making these important rural residential development areas. Many of the homes in these areas affected by the Green/C and Red/D options have been built since the last census was conducted in 2001, however that census showed Gulmarrad had the highest level of compound growth for the Shire with 8.1%, an increase of 158 people between 1996 and 2001 (almost 50%). The average for the Maclean Shire was 1.83%. James Creek area also grew by 90 people in that period. In contrast, the population living near the existing highway in the Shire, fell in numbers. Clarence Valley Council planning staff stated early in the year that only approximately 50% land zoned for development at Gulmarrad has been developed. James Creek and Gardiners Road also has a significant land bank available for future development. The "detailed cost analysis" fails to show the negative economic affects a motorway would have on these growing communities, future development and the local building trade. The negative economic impacts a route in the vicinity of these areas would be enhanced because of the prevailing wind direction, something that was not considered by SKM or the RTA.	Gulmarrad and James Creek are identified in the Route Options Development Report (RTA, 2005) as major rural residential areas in the Clarence Valley with potential for future population growth. The options have been developed to minimise potential constraints on future growth. The study team has investigated potential residential growth and undertaken extensive consultation with Clarence Valley Council. This assessment has concluded that the route options are broadly consistent with Council's current land use policies and zoning under relevant planning controls. While the population along the existing highway may be reducing, these areas continue to be important as agricultural production areas and are also established residential areas. The assessment of route options has considered the potential for impacts on existing and potential future residential areas.	163, 266, 271, 360, 376, 420, 1632, 1953, 2427
543	The Route Options Development Report states that the Clarence Valley Settlement Strategy predicts a population growth of up to 60,290 by 2016, which is equivalent to 1.3% p.a. The report then states that this rate is "considered to represent the maximum likely population growth". There are contradictions in the report in relation to population growth rates.	Population growth rates are provided as indicators of trends and should be read in conjunction with the details relating to land use and planning policy, which are also key determinants of likely future development and population growth. The data in the report present a range of potential future growth scenarios, and this is in recognition of the known difficulty in predicting population growth due to a range of factors that influence population trends.	262
544	There is an abundance of currently "zoned agricultural" land with enormous development potential, that is within the path of the Green/C and Red/D options. Some of this land commands striking views, and excellent home sites with northern aspects and elevation to catch the sea breezes. This is the logical future development area.	Council officers have indicated to the study team that the Clarence Valley Settlement Strategy is likely to be reviewed. However, current zoning does not indicate further eastward expansion of residential areas in the James Creek, Gulmarrad and Taloumbi areas.	1855

Issue No.	Comments on land use	Response	Stakeholder ID
545	The Green/C option directly impacts a family property held since 1977, during which time plans for it's future use have developed to include an ecotourism lodge with satellite self contained bungalows, wildlife watching hides and a new farmhouse. While maintaining the existing use and amenity of the area. The road then directly impacts on the registered Quarry in Lot 171 by going square over the top of it! The planned farmhouse construction on the hill overlooking the ocean would not be viable.	The comments are noted.	1998
546	Particularly in the north of the study area around James Creek and Gulmarrad, land development and the building industry was flourishing until the route options were announced. If fewer people choose to settle in Gulmarrad and James Creek, then the local building industry will suffer.	It is acknowledged that the route options can affect the sale and development of land. The RTA is mindful of this in the timing of its processes. However, there is a need to provide the community with information on the project. The identification of the preferred route will provide more certainty for planning and investment decisions.	163, 1953
547	Purple/B would impact substantially on Maclean and Gulmarrad growth as it cuts them in two.	The Purple/B option follows the route of the existing highway between Maclean and the Townsend and Gulmarrad areas.	2183
548	About 5 years ago this land was released from rural to low density residential and this was approved by the State Labour Government. Since then many houses have been built without any expectation of the extreme impacts that will result from The Green/C and Red/D options. The same State Labour Government cannot now make a decision that will reduce the amenity of these houses to the extent that many will be uninhabitable.	The development of the route options has considered the zoning of land for urban and rural residential purposes.	2499

4.3.22 Property access

Issue No.	Comments on property access	Response	Stakeholder ID
549	If someone's property is severed by the highway, does the RTA guarantee always to provide direct access between both portions (i.e. an underpass/overpass/service road). Please explain to us how we are going to have access to our property under this Route option. Underpasses would be useless in times of flooding.	In situations where properties are severed by the preferred route, the RTA would negotiate with individual land owners and occupants to determine appropriate means of access. This may include overpasses, underpasses, alternative access or the purchas of the isolated parcel of land.	262, 536, 622, 1489, 1611, 1707, 1795, 1998, 2120, 2379

Issue No.	Comments on property access	Response	Stakeholder ID
550	The access road to our property would be cut by an option. How would the RTA maintain access?	The RTA is required to ensure access to all properties is provided, or to purchase land where it is not possible to provide access. Access may include overpasses, underpasses or alternative access. In some situations a new local access road may be constructed to service several properties. The exact means of access would be negotiated with individual owners.	322, 1611, 1707, 1734
551	In those cases where the RTA does not provide direct access for each affected landowner, are there standards for the maximum detour that people might have to make along a service route to access the rest of their land? In other areas of the highway, what is the maximum and average detour in such cases?	There are no standards detailing detour lengths along service roads however the RTA applies the principle of minimising increases in travel time to enable properties to continue to operate efficiently. The RTA is unable to provide statistics on the maximum and average detour length on other sections of the highway.	262
552	Does the access policy apply regardless of the size of land severed? If not, are there minimum size requirements?	Refer to response to issue number 550. There are no specific requirements in terms of the size of resulting land parcels. Acquisition and provision of access is determined through negotiation with individual land owners, following selection of the preferred route.	262
553	People also move stock directly across boundaries. Does the RTA provide access between neighbours in such cases, if the highway were to cut off the current access routes?	Access between properties will be assessed on an individual basis in consultation with affected property owners. Depending on suitability, access maybe reinstated.	262
554	Access to properties from the existing highway across the Orange/A option would require under or overpasses for cattle and cane trucks, not to mention the transfer of cattle from one side of the highway to the other. This would be very expensive with the number of properties along this option.	The preliminary concept design for the Orange/A option has considered the need for crossings and service roads to ensure access to properties fronting the highway is maintained.	971, 898, 1493, 1884
555	Who pays for fencing on either side of new highway?	The RTA would meet the cost of fencing along the length of the highway.	1489
556	The maintenance of access to affected properties during construction of the Orange/A option would be difficult for vehicles and even more difficult for the vast number of livestock movements.	It is acknowledged that access and traffic management during construction is more difficult adjacent to existing raods. Management of construction access to properties would be determined during the construction phase in constultation with landholders.	2279
557	Between Harwood to Iluka Road farmers travel between properties daily with tractors and farm machinery. We need to be able to cross the highway with cane harvesting equipment at all current locations through Harwood Island, Chatsworth Island, Woombah and Mororo. The possibility of having to travel any greater distance than present is unacceptable.	The comments are noted. Access management measures would be further developed following selection of a preferred route. The RTA would aim to retain existing access routes where possible, or where deviations are required, minimise the length and travel time.	605

Issue No.	Comments on property access	Response	Stakeholder ID
558	When the RTA is designing access across the highway, do they take into account severance of the community, even where this is not concentrated in a village?	The route options assessment has included consideration of the potential severance of rural communities.	262

4.3.23 Economic impacts

Issue No.	Comments on economic impacts	Response	Stakeholder ID
559	Major industries supporting the local/regional economy include: ■ Sugar Cane ■ Grazing ■ Quarry resource ■ Timber resource The options have a direct impact on these industries, the economy and local employment.	It is acknowledged that the route options and connections have varying degrees of impact on each of these resources. The route selection process will take these potential impacts into account. These issues are considered in the preferred route selection process.	322, 1998, 2373
560	We have seen a marked decrease in property values in this area over the last 12 months with the release of the study area to the public. To date the average property value has fallen $100,000 and it is anticipated to continue to fall if an eastern option is preferred. Residents are unable to sell properties in the study area at present. It seems ludicrous to propose to build this motorway across arguably some of the most expensive real estate outside of the Sydney metropolitan area.	It is acknowledged that the announcement of major projects can affect the sale and development of land. The RTA is mindful of this in the timing of its processes. However there is a need to provide the community with information on the project. The identification of the preferred route will provide more certainty for planning and investment decisions.	266, 231, 271, 1917

Issue No.	Comments on economic impacts	Response	Stakeholder ID
561	Where is the social and economic study of the impacts of these proposals on the Grafton community? How will a bypass affect Grafton? Grafton is reliant on passing travellers for income and local employment. The Grafton Chamber of Commerce was not invited to comment on business impacts.	Consideration of the impacts of a "bypass" on Grafton has been undertaken as part of the assessment process. Experience from other projects indicates that towns may suffer short term economic impacts, particularly for businesses reliant on highway generated trade. However, the overall economic impact to bypassed communities is usually beneficial. Examples of bypassed towns that have benefited include Goulburn and Murwillumbah. The extent to which Grafton is reliant on passing trade is limited, as it serves important functions as a sub-regional centre. This is recognised by the State Government in the North Coast Urban Planning Strategy (Department of Planning, 1995) and in Council's Settlement Strategy. As part of the route options development, the study team consulted Chambers of Commerce and relevant Progress Associations in relation to the draft Business Impact Survey. The RTA has also established a Business Focus Group involving representatives of Council, Chambers of Commerce and Progress Associations in the area.	231, 266, 262, 268, 271, 359, 1978, 2311, 2333, 2342, 2409, 2454, 2455
562	Bush is considered to be of no intrinsic value. The value of small-scale sustainable logging and any agricultural pursuits other than those conducted on 'prime agricultural land' are ignored.	Evaluation of these land uses and economic activities has been undertaken as part of the investigations for the route options. Page 62 of the Route Options Development Report (RTA, 2005) identifies a range of agricultural activities, with specific reference to grazing activity in the east of the study area. It is understood that areas beyond those identified as prime agricultural land are still used for agricultural production and that route options would impact on these areas to varying degrees.	262, 268, 271, 359, 1978, 2311, 2409, 2454, 2455
563	The Orange/A option provides the best value for money / economic viability as it will be used by the majority of the traffic (75%), including 50% of the heavy vehicles.	The Orange/A option would attract a much higher volume of traffic than the other options, but this must be balanced against its substantially higher construction cost, when determining the value for money of the option.	275
564	The Orange/A option will displace 175 dwellings including our home and make our farm unviable which will result in unemployment. The Purple/B option would also impact on the viability of farms. Loss of prime land, residences and facilities will compromise the physical and financial viability of individual farms. This, coupled with development restrictions associated with flood zoning, will have a major impact on the dollar value of remaining land, making it difficult for farm businesses to realise assets and "move on".	It is acknowledged that the Orange/A option would have substantial social impacts including the acquisiton of houses, loss of prime agricultural land and effects to property management and viability. These issues are considered in the preferred route selection process.	635, 1139, 1159, 1917, 2279

Issue No.	Comments on economic impacts	Response	Stakeholder ID
565	Some people's employment or businesses will be affected by this decision. This is unfortunate, but it is not something that has been unseen in the future. The upgrade should be allowed, in light of the benefits to the majority - improved safety for local communities and better travelling conditions for the increasing number of highway users. Through travellers will still use local amenities, if the area is one of particular interest or has been habitually used in the past.	The continued use of local amenities can be encouraged by providing good access arrangements and appropriate signposting. The Pacific Highway Program objectives and the specific project objectives form the basis for the identification of options and for their evaluation. The route options are considered using a range of criteria encompassing functional (engineering), social, economic and environmental aspects. In this context, the preferred route will be the one that, 'on balance', meets these criteria, while taking costs into consideration.	227, 2283
566	Clarence Valley Council will lose substantial rates from the loss of properties which will need to be acquired (whole or part) along the route of the Orange/A option.	Clarence Valley Council may potentially lose some rates revenue.	474
567	Farms affected are businesses. They have ABNs and pay tax. Along the Orange/A option there is high intensive farming. Due to the smaller acreage farming on higher production soil, they pay more tax.	The comments are noted.	2282
568	All options would have a severe effect on existing businesses, not only those located along the existing routes but those business centres, such as Grafton, Maclean and Ulmarra, which rely on passing traffic for a percentage of their business. New routes would result in many businesses failing as a result of falling revenue. The Purple/B, Green/C and Red/D options would have the most detrimental impact on the local business community. Much revenue into Grafton is from passing traffic. The Green/C and Red/D options would have a detrimental economic impact on Grafton and the town would take many years to recover, if ever. A downturn in revenues to businesses will result in increased unemployment. Has the cost of paying unemployment benefits, regeneration money injected into creating jobs in areas economically impacted been factored into the construction costs? What figure can be put on destroying people's livelihoods and way of life?	Fragmentation and direct loss of prime agricultural land is identified in the Route Options Development Report (RTA, 2005) as an impact of a number of route options. The assessment of these impacts will continue to be refined as the project progresses. These impacts are considered as part of the selection of the preferred route.	160, 247, 271, 426, 595, 1011, 1357, 1632, 1795, 1850, 1909, 1917, 1978, 2082, 2106, 2173, 2217, 2238, 2323, 2408, 2409, 2427, 2504

Issue No.	Comments on economic impacts	Response	Stakeholder ID
569	SKM have only surveyed businesses along the existing highway, not all the businesses which will be impacted on if the highway is moved a considerable distance from Grafton, through removal of visitors and flow-on effects from impacts on highway businesses. Proper consultation needs to occur on the impacts on all Grafton businesses. Grafton is our regional centre and a more accurate evaluation of the impacts of diverting the highway up to 34 km is needed.	▪ The survey covered businesses identified as having the most potential to be affected by the highway upgrades, ie, those businesses which are likely to have a significant dependence on highway through traffic due to the type of services provided and location. Consultation via the Business Focus Group, Chambers of Commerce, local progress associations and direct contact with individual business owners has also been undertaken since the business survey.	2106, 2207
570	The economic health of Grafton and other townships/villages along the river, including but not limited to Ulmarra, Lawrence, Ashby, Maclean, Brushgrove, Tyndale, Shark Creek and Tucabia, is closely linked with access, and close proximity to the Pacific Highway. The Purple/B, Green/C and Red/D options are of great concern due to the distance they take the highway away from our city. County centres are under enough pressure economically without major road systems to the city being severed. These options will impact on the availability of jobs and services for the whole region. In particular, if the Green/C or Red/D options were selected (30km to the south and 40 km to the north). No traveller unless required would exit to travel to Grafton. Of the four options proposed, the Orange/A option will have the least economic impact on the people of Grafton and is the only reasonable choice. There is a boom in Grafton at the moment – extension of Shopping World, Bunnings, and talk of a Homebase located at South Grafton. Routing the Highway a long distance could leave these projects 'white elephants'. Cost and distance should not be a major issue for this option because the long term issue should be the benefit to Grafton City.	Consultation with business owners in the Clarence Valley has indicated that the proximity to and ease of access to and from the highway is important to the viability of business. More generally, respondents identified key success factors for economic development of the area – these factors included developing residential, tourist and industrial infrastructure and services and maintaining proximity of highway through traffic to Grafton and Maclean. The potential to locate interchanges close to these towns to maximise visitation has therefore been considered in the assessment of the route options. However, Grafton and to a lesser extent Maclean rely primarily on the population within the the towns themselves and the surrounding sub-region for viability, rather than being largely dependent on highway traffic.	160, 163, 174, 247, 261, 262, 266, 271, 275, 361, 371, 372, 376, 380, 402, 412, 420, 480, 502, 530, 912, 949, 950, 1349, 1795, 1868, 1895, 1909, 1917, 1953, 1971, 2082, 2086, 2088, 2096, 2106, 2130, 2135, 2137, 2141, 2155, 2159, 2165, 2168, 2176, 2177, 2186, 2188, 2196, 2202, 2205, 2206, 2210, 2216, 2223, 2231, 2236, 2239, 2240, 2246, 2253, 2268, 2276, 2287, 2307, 2311, 2313, 2320, 2333, 2342, 2343, 2349, 2353, 2355 , 2359, 2374, 2375, 2378, 2379, 2381, 2391 , 2406, 2408, 2409, 2414, 2417, 2418, 2420, 2430, 2440, 2453, 2473, 2474, 2482, 2493, 2505, 2506, 2507, 2512,

Issue No.	Comments on economic impacts	Response	Stakeholder ID
571	The Orange/A option puts a motorway exit much closer to Grafton City, and this choice is a good indication of Government support for the growth of Grafton as a sub-regional centre.	The accessibility benefits or impacts of each option, and flow on effects for Grafton, are a consideration in the assessment in the preferred route selection process.	163, 1870, 2375
572	If the Orange/A option was the preferred route with sufficient on/off ramps, it could only benefit the established areas along this route and enhance the employment opportunities. Government agencies should work toward employment growth. If an option with limited interchanges is the preferred route it would have an opposite effect. There would be no employment opportunities developed and an increase in unemployment in the established communities, towns and Pacific Highway businesses along the current route.	It is acknowledged that the benefit to local businesses of the various route options is likely to be largely dependent on the location of interchanges or other access points. The Orange/A option provides greater opportunities for interchanges between Wells Crossing and Harwood. Businesses along the existing highway may still be affected from reduced trade because access to and from the Orange/A would be only via interchanges. The Purple/B, Green/C and Red/D options have less direct interchanges access and are located further from existing businesses. However, up to 70% of traffic would remain on the existing highway, and this traffic would be expected to continue to patronise businesses along the highway such as service stations and food outlets.	163, 2077, 2080, 2093, 2094, 2096, 2127, 2130, 2231, 2261, 2271, 2276, 2320, 2328, 2368, 2375, 2391, 2401, 2402, 2406, 2417, 2418, 2420, 2423, 2430, 2431, 2440, 2480, 2505, 2506, 2507
573	In regard to towns/villages in the northern section of the study area all options would have an equal effect on businesses that rely on passing highway traffic.	The comment is noted.	2312
574	The studies do not address the issue of rising fuel prices. Some of the highway might not be upgraded for ten years, and by then it is quite possible that the price of fuel will be so high that less long distance traffic will be on the roads.	Although rising fuel prices may have short-term impacts on road transport, they are not currently expected to significantly alter transport technologies, travel behaviours and road travel demand in the period under review.	949
575	The business impact in my area relate to all options: all businesses will be affected by good and bad issues.	The comment is noted.	426
576	Red/D - Any closer to Grafton, the motorway would be devastating to local business and farms.	Consultation with business groups in the Clarence Valley has shown that the Orange/A option is considered to have the least impact on local businesses because of its proximity to Grafton and businesses along the existing highway.	2385

Issue No.	Comments on economic impacts	Response	Stakeholder ID
577	The Orange/A option does not minimise socio-economic impacts and maximises impacts to other businesses. It does not minimise the impacts on business and service facilities that are dependent on the Pacific Highway.	Refer to response to issue number 576. It is acknowledged that the benefit to local businesses of the various route options is likely to be largely dependent on the location of interchanges or other access points. The Orange/A option provides greater opportunities for interchanges between Wells Crossing and Harwood. Businesses along the existing highway may still be affected from reduced trade because access to and from the Orange/A would be only via interchanges. The Purple/B, Green/C and Red/D options have less direct interchanges access and are located further from existing businesses. However, up to 70% of traffic would remain on the existing highway, and this traffic would be expected to continue to patronise businesses along the highway such as service stations and food outlets.	893, 2279

Issue No.	Comments on economic impacts	Response	Stakeholder ID
578	The Taree "bypass" involves interchanges roughly 3-6 km from the town. According to the Taree tourism centre (pers. comm.), initially even this level of bypass had a significant impact on the town, leading to the closure of some businesses. It took about five years of hard work to mitigate the effects of the bypass.	Previous studies on town bypass impacts have shown that they depend very strongly on the characteristics of the individual town – its size, economic structure (particularly dependence on highway generated trade), position relative to other towns, tourism potential, regional centre for government offices, ability of local producers to benefit from transport improvements from the bypass. Often any negative impacts (eg. on retail sales volumes) are short-term and the net impact is positive (and larger) in the longer term after a town has time to exploit the positive effects of a bypass and/or implement mitigation strategies (eg. establish a service centre on the bypass to maintain highway-generated employment and sales in the town, amenity improvement projects to stimulate tourism). Consideration of the impacts of a "bypass" on Grafton has been undertaken as part of the assessment process. Experience from other projects indicates that towns may suffer short term economic impacts, particularly for businesses reliant on highway generated trade. However, the overall economic impact to bypassed communities is usually beneficial. Examples of bypassed towns that have benefited include Goulburn and Murwillumbah. The extent to which Grafton is reliant on passing trade is limited, as it serves important functions as a sub-regional centre. This is recognised by the State Government in the North Coast Urban Planning Strategy (Department of Planning, 1995) and in Council's Settlement Strategy. As part of the route options development, the study team consulted Chambers of Commerce and relevant Progress Associations in relation to the draft Business Impact Survey. The RTA has also established a Business Focus Group involving representatives of Council, Chambers of Commerce and Progress Associations in the area.	262

Issue No.	Comments on economic impacts	Response	Stakeholder ID
579	In relation to the "economic context" SKM note that "[g]rowth opportunities in the study area will be led more by tourism and in-migration of households (both retirees and working-age) than by production" (p.73). They also note that this is unlikely to be as strong as for major centres such as Coffs Harbour, Port Macquarie, Port Stephens, the Great Lakes, Ballina and Tweed Heads (p.74). Curiously, SKM attribute this to the better services and air flights available in the other areas: a more obvious explanation is that the equivalent town, Grafton, is 40 odd minutes from the coast, rather than being a coastal city. There is no opportunity for a coastal city in this region as the existing coastal villages are tiny enclaves in the national park. In effect, SKM have acknowledged that Grafton is not an economic boom town, and that economic growth is likely to come from enjoyment of the rural and bushy environs of the study area, and adjoining undeveloped coastline. Why then do SKM include the impact of the route options on "prime" agricultural land and on forestry, as if these were the only economic cost of a motorway (p.152), but entirely omit any discussion of potential impacts on what they themselves acknowledge to be the major growth "opportunities"?	The then Department of Planning, Infrastructure and Natural Resources 2004 population projections show that Grafton Statistical Local Area is the only area on the Mid-North Coast expected to experience a decline in its population between 2001 and 2031. Yamba, Maclean and the Ulmarra hinterland are the parts of the study area expected to experience the growth in population over this period. Potential amenity and lifestyle impacts are considered in the selection of a preferred route. The Route Options Development Report (RTA, 2005) identifies social, environmental, functional/engineering and economic impacts of the project. Impacts on prime agricultural land and on forestry are just two of the numerous impacts identified for this project. Additional information on the investigations that have been undertaken is available in the working papers for the project. These documents further detail potential impacts of the route options.	262
580	The Business Impact Survey was limited to businesses which rely on passing highway traffic. This is totally inappropriate. This was against the advice of the Grafton Chamber of Commerce and Industry. The Grafton Chamber of Commerce and Industry believes that an in-depth Business Economic Impact Study should be undertaken in respect of all route options.	The survey covered businesses identified as having the most potential to be affected by the highway upgrades, ie, those businesses which are likely to have a significant dependence on highway through traffic due to the type of services provided and location. Consultation via the Business Focus Group, Chambers of Commerce, local progress associations and direct contact with individual business owners has also been undertaken since the business survey.	174
581	The Orange/A option would impact on the viability of Rathgar Lodge, an aged care facility in Ulmarra. This would impact on the local economy as it is a major employer in the town.	The comments are noted.	1896
582	People not involved seem to be unaware of the effect on the Clarence Valley. The Council owned Sale Yards, the Abattoir, Stock & Station Agents; farmers all have ABN numbers and are in business.	The comments are noted.	289

Issue No.	Comments on economic impacts	Response	Stakeholder ID
583	Residents who have chosen a quieter lifestyle will be robbed of their reason to be in the area which may result in people moving away and loss of economics to Grafton.	Population growth is influenced by a wide range of factors and the overall influence of the upgrade of the Pacific Highway on settlement patterns is assessed to be minimal. Therefore, flow on impacts for the local economy are unlikely to be substantial.	2321
584	The project will result in a decline in the business and tourism industry within local communities. Tourism in Clarence Valley is based on uniqueness and this project threatens this.	Consultation with business owners in the Clarence Valley has indicated that the proximity to and ease of access to and from the highway is important to the viability of business. More generally, respondents identified key success factors for economic development of the area – these factors included developing residential, tourist and industrial infrastructure and services and maintaining proximity of highway through traffic to Grafton and Maclean. The potential to locate interchanges close to these towns to maximise visitation has therefore been considered in the assessment of the route options. However, Grafton and to a lesser extent Maclean rely primarily on the population within the the towns themselves and the surrounding sub-region for viability, rather than being largely dependent on highway traffic.	1179
585	Grafton needs a new highway with exit points not the eastern routes.	A number of options for interchanges are being considered and will be assessed in terms of reducing social, environmental and economic impacts within the Clarence Valley, as well as meeting the project objectives.	2414

4.3.24 Agricultural impacts

Issue No.	Comments on agricultural impacts	Response	Stakeholder ID
586	Expressed concern about stock movement and loss of flood free land: ■ By removing farm land, property owners will not have enough land for their animals. ■ All route options take away flood free land / high ground for cattle during periods of prolonged wet weather. ■ Access to flood free land / high ground will be impacted by the route options. ■ Three flood reserves are traversed by the various route options. The RTA should provide suitable compensatory lands as alternative refuges. ■ Relocation of farm infrastructure onto dry land will be difficult or impossible. ■ Access for movement of equipment and stock must be maintained.	It is acknowledged that all of the route options would affect access to flood free land to some degree. This aspect is a consideration in the selection of a preferred route and its alignment. As part of the design of the preferred route, local access would need to be maintained for both vehicular traffic and stock movements. This would be undertaken in discussion with property owners, and may include provision for such items as underpasses.	125, 149, 150, 174, 180, 224, 262, 289, 316, 356, 439, 483, 491, 495, 509, 520, 530, 536, 612, 621, 622, 632, 635, 887, 893, 920, 942, 971, 976, 982, 993, 1001, 1108, 1159, 1172, 1489, 1583, 1611, 1632, 1652, 1707, 1729, 1783, 1795, 1870, 1885, 1956, 1956, 1958 , 1998, 2069, 2076, 2096, 2106, 2117, 2148, 2175, 2278, 2279, 2283, 2291, 2304, 2317, 2335, 2357, 2379, 2380, 2427, 2428, 2429, 2436, 2457, 2476
587	All of the good and productive land will be taken away for the highway, leaving poorer quality land for farming. Good quality agricultural land lost is not readily available to replace this loss.	It is acknowledged that prime agricultural land would be affected by all options, particularly the Orange/A and Purple/B options. This is a consideration in the preferred route selection process.	125, 150, 180, 262, 289, 316, 356, 536, 621, 632, 887, 893, 971, 976, 1001, 1099, 1100, 1307, 1611, 1707, 1795, 1885, 2096,2139, 2279, 2283, 2304, 2457

Issue No.	Comments on agricultural impacts	Response	Stakeholder ID
588	Pollution from the new highway will impact on farms and wildlife that is beneficial for biological control of pests.	Potential air quality impacts are discussed in Section 5.3.5 of the Route Options Development Report (RTA, 2005). Modelling results have been assessed against the criteria established by the Department of Environment and Conservation. Historical data from monitoring of other sections of the Pacific Highway indicate that sampled pollutant concentrations near the road are well below DEC criteria. Health risks are considered in the context of standards established by the DEC, that are reflected in the air quality criteria. Air quality impacts will be determined in more detail as part of the environmental impact assessment for the preferred route so that impacts can be evaluated accurately.	1956, 2075, 2117, 2360, 1989
589	Expressed concern that large scale agriculture is considered more important than smaller operations, including crops for local markets, grazing, sustainable and selective logging, low key tourism. Some large scale farmers on the Orange/A option have land on the eastern options as flood free grazing land which is very important during flood.	Evaluation of these land uses and economic activities has been undertaken as part of the investigations for the route options. Page 62 of the Route Options Development Report (RTA, 2005) identifies a range of agricultural activities, with specific reference to grazing activity in the east of the study area. It is understood that areas beyond those identified as prime agricultural land are still used for agricultural production and that route options would impact on these areas to varying degrees. It is acknowledged that smaller scale farms are important for a range of agricultural activities including small volume and niche producers, and for seasonal or flood related uses. These aspects are considered in the selection of a preferred route.	635, 262, 2106, 268

Issue No.	Comments on agricultural impacts	Response	Stakeholder ID
590	Expressed an opinion about the agricultural impacts of each of the routes: ■ The Orange/A option would require the least amount of land clearing and therefore would have a reduced impact on local agriculture. ■ The Orange/A option would affect 23 cane growers. ■ The Orange/A, Purple/B and Green/C options have a far greater impact on prime agricultural land. ■ The Purple/B, Green/C and Red/D options have impacts (including access) on agriculture including grazing land, sugar cane and prime agricultural lands. ■ The Purple/B option would affect 16 cane farms in the northern regions. ■ The Purple/B, Green/C and Red/D options have less impact on local flood prone lands used for agricultural purpose. ■ The Green/C option would have the least impact on cane growing land. Only one pad on James Creek Road would be affected. ■ The Green/C option from the Harwood Bridge to Brooms Head Road is the route which has the least impact on good agricultural land. ■ The Green/C and Red/D options have least impact on prime agricultural land. ■ The Red/D option will have the least impact on agricultural activity. ■ The Red/D option would result in a significant loss of cane land estimated to be about 112ha.	All routes will have impacts to agricultural land. The landowners along each route place a great deal of importance on their farms and farming business. The development of route options is complex with many competing constraints which need to be identified and assessed. These constraints can be broadly grouped into social, economic, environmental and engineering and include agricultural landuse. The options that have been developed have varying degrees of impact on each of these aspects. The Value Management Workshop and route selection processes include the assessment of these criteria. In this context, the preferred route will be one that 'on balance' best meets these criteria, while taking constraints into consideration.	125, 149, 150, 174, 180, 224, 262, 289, 316, 350, 454, 486, 495, 536, 606, 608, 621, 632, 887, 893, 942, 982, 993, 1001, 1016, 1142, 1260, 1426, 1652, 1783, 1852, 1870, 1871, 1885, 2069, 2088, 2096, 2148, 2229, 2230, 2246, 2275, 2279, 2291, 2304, 2312, 2317,2321, 2362, 2376, 2398, 2407, 2420, 2457, 2491, 2505, 2506, 2507, 2705

Issue No.	Comments on agricultural impacts	Response	Stakeholder ID
591	Expressed concern about the impacts on farm viability: ■ The impact on the viability of agricultural farming enterprises needs to be considered during route selection process. ■ Selecting the Orange/A option will destroy the local dairy industry and make farming unviable. It would also result in increased milk transport costs for dairy farmers. ■ All options lead to loss of rich lands of socio-economic and environmental significance. ■ The loss of cane land would have major consequences for the continued viability of the Harwood Sugar Mill. ■ The overall impact of farm segmentation and loss of prime land could result in many of the affected farmers becoming unviable due to low production. ■ The impact on farms will create further economic hardship for the community. ■ There is a risk of creating isolated uneconomic, unworkable small land parcels and instances landlocked parcels without direct access to remaining land holdings. ■ Severance may cause farms to be located on either side of highway and increase cost of fencing requirements. It may also sever some family enterprises. ■ Farmers will reconsider the type of farming that they may undertake (eg from dairy farming to beef) and will reduce total productivity and result in reduction of potential profits. ■ Relocation of farming equipment will be very costly. ■ Loss of land would reduce income capacity. ■ Changes in hydrology may increase flood prone areas and impact on productivity of farms/industries.	It is acknowledged that the route options would, to varying degrees, affect farm viability and future commercial enterprises. This is a consideration in the route selection process. As part of the design process, the RTA would endeavour to minimise property impacts and severance in consultation with landholders. All acquisition, including that of agricultural properties is undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act, 1991*. Viability and future commercial enterprises is taken into consideration when determining the level of compensation required.	125, 149, 150, 174, 180, 224, 227, 231, 237, 262, 266, 271, 289, 316, 350, 356, 382, 417, 420, 426 439, 454, 483, 486, 495, 509, 520, 530, 536, 606, 608, 612, 621, 622, 628, 635, 887, 893, 942, 950, 971, 982, 993, 1001, 1016, 1067, 1099, 1100, 1142, 1159, 1162, 1172, 1260, 1267, 1307, 1489, 1493, 1535, 1583, 1611, 1632, 1652, 1707, 1729, 1783, 1795, 1850, 1852, 1858, 1870, 1871, 1885, 1956, 1958, 1975, 2032, 2069, 2075, 2076, 2088, 2096, 2117, 2148, 2175, 2229, 2230, 2231, 2238, 2246, 2275, 2276, 2279, 2280, 2283, 2291, 2304, 2307, 2317, 2320, 2335, 2357, 2360, 2375, 2379, 2380, 2388, 2391, 2406, 2407, 2414, 2417, 2418, 2420, 2427, 2430, 2436, 2440, 2447, 2457, 2462, 2463, 2486, 2491, 2505, 2506, 2507, 2566, 2705,

Issue No.	Comments on agricultural impacts	Response	Stakeholder ID
592	Land holdings will be fragmented and reduced by the highway, making them unworkable and unviable. Severance of properties should be avoided.	During the route options development process, the road corridor for each was developed to minimise severence of properties as far as possible. Discussions with individual land owners will continue throughout the next stages to accommodate this process. The RTA is required to compensate property owners for *direct* property impacts in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.	149, 247, 270, 294, 413, 509, 520, 530, 1493, 1611, 1866, 1998, 2096, 2231, 2276, 2320, 2335, 2380, 2391, 2406, 2417, 2418, 2420, 2430, 2440, 2486, 2505, 2506, 2507
593	Organic fruit and vegetable farming is a growing industry in this area and local farmers have been advised that their organic status may be threatened by the motorway due to the spread of airborne pollutants. The loss of a farm's organic status would result in loss of income.	The impacts on organic farms is a consideration in the preferred route selection process.	163, 266, 271, 275, 465, 466, 494, 1017, 1331, 1868, 1887, 1891, 1953, 2106, 2484,
594	Expressed concern about the impact on future commercial enterprises of existing properties. The project will impact on owners' plans to grow and increase the economic viability of farm. The project will impact on a venture into a farm stay business on the existing farm. Some opportunities exist for sustainable agriculture pursuits around Pillar Valley as it is less affected by flooding. A highway in this area will impact on this opportunity.	It is acknowledged that the route options would affect farm viability and future commercial enterprises to varying degrees. This is a consideration in the preferred route selection process. As part of the design process, the RTA would refine the concept design of the preferred route and endeavour to minimise property impacts and severence in consultation with landholders. All acquisition, including that of agricultural properties is undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act,1991*. Viability and future commercial enterprises is taken into consideration when determining the level of compensation required.	266, 608, 635, 971, 1017, 1331, 1493, 2106, 2279
595	Development restrictions associated with flood zones will make it difficult for farmers to "move on" – it is not easy to buy land in the region that will be able to replace property if it is lost.	It is acknowledged that it can be difficult to find alternative properties. This aspect is considered in preferred route selection process. It is not possible to avoid acquisition entirely. Acquisition and compensation of properties will be negotiated wtih individual landowners and the RTA, in accordance with RTA's Land Acquisition Policy and the *Land Acquisition (Just Terms Compensation) Act, 1991.*	266, 971, 1493, 2106
595a	Farms have been in families for generations and the highway may impact the possibility for future generations to continue the farming tradition.	Refer to response to issue number 595.	149, 454, 635, 892, 1017, 1331, 2279

Issue No.	Comments on agricultural impacts	Response	Stakeholder ID
596	State Government is protecting prime agricultural land in the Clarence Valley. Once agricultural land is used for other purposes it can never be reclaimed.	Fragmentation and direct loss of prime agricultural land is identified in the Route Options Development Report (RTA, 2005) as an impact of a number of route options. The assessment of these impacts will continue to be refined as the project progresses. These impacts are considered as part of the selection of the preferred route.	149, 606, 627
597	Disturbance to farming activities will occur during construction as well as operation.	Farming activities could be affected during construction and/or operation. Potential impacts could arise to property access, and stock and equipment movement, for example. Some impacts would be temporary during construction but other impacts would be permanent. Specific propety impacts will be discussed by the RTA with individual land owners during the concept design phase. As the road design is progressed there will be discussion about impacts and miitgation and management measures,	150, 180, 289, 621, 893, 1001, 2069, 2279, 2457
598	Property owners are required to ensure stock are kept away from roads until the RTA can undertake appropriate maintenance on fences etc. This would mean that property owners would be faced with the financial burden of an expensive insurance policy, which they otherwise would not require.	As part of the construction of the upgraded highway, associated infrastructure such as fences would be included and completed prior to the completion of the project. Ongoing maintenance will be undertaken by RTA. However, where holes or damage in the fence appears, some interim care of stock may be required until RTA is made aware of the problem and arrangements are made to repair any damage. Discussions with landowners will be ongoing and will address issues such as this.	175
599	People are generally resilient and most will adjust to changed circumstances. There are other examples where upgrading has impacted on agricultural land and adjustments were made and life goes on.	The comments are noted.	237, 275
600	Loss of viable agricultural land will have the ‘knock-on’ effect on farmers’ morale and productivity.	Ongoing discussions between potentially affected land owners and RTA will allow further opportunities for individual and property related issues to be raised, and measures to minimise impacts to individual properties to be identified where possible.	316
601	The loss of sugar cane production will have an impact on the Sunshine Electricity Cogeneration Project. The project is an important renewable energy project, which will contribute towards meeting Australia’s greenhouse gas reduction targets, improve air quality and create jobs in the region. The volume of sugar cane production is a key determinant of the project’s viability.	It is acknowledged that all of the route options would affect the sugar cane industry to some degree. Discussion with the industry was initiated at the commencement of the project and will be ongoing throughout the preferred route and concept design stages. Measures to mitigate impacts where possible will be discussed and developed with the industry.	316, 495, 2317

Issue No.	Comments on agricultural impacts	Response	Stakeholder ID
602	The location of farms, harvesting sheds, and other farm infrastructure is such that there are transport and operation efficiencies. Impacting any one of these will impact on the costs of running the farm. Loss of cane land and cane pads would have significant impact on harvesting costs, as well as transport and operation efficiency costs for the sugar cane and the refined sugar.	The project team is aware of potential impacts on the cane industry as a result of loss of productive cane land and changes to harvesting and transport efficiency. These are considerations in the development of the route options and the selection of the preferred route. The design of the preferred route would minimise, to the greatest extent possible, the area of farmland required. Measures would be incorporated in the design to maintain access routes and to compensate for loss of infrastructure such as cane pads in consulation with landholders.	316, 417
603	The value of the last untouched pockets of forest ecosystem and value of land with building approval is of much greater value than agricultural land.	The comment is noted. The Pacific Highway Program objectives and the specific project objectives form the basis for the identification of options and for their evaluation. The route options are considered using a range of criteria encompassing functional (engineering), social, economic and environmental aspects. In this context, the preferred route will be the one that, 'on balance', meets these criteria, while taking costs into consideration.	949, 1978
604	Some farms do not have access to the town water supply and the highway will have impacts on dams used to supply water to the farm.	Further assessment would be undertaken to determine if proposal impacted upon the water supply source. If the source were to be directly affected then the RTA propose measures to address these impacts in consultation with landholders.	1067
605	Cane farm profitability has been declining before the highway upgrade works were announced. Some of the cane land that will be lost is already owned by RTA. The figures representing loss to cane industry are inflated.	Impacts on prime agricultural land have been calculated using mapping provided by government agencies. Calculations are approximate. However, options that pass through cane land would require additional acquisition beyond the RTA owned road reserve to accommodate the upgraded road, and this would impact on cane farms.	163, 1953
606	Some farms have already been bisected from previous upgrade works and don't want to be inconvenienced again.	It is acknowledged that a number of property owners have previously been affected by RTA works. However it is not possible to avoid this situation entirely. Any acquisition would be undertaken in accordance with RTA's Land Acquisition Policy and the *Land Acquisition (Just Terms Compensation) Act, 1991.*	149

Issue No.	Comments on agricultural impacts	Response	Stakeholder ID
607	The New South Wales sugar industry is an important industry in the Northern Rivers region. The Pacific Highway upgrade should complement the industry and minimise disruption to the industry.	It is acknowledged that all route options have the potential to have an impact on cane farms and their infrastructure, and hence on the NSW sugar industry. Given the location and distribution of cane farms in the study area it is not possible to identify options with no potential impacts on these farms. Minimising impacts on prime agricultural impacts and on local business is a consideration in the selection of a preferred route. Providing a more efficient transport system in the region will be of benefit to the cane industry.	316

4.3.25 Impacts on residential, rural-residential and rural communities

Issue No.	Comments on residential, rural-residential and rural commnities	Response	Stakeholder ID
608	Commented on the relative importance of human beings and homes compared with sensitive fauna areas: ■ Are animals more important than homes? ■ It is better to go through cane farms than village areas. ■ People's lives are too important	It is recognised that each route will cause some level of impact to people and the environment. At this stage in the process we aim to identify potential impacts and ways those impacts can be reduced or avoided. Impacts on the local community are one set of factors that are considered during the route selection process. These factors cannot be considered alone however. The selection of the preferred route must consider a balance between social, environmental factors, as well as economic and engineering factors.	150, 159, 454, 520, 524, 530, 612, 902, 1491,1958, 2103, 2279, 2280, 2291, 2335, 2380, 2388
609	The route options will cause severance of communities. RTA policy should protect communities from severance.	Impacts to the local community cannot be completely avoided where a new highway is being constructed. The route options have been aligned to minimise the severence of communities where possible. Local access will be maintained to ensure access across the highway is provided.	168, 178, 195, 244, 265, 266, 326, 357, 359, 376, 393, 413, 426, 604, 956, 1142, 1186, 1855, 1917, 1937, 2082, 2117, 2160, 2312, 2334, 2416, 2433,2447, 3826
610	If the preferred route severs the property, relocating to the back of the property is not an option as it is too close to neighbouring residences.	Severence of properties will be avoided where possible. Any acquisition of property would be undertaken in negotiation with the landholder and in accordance with RTA's Land Acquisition Policy and the *Land Acquisition (Just Terms Compensation) Act, 1991*.	178, 195, 244, 266, 326, 357, 359, 393, 604, 956, 1855, 1937, 2082, 2117, 2312, 2334, 2416, 2433, 3826

Issue No.	Comments on residential, rural-residential and rural commnities	Response	Stakeholder ID
611	Expressed concern about the social impacts of the route options: ■ The eastern options will impact heavily on a rural community that is not geared up to deal with impacts of a major highway adjacent to the townsite. ■ Deeply concerned about effects of all option on villages. ■ Lifestyle considerations include proximity to wildlife, beaches, and unique environments. ■ The eastern route options would be catastrophic to the natural environment. ■ The eastern options cause sacrifices to lifestyles for only one-third of the traffic ■ The estimates of affected people on the route options are underestimated. ■ Routes should be fine-tuned to avoid impacts on communities ■ The motorway should deviate around villages and towns. ■ Why should people have to tolerate the sight of a highway? ■ Impacts of new project on undeveloped rural areas. ■ Impact on peaceful lifestyle. ■ People have chosen to settle in communities away from developed areas and amongst the bush setting. ■ Rural residents develop a special relationship to their land, far stronger than in an urban situation. ■ People have designed houses to live with doors open, and the highway noise, visual and air pollution will compromise this. ■ Route will impact on plans for land in future. ■ Growing communities are not considered adequately.	The information provided during the route options display period indicated an estimation of the number of potentially affected properties and includes properties where one or more of the route options pass within a property boundary It is acknowledged that each of the route options would to some degree affect residents and communities that are currently unaffected by a highway. In particular, the eastern part of the study area is valued by those who live there for its isolation and bushland character. This issue is a consideration in the preferred route selection process. Impacts to the local community can not be entirely avoided where a new highway is being constructed. Further, the social and economic effects of route options must be considered in conjunction with environmental and functional issues. In this context, the preferred route will be the one that 'on balance' best meets these aspects, while taking costs into consideration. As part of the design process the RTA will develop measures to address noise and visual impacts and privacy issues. Guidelines and criteria are provided by regulating authorities to ensure impacts are minimised as much as possible.	46, 150, 159, 163, 166, 174, 178, 195, 237, 244, 247, 262, 266, 271, 289, 294, 326, 331, 350, 354, 357, 359, 363, 372, 393, 412, 417, 420, 421, 425, 426, 438, 439, 470, 474, 483, 515, 604, 608, 863, 898, 950, 953,1087, 1142, 1144, 1212, 1224, 1349, 1535, 1583, 1855, 1866, 1868, 1885, 1909, 1917, 1958, 1970, 1975, 1978, 2069, 2072, 2077, 2080, 2082, 2086, 2106, 2117, 2120, 2124, 2127, 2130, 2135, 2137, 2145, 2165, 2169, 2176, 2177, 2188, 2189, 2190, 2196, 2205, 2206, 2210, 2223, 2236, 2239, 2261, 2268, 2271, 2279, 2291, 2299, 2307, 2308, 2312, 2313, 2321, 2334, 2351, 2353, 2374, 2375, 2378, 2388, 2414, 2416, 2420, 2432, 2433, 2440, 2447, 2471, 2473, 2480, 2482, 2493,2497, 2504, 2505, 2506, 2507, 2510, 2540, 2949, 3826

Issue No.	Comments on residential, rural-residential and rural commnities	Response	Stakeholder ID
612	The eastern options impact on but provide no benefits to the community. Consideration must be given to the local communities who will continue to use the existing roads, above the ease of travellers between Sydney and Brisbane who's only advantage is an eight to ten minute saving.	The project objectives, including the reduction of road crashes and serious injuries; reduced travel times, reduced freight transport costs, and the provision of a route that supports economic development are considered to benefit both the local community as well as the wider community.	163, 174, 647, 1352, 1953, 2414, 2388
613	There will be increased incidences in trespassing and vandalism and hence, costs incurred to upgrade fencing, security screening and locking devices.	The upgraded highway is designed for through traffic and therefore includes minimal points of entry and exit onto the highway. This will minimise the likelihood of vehicles stopping and motorists trespassing and vandalising property along the route.	163, 359, 1142, 1970, 2072, 2077, 2080, 2082, 2086, 2117, 2120, 2127, 2130, 2135, 2137, 2145, 2165, 2176, 2177, 2188, 2196, 2205, 2206, 2210, 2223, 2236, 2239, 2261, 2268, 2271, 2299, 2313, 2353, 2374, 2378, 2480, 2493
614	Expressed concern about impacts on rural communities: ■ Would split cattle and cane farms as well as impact on new development areas. ■ Farm land in this area is the backbone of the community in this area. ■ Farmers and graziers will have impacts on livelihood, not just residential amenity. ■ Flood free land for future development will be lost. ■ Too many cane farms impacted by the Orange/A option.	It is acknowledged that the route options would affect farm viability and future commercial enterprises to varying degrees. This is a consideration in the preferred route selection process. As part of the design process, the RTA would refine the concept design of the preferred route and endeavour to minimise property impacts and severence in consultation with landholders. If the preferred route impacts on an agricultural property to the extent that the property becomes unviable, the RTA would consider purchase of the whole of the property. Discussions with individual land owners will continue throughout the next stages to accommodate this process. The extent of impact to individual properties will be identified during more detailed investigations once the preferred route is approved and the concept design is developed for the upgrade highway.	178, 195, 244, 326, 357, 393, 420, 604, 1855, 2082, 2117, 2278, 2283, 2312,2333, 2334, 2408, 2409, 2416, 2433, 3826

Issue No.	Comments on residential, rural-residential and rural commnities	Response	Stakeholder ID
615	Expressed concern about the impacts on families: ■ Destruction of family history and traditional values. ■ Destruction of historic homes. ■ Destruction of homes and properties that have been in the family for generations, particularly along the Orange/A option. ■ Impacts on the elderly.	It is acknowledged that each of the route options would to some degree affect historic properties that have been held by generations and affect families and the elderly. In particular, settlement has historically been concentrated in the towns and villages along the existing highway, and many residents have strong family ties to this area over generations. This issue is a consideration in the preferred route selection process. Impacts to the local community can not be entirely avoided where a new highway is being constructed. Further, the social and economic effects of route options must be considered in conjunction with environmental and functional issues. In this context, the preferred route will be the one that 'on balance' best meets these aspects, while taking costs into consideration.	159, 163, 178, 195, 244, 247, 262, 289, 294, 322, 326, 331, 357, 376, 393, 417, 421, 454, 465, 474, 483, 604, 608, 635, 950, 954, 1016, 1115, 1144, 1535, 1855, 1910, 1978, 2082, 2096, 2117, 2133, 2189, 2231, 2276, 2280, 2291, 2307, 2312, 2320, 2334, 2391, 2406, 2416, 2417, 2418, 2420, 2430, 2433, 2440, 2447, 2486, 2497, 2505, 2506, 2507, 3826
616	Potential to impact on individual health, especially the elderly and people with special needs.	The RTA endeavours to minimise uncertainty and the aspects of project development that can impact on health, particularly to the elderly and those with special needs.	166, 520, 530, 612, 1958, 2291, 2380, 2335, 633

Issue No.	Comments on residential, rural-residential and rural commnities	Response	Stakeholder ID
617	Expressed concern about the stress associated with the project: ■ Potential to force some of the family holdings to be sold under pressure and force some families to leave the area. ■ People can't be expected to walk away and start again somewhere else. ■ Major upheaval and stress to peoples live e.g. changing schools and careers. ■ Potential for marriage breakdown, disintegration of families and depression and stress. ■ Potential for land values to reduce causing a decrease in rates payable to the Clarence Valley Council. ■ Impact on young families ■ People have chosen their way of life and some don't know any other way of life. ■ It is very stressful having to wait.	It is acknowledged that the development of projects such as this one can take some time and can cause anxiety and stress. The RTA is mindful of this in the timing of its processes. However, there is also a need to provide the community with information on the project. The identification of a preferred route will provide more certainty for individuals, families and the community. Discussions will continue with individual landowners to allow better understanding of specific impacts, which will also enable the identification of mitigation measures required to reduce impacts to adjacent landowners impacted by the road.	46, 150, 159, 163, 174, 178, 195, 244, 247, 262, 266, 271,326, 357, 363, 372, 393, 412, 417, 421, 426, 439, 454, 474, 483, 515, 524, 530, 604, 893, 898, 1087, 1142, 1144, 1212, 1224, 1349, 1583, 1855, 1866, 1885, 1909, 1917, 1953, 1958, 1975, 1978, 2082, 2103, 2106, 2117, 2120, 2124, 2145, 2169, 2178, 2184, 2189, 2220, 2234, 2279, 2280, 2307, 2308, 2312, 2334, 2351, 2360, 2375, 2388, 2414, 2416, 2420, 2432, 2433, 2440, 2447, 2473, 2486, 2497, 2504, 2505, 2506, 2507, 3826, 633
618	Decisions are made by people who are detached, both physically and emotionally as they live and work in different environments. Do Australian people have no rights when dealing with the RTA?	The route selection process allows for a broad range of inputs to the process. It considers the feedback from the community as well as the environmental, social, economic and technical investigations that were undertaken as part of the preliminary studies. The information discussed and outcomes and conclusions from the Value Management Workshop are also included in the decision making process.	1855, 2388
619	Recreational parks and community facilities with significant historical links will be reclaimed by the RTA.	Recreational parks and community facilities are considered in the route selection process, along with other social, environmental, economic and functional factors.	954, 1885, 1910, 2447

Issue No.	Comments on residential, rural-residential and rural commnities	Response	Stakeholder ID
620	Impacts on people in undeveloped areas cannot be compared equally with impacts on people near the existing highway as people along the eastern routes will be more sensitive to the impacts of a highway. Existing problems for residents along the Orange/A option should not be used to justify creating new conflict in the east.	Selection of the preferred route must consider the need for balance between environmental, social and economic factors. A major consideration is the potential for impacts of an upgrade through established areas compared with the impacts to areas with relatively little existing development. It should be noted that although residents and businesses on the existing highway are already exposed to road impacts such as noise and pollution, characteristics of their location have changed over time: traffic volumes and truck numbers have grown substantially, population density and vehicle conflicts create safety concerns and the design of the proposed upgrade will be larger in scale than the existing route.	174, 275, 604, 647, 696, 954, 1352, 1357, 1909, 2082, 2106, 2333,2342, 2408, 2409, 2473, 2504
621	The RTA has allowed huge freight trucks on the highway, which have caused increased noise. The RTA has never addressed this noise issue. The eastern options will lead to financial costs for residents to install, run and maintain air conditioners, and soundproofing-glazing due to closing of windows and doors to reduce noise impacts. This goes against design principles for the house.	Noise mitigation would be likely to be required for parts of any of the route options and may include measures such as noise mounds, noise walls or treatments to structures. These treatments would be considered by the RTA during more detailed design stages in accordance with requirements of the Department of Environment and Conservation, and in consultation with landholders.	150, 163, 237, 266, 604, 608, 863, 920, 1632, 1953, 1965, 1970, 1978, 2082, 2279,2342, 2409, 2427, 2473, 2333
622	The prevailing north-easterly breezes were not considered by the RTA. Noise and pollution both are a huge factor to this community. We are expecting sleep disturbance from noise. The noise impacts have not been documented adequately.	Noise and air quality assessment for the route options has been undertaken in accordance with recognised methodologies for assessments of this kind. Sleep disturbance is an issue for road projects, however, the RTA would aim to meet the night time noise criteria established for road projects by the Department of Environment and Conservation, including the implementation of mitigation measures where necessary. Further detailed noise modelling would be undertaken for the preferred route.	2342, 2409, 2082, 604, 2473, 2333163, 266, 1632, 2427, 1965, 1953, 1978, 150, 863, 2279, 237, 920, 1956, 608, 1970
623	There are no options for the people of Harwood as the corridor from Harwood village to Iluka Rd is not negotiable. The construction of Harwood Bridge or the highway will affect all of the people in the Harwood village. The impact of the interchanges at the Harwood Bridge would be devastating to the Lower Clarence Community.	Refer to response for issue number 2. One of the objectives of the Pacific Highway Upgrade Program is safety and thus safety considerations will be a major input into the evaluation of the options. Locations of highway infrastructure such as interchanges are selected on the basis of usage, connectivity and engineering practicalities. The interchange and highway will be designed to minimise impacts as much as possible.	119, 266, 920, 954, 1179,1224, 1224, 1307, 1491, 1850, 1910, 1917, 1975, 2052, 2087, 2170, 2189, 2327, 2361, 2388, 2447, 2556

Issue No.	Comments on residential, rural-residential and rural commnities	Response	Stakeholder ID
624	The small community situated between Yuraygir National Parks and Glenugie State Forests down Franklins Road is not considered in the route option development.	The impact on the community have been assessed during preliminary investigations. Additional information has been collected during meetings with stakeholders and within submissions received during the route options display period. Individual submissions have been received from residents on Franklins Road and are being considered as part of the preferred route selection process.	247
625	Expressed concern about access to essential services for population west of Harwood (Chatsworth, Ashby, Tullymorgan).	The RTA will ensure local access is maintained. Access configurations will be further considered when the preferred route is selected and during the concept design stage. Individual property owners will continue to have the opportunity to discuss issues of concern relating to access during the next stages.	2183
626	What is meant by the barrier imposed by the existing highway corridor on the development of functional and physical connections between Maclean and the areas of Gulmarrad, Townsend and James Creek?	The existing highway passes between Maclean and Townsend. While the towns are connected via an underpass along Brooms Head Road, the existing separates the towns.	2207
627	How will impacts on wildlife be prioritised compared to impacts on the lives of people and their families?	The preferred route will be selected as the option that, on balance, best meets social, environmental and economic considerations. Criteria for assessing the route options in terms of functional, social and local economic, and natural environmental considerations were developed at the Value Management Workshop held in March 2006. Participants also weighted the criteria to reflect the relative importance of different criteria. The outcomes of the workshop are reported in the Value Management Workshop Report (RTA 2006).	474

4.3.26 Visual impacts

Issue No.	Comments on visual impacts	Response	Stakeholder ID
628	The Harwood Bridge would become a six lane bridge, 37 metres high (that's about the same height as when the bridge is fully opened to allow shipping through) with a 1.5km ramp up either side of the river. This is a certainty to occur whichever of the current options up for consideration are chosen. Not really what you would expect to see in a quiet little coastal country town is it? You could even draw a comparison to the Brisbane's Gateway Bridge to put you more in the picture.	It is acknowledged that the new Clarence River Crossing will have a significant visual impact on the town of Harwood. Discussions have been ongoing between RTA, the NSW Maritime Authority, river users and other stakeholders as to the required clearance of any new bridge(s). Options currently being considered are a fixed bridge of 30 metres clearance or an opening bridge with a deck height the same as the existing Harwood Bridge. Two additional options to the east and to the west of the existing bridge were considered following community comment during the route options display. A bridge west of Harwood has not been pursued due to difficulties in staging, acquisiton of more houses than the other options and potential impacts to cane land. Separate studies will be undertaken to design the bridge, its approaches and associated landscape in a manner that although representing a big change in the environs of the town in the end is a positive one.	1975, 2144
629	The Green/C and Red/D options will deprive us of uninterrupted views, resulting in property depreciation. Currently the house sits up on a hill with all living areas including a large, open entertainment deck overlooking the bush, rural paddocks and across to Lake Wooleweyah and Yamba.	The concerns are noted. As part of the detail design phase, measures would be considered to minimise the visual impacts of the proposal. This includes such treatments as landscape plantings and mounding. This would be undertaken in consultation with landholders.	175
630	Multi-lane highways tend to be well planted with attractive natives which are maintained rather than rubbishy grassy mess alongside the current highway so I can't see the problem with eyesores.	The comment is noted.	1205
631	Even though the Orange/A option would have a greater visual impact to a higher concentration of people, it would not present a great change for people as they are already viewing a highway. However, the visual impact of the Purple/B, Green/C and Red/D options would distress residents & travellers as the entire ambience and atmosphere of a peaceful rural setting would be shattered.	It is recognised that the Purple/B, Green/C and Red/D options would affect the visual amenity of people currently unaffected by a highway. However, the Orange/A option would still represent a significant change to the visual environment in that the new highway would be raised to avoid floods and would in places be realigned. This would change the relationship of the highway to the existing highway towns and to the hinterland to its south.	160
632	The report states that Purple/B option "generally follows the edges of land use units, thereby integrating with its surroundings". I fail to see how a six lane motorway running along a bush-grazing land interface is somehow better "integrated" into the environment!	The interface between two landscape units generally has a higher ability to accommodate change as differences already exist between components of the overall landscape.	262

Issue No.	Comments on visual impacts	Response	Stakeholder ID
633	With a road embankment of 2-3 metres and up to 6 metres on a relatively flat floodplain, the Orange/A option would have a high visual impact and not low visual impact as claimed. In particular Ulmarra with its proposed high embankment bypass would more likely resemble a walled town rather than a pleasant riverside village.	The visual impact of the Orange/A option in the proximity of urban townships along the Clarence has been assessed as high.	893
634	The Green/C option would pass 300 metres from my home which sits on a rise overlooking this area. My current view of bushland and pasture would now contain a major motorway instead of the grazing kangaroos we have worked so hard to make safe.	The comments are noted. As part of the detailed design phase, measures would be considered to minmise the visual impacts of the proposal, including treatments such as landscape planting and mounding. This would be undertaken in consultation with landholders.	350
635	The report appears to be concerned solely about motorists' visual experience, not that of residents. It seems that the high speed motorists' experience is given more weight than the intrinsic value of undeveloped areas themselves (pre-motorway), or residents' visual experience of such areas.	The intent of the section referred to was not to base the assessment on the motorist's view point but rather acknowledge the fact that if a road is built in a forest or heavily vegetated area that the visual impact will be low because there are few, if any, people to see the road. The conclusion acknowledges that environmental issues and the intrinsic value of undisturbed lands would be affected.	262
636	Both the Green/C and Red/D options are assessed to have a relatively high visual impact. Properties on the Green/C and Red/D options currently experience outlooks over natural stands of flora, grazing land, cane farms, coastal forests and the residents in these areas enjoy a relatively peaceful environment. The visual impact of a four lane highway is very removed from the current experience.	This comment is consistent with the findings of the visual report. The report acknowledges that there would be visual impacts that would be difficult to manage.	483, 1956
637	The Purple/B option will have a high negative visual impact.	The comments are noted. As part of the detailed design phase, measures would be considered to minmise the visual impacts of the proposal, including treatments such as landscape planting and mounding. This would be undertaken in consultation with landholders.	166, 2379
638	Some of the impacts such as visual impact can be minimised with good design.	Urban and landscape design would be included in the design process.	281
639	The Purple/B option would include a large and ugly cutting through the bills south of Tyndale.	The visual impacts of the cuts have been assessed as generally being able to be mitigated through use of appropriate batter slopes and the planting of vegetation.	949

Issue No.	Comments on visual impacts	Response	Stakeholder ID
640	From the point of view of Pillar Valley and other rural residents, the report's criteria with respect to visual impacts are round the wrong way: the visual impact of a motorway would be infinitely less in already developed and cleared areas, such as the existing highway.	Visual impacts are a product of an area's ability to absorb change from a view point, the number of people that would see a new road, and also the character of the environment where the road would be located. Generally, if an area cannot be seen or seen by few people then the visual impact will be assessed as low. Nevertheless, it is recognised that residents and communities that are currently unaffected by a highway and particularly those who live in the more remote and secluded parts of the study area, would experience a higher impact. This issue is a consideration in the preferred route selection process.	262
641	The Orange/A option avoids impacts to the eastern valley and hills, thereby preserving this pristine natural wilderness which offers variety from the floodplain of the Clarence Valley. Placing the highway in the vegetated foot hills in the east to minimise visual impacts is not acceptable considering the high ecological values and visual amenity of these areas. The visual impacts of the Orange/A option should be noted as less than other options as this route alignment mainly follows the existing highway and hence is consistent with this form of development in the area.	Refer to response for issue number 640.	275, 2106, 2609

4.3.27 Amenity

Issue No.	Comments on amenity	Response	Stakeholder ID
642	Expressed concern about impacts on lifestyle or health: ■ The highway will compromise the specific lifestyle choices that people have made with respect to tranquillity and serenity of the surroundings. ■ It will no longer be a nice place to live or raise children. ■ People have built their homes to take advantage of natural features of the area, which would be directly impacted by one option and indirectly impacted by another. ■ People moved into this area for health reasons. These health conditions are likely to be worsened by the presence of motorway. ■ Uncertainty around this upgrade is already causing considerable distress. ■ No compensation is available for these types of impacts. ■ The project will result in impacts on the amenity enjoyed from the abundant wildlife and rich and healthy plants in the area.	The information provided during the route options display period indicated an estimation of the number of potentially affected properties and includes properties where one or more of the route options pass within a property boundary. It is acknowledged that each of the route options would to some degree affect residents and communities that are currently unaffected by a highway. In particular, the eastern part of the study area is valued by those who live there for its isolation and bushland character. This issue is a consideration in the preferred route selection process. Impacts to the local community can not be entirely avoided where a new highway is being constructed. Further, the social and economic effects of route options must be considered in conjunction with environmental and functional issues. In this context, the preferred route will be the one that 'on balance' best meets these aspects, while taking costs into consideration. As part of the design process the RTA will develop measures to address noise and visual impacts and privacy issues. Guidelines and criteria are provided by regulating authorities to ensure impacts are minimised as much as possible.	149, 163, 166, 174, 175, 247, 275, 284, 289, 326, 328, 350, 362, 376, 417, 420, 426, 430, 454, 465, 466, 479, 483, 486, 494, 501, 502, 604, 863, 942, 949, 950, 976, 1017, 1087, 1099, 1142, 1172, 1212, 1224, 1331, 1355, 1357, 1491, 1493, 1632, 1707, 1850, 1885, 1887, 1970, 1975, 1983, 1989, 1998, 2075, 2082, 2093, 2094, 2096, 2145, 2151, 2159, 2174, 2219, 2221, 2231, 2238, 2255, 2265, 2276, 2293, 2299, 2318, 2320, 2328, 2333, 2334, 2355, 2359, 2360, 2368, 2379, 2391, 2397, 2401, 2402, 2406, 2408, 2416, 2417, 2418, 2420, 2423, 2426, 2427, 2428, 2429, 2430, 2431, 2440, 2447, 2452, 2464, 2479, 2486,

Issue No.	Comments on amenity	Response	Stakeholder ID
643	My property will suffer a drop in amenity by virtue of the sighted presence of the motorway facilities and associated noise, visual and other pollution. The prevailing winds were not considered in design of the Green/C and Red/D options and will not allow respite from noise.	The comments are noted. As part of the detailed design phase, measures would be considered to minmise the visual impacts of the proposal, including treatments such as landscape planting and mounding. This would be undertaken in consultation with landholders.	166, 268, 350,363, 376, 417, 426, 465, 474, 486, 494, 898, 942, 1017, 1172, 1331, 1611, 1866, 1970, 1978, 1989, 2093, 2094, 2096, 2159, 2231, 2246, 2276, 2293, 2301, 2312, 2320, 2328, 2368, 2391, 2397, 2401, 2402, 2406, 2417, 2418, 2423, 2426, 2430, 2431, 2452, 2464, 2486
644	There will be an impact on the outdoor lifestyle that the community is accustomed to.	It is not considered that an outdoor lifestyle will be substantially impacted by the preferred route.	289, 420, 2428, 2429,
645	Amenity for the local communities will be compromised for the convenience of travellers between Sydney and Brisbane who will benefit from only 8-10 minutes reduction in travel time.	The project objectives, including the reduction of road crashes and serious injuries; reduced travel times, reduced freight transport costs, and the provision of a route that supports economic development are considered to benefit both the local community as well as the wider community.	2333, 2408

Issue No.	Comments on amenity	Response	Stakeholder ID
646	Expressed concern about health impacts: ■ Impacts on residents living away from highway environment for health reasons ■ The Green/C and Red/D options are not suitable because of impacts of pollution and noise, therefore health and wellbeing issues ■ Data from the Medical Journal of Australia indicates that the chance of contracting childhood leukemia is greatly increased when exhaust emission pollution is increased. The same applies for asthma and other respiratory diseases. These impacts are not mentioned or assessed in the Options report ■ Having to close doors and windows to reduce noise and increase privacy will greatly reduce our house's comfort and practicality as it has been specifically designed to take advantage of natural environment and oriented to take account of breezes, sunlight etc. ■ Concern that existing health issues will be worse.	Potential air quality impacts are discussed in Section 5.3.5 of the Route Options Development Report (RTA, 2005). Modelling results have been assessed against the criteria established by the Department of Environment and Conservation. Historical data from monitoring of other sections of the Pacific Highway indicate that sampled pollutant concentrations near the road are well below the criteria set by the Department of Environment and Conservation. Health risks are considered in the context of standards established by the DEC, that are reflected in the air quality criteria.	166, 266, 402, 2075, 2082, 2255, 2439, 2447
647	There will be a loss of river front access to residents and other recreational users.	Land required for the road corridor will be limited to the area required to build a safer road for the local and wider community.Any impacts to river front access would be a design consideration and would be minimised as much as possible.	465, 491, 494, 520, 530, 971, 2335, 2420, 2439, 2505, 2506, 2507
648	Litter, noise and smell would all harm the natural environment here and make a much less pleasant place to live. Noise and pollution is a major concern for us. Your proposed road will echo straight up the valley and so will the emissions from traffic. The Orange/A option will result in noise and pollution effects on Ulmarra Public School.	Refer to response for issue number 646. Noise mitigation can be a significant component of road project costs. At the route selection stage there is no requirement to develop a full noise assessment for each option which includes these costs. Each option has been assessed on the basis of unmitigated noise impacts for the purposes of enabling comparison of noise impacts of each option. More mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage in accordance with Department of Environment and Conservation requirements and in discussion with landholders.	175, 1885

Issue No.	Comments on amenity	Response	Stakeholder ID
649	People living on existing Pacific Highway do so by personal choice and are already noise and pollution affected. The Orange/A option won't affect our peaceful lifestyle.	Although residents and businesses on the existing highway are already exposed to road impacts such as noise and pollution, characteristics of their location have changed over time: traffic volumes and truck numbers have grown substantially, population density and vehicle conflicts create safety concerns and the design of the proposed upgrade will be larger in scale than the existing route.	2266, 2566

4.3.28 Tourism

Issue No.	Comments about tourism	Response	Stakeholder ID
650	The options would have a detrimental effect on tourism in the whole of the Clarence. Tourism would be impacted as a result of reductions in traffic and during the construction period.	▪ Consultation with business owners in the Clarence Valley has indicated that the proximity to and ease of access to and from the highway is important to the viability of business. More generally, respondents identified key success factors for economic development of the area – these factors included developing residential, tourist and industrial infrastructure and services and maintaining proximity of highway through traffic to Grafton and Maclean. The potential to locate interchanges close to these towns to maximise visitation has therefore been considered in the assessment of the route options. However, Grafton and to a lesser extent Maclean rely primarily on the population within the the towns themselves and the surrounding sub-region for viability, rather than being largely dependent on highway traffic.	491, 520, 1632, 2335, 2427,
651	The existing highway will be a tourist route with an alternative highway located elsewhere. The upgrade would benefit travellers by reducing travel time and distance.	The comment is noted.	612, 227, 971, 2291
652	The eastern hills and valleys are a natural regional asset and their location makes them well positioned for hinterland ecotourism particularly in the winter months when coastal areas are less visited.	It is not considered likely that any route options would substantially impact on the ecotourism potential of the area, as large areas of remnant bushland would remain within National Parks, State Forests and on private land.	275

Issue No.	Comments about tourism	Response	Stakeholder ID
653	Other areas bypassed have gained a lot of tourists due to the reduction in heavy vehicles.	Evidence from other areas is that towns that are bypassed by road upgrades generally benefit from reductions in traffic volumes and improved amenity. However, the impacts of each project must be assessed taking into account the specific circumstances of the local economy.	156
654	Tourism is the largest economic driver for the region. People are attracted to the area because of the pristine and untouched environment, with beautiful beaches, bushland and abundant wildlife. Ecotourism is a particular opportunity in this area because of the high quality natural environment. A motorway through the coastal bushland will detract from the attractiveness and may result in fewer tourists to the area. The costs to this area's largest economic driver should have been covered in cost estimates.	The process for selecting a preferred route takes into consideration functional, social, economic and environmental impacts from the project. Impacts on tourism are considered with other social and economic impacts. It is likely that tourism in the local area would benefit from the Pacific Highway Upgrade Program as a whole due to improved accessibility from major population centres and improved travel safety, both of which are likely to contribute to encouraging increased visitation. The effect on potential ecotourism revenues is regarded as an economic impact in the route selection process rather than an economic cost to be included in the strategic cost estimate. The road would be designed to avoid direct impacts on nature reserves and bushland areas to the greatest extent possible.	163, 268, 491, 1632, 1953, 1998, 2106, 2217, 2427, 2380, 2463
655	The Orange/A options seems the only option which avoids a devastating impact on our beautiful region. It needs also mentioning that this area is one of the few remaining areas for domestic travellers to spend holidays in peace and quiet.	Under any option, the main tourist destinations in the Clarence Valley on the coast would avoid direct and indirect impacts. The Land Acquisition Policy and the *Land Acquisition (Just Terms Compensation) Act, 1991* enables the RTA to provide monetary compensation only where property is affected by acquisition.	2349, 2609

4.3.29 Property acquisition and compensation

Issue No.	Comments about property acquisition and compensation	Response	Stakeholder ID
656	Expressed concern about compensation: ■ Compensation is required for land area and homes where new highway will go through properties. ■ Compensation should include all land, buildings, plant and equipment lost due to highway. ■ Compensation should include loss of agricultural land and losses to income from the land due to highway severing existing properties. ■ Need to use current sale figure for properties during acquisition process. ■ Market value will not compensate adequately for loss of property. ■ Market value should include all taxes and rates. ■ Land acquisition is in the power of the RTA. ■ Land owners will bear costs as part of the acquisition process. ■ Property owners will be forced to sell and relocate.	The *Land Acquisition (Just Terms Compensation) Act, 1991.* guarantees that if and when the land is acquired by the RTA under that Act, the amount of compensation will not be less than market value (assessed under that Act) unaffected by the road proposal. The Act lists matters to be be considered in determining the amount of compensation. These matters are the market value of the land on the date of its acquisition, any special value to the person on the date of its acquisition, any loss attributable to severance, any loss attributable to disturbance, solatium, any increase or decrease in the value of any other land of the person at the date of acquisition which adjoins or is severed from the acquired land by reason of the proposed road. One objective of the Act is to encourage the acquisition of land by negotiated purchase in preference to compulsory process. The RTA fully supports this objective. Further, where owners experience difficulty in selling their property if part or the whole is designated for acquisition for roadworks, then a written application can be made to the RTA requesting acquisition under the 'hardship' provisions of the Act. To meet the Act's criteria for 'hardship', an owner must demonstrate that it has become necessary to sell for pressing personal, domestic or social reasons or to avoid a loss in income and that attempts to sell have been unsuccessful because of the designation for acquisition by the RTA. This process is intiated with the announcement of the preferred route.	125, 149, 150, 159, 163, 175, 180, 237, 244, 247, 262, 266, 268, 273, 289, 322, 342, 350, 356, 360, 402, 426, 439, 454, 465, 491, 521, 529, 530, 612, 614, 621, 622, 628, 876, 902, 942, 954, 976, 1001, 1011, 1062, 1087, 1099, 1108, 1115, 1142, 1171, 1205, 1212, 1260, 1489, 1493, 1534, 1535, 1583,1625, 1632, 1652, 1729, 1783, 1850, 1852, 1855, 1866, 1870, 1885, 1897, 1909, 1917, 1937, 1953, 1956, 1978, 1983, 2055, 2075, 2096, 2105, 2106, 2138, 2150, 2174, 2220, 2229, 2230, 2231, 2234, 2238, 2276, 2279, 2283, 2291, 2293, 2307, 2320, 2334, 2355, 2376, 2380, 2391, 2406, 2417, 2418, 2420, 2427, 2430, 2440, 2463, 2486, 2505, 2506, 2507

Issue No.	Comments about property acquisition and compensation	Response	Stakeholder ID
657	Cost should not be the prime factor. If 1km or 2km radius was used to compensate landowners, how would the cost compare with each option ?	Refer to response for issue number 2.	268, 420
658	Compensation needs to consider plans for subdivision of existing land that may be in place.	Compensation is for the highest value of the land. Where approval has been obtained for subdivision, RTA would consider this as part of the land acquisition process.	465, 521, 1625, 2293
659	Expressed concern about the lack of compensation for properties which are not acquired: ■ Environmental (eg water, noise, air) and social (eg visual and amenity) impacts caused by the highway will cause a drop in the value of the land. ■ Properties in the vicinity of the highway will drop in value and drop in resale potential. ■ No compensation will be offered to properties not directly affected by the road corridor. ■ No compensation will be offered for loss of lifestyle.	The *Land Acquisition (Just Terms Compensation) Act 1991* is the mechanism used to compensate landowners for land that is directly affected by the preferred route. The RTA has no statutory mechanism to provide monetary compensation for property owners not directly impacted through acquisition of land for the project. Where land is not acquired as part of the land acquisition process, mitigation measures are implemented to reduce the impacts to the local community as much as possible. Criteria set by regulatory authorities (for example, NSW Department of Environment and Conservation) will be used to determine the level of mitigation required to meet these criteria. Other measures such as landscaping and urban design treatments would be incorporated in the design to reduce impacts on adjoining properties.	159, 160, 166,163, 175, 247, 262, 266, 268, 326, 342, 350, 360, 402, 439, 454,465, 479, 486, 494, 604, 608, 622, 876, 942, 1062, 1144, 1171, 1172, 1493, 1611, 1632, 1850, 1866, 1871, 1910, 1937, 1953, 1956, 1970, 1975, 1978, 1989, 2096, 2106, 2133, 2174, 2203, 2231, 2234, 2238, 2276, 2280, 2293, 2318, 2320, 2327, 2334, 2359, 2360, 2379, 2391, 2406, 2417, 2418, 2420, 2427, 2430, 2439, 2440, 2446, 2463, 2464, 2486, 2505, 2506, 2507
660	Where routes pass through cane and agriculture land, the market value for the land will be reduced.	Where the route directly affects any agricultural land, this land will be acquired at highest market value in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*. Market value is determined on the basis that the land is unaffected by a road proposal, and this process therefore negates any drop in land value attributed to the proposed road.	2246

Issue No.	Comments about property acquisition and compensation	Response	Stakeholder ID
661	Timing for acquisition/compensation. Lives are on hold until property owners know what land and is to be acquired.	The RTA recognises that this process creates uncertainty. Impacts on individual properties are not able to be determined until the concept design and detailed environmental assessment have been completed. Only when a preferred route has been identified and designed in detail, and the project approved, will it be possible to determine the full extent of property acquisition required. Negotiation with affected property owners would then commence and land acquisition would proceed in accordance with the *Land Acquisition (Just Terms Compensation) Act, 1991*.	1535, 1897, 1062
662	Does the RTA relocate property owners to a location that offers the same lifestyle and quality of life?	RTA does not relocate property owners as part of the land acquisition process.	175, 902, 1021
663	Are service centres included in the 250m corridor or will additional land be required?	The RTA has not made allowance for Service Centre.	1866
664	What is the current RTA land acquisition policy?	The RTA is able to compensate property owners for *direct* property impacts in accordance with the *Land Acquisition (Just Terms Compensation) Act, 1991*.The RTA Land Acquisition Policy is available by phoning 1800 557 673 (toll free) or by visiting the RTA website at www.rta.nsw.gov.au	262

Issue No.	Comments about property acquisition and compensation	Response	Stakeholder ID
665	If only part of the land is acquired, the remaining portion will have no resale value. Severance of land would not meet Council's 100 acre building regulations.	The loss of resale value of partial acquisition is included in the compensation package. The method for assessing compensation for a partial acquisition is known as the "Before & After" method which requires two valuations to be carried out. The first valuation if of the whole of the property unaffected by road proposals. The second valuation, as at the same date, is of the residue land (ie, land that is not acquired as part of the proposal) considering the impacts of the road proposal. The difference between the two valuations is the payment for the land to be acquired and includes any reduction in value of the residue land. Any confirmed loss of building entitlement will be compensated accordingly. RTA will also consult with Council with regard to building regulations and the amount of land available to meet these regulatory requirements. Again, in some instances there may be opportunities for Council to agree to smaller land parcels. This will be at the discretion of the Clarence Valley Council. Further, where owners experience difficulty in selling their property if part or the whole is designated for acquisition for roadworks, then a written application can be made to the RTA requesting acquisition under the 'hardship' provisions of the act. To meet the Act's criteria for 'hardship', an owner must demonstrate that it has become necessary to sell for pressing personal, domestic or social reasons or to avoid a loss in income and that attempts to sell have been unsuccessful because of the designation for acquisition by the RTA. This process is intiated with the announcement of the preferred route.	175, 474, 608, 1493, 1611, 1707, 1885
666	Organic farmers will not be certified to operate near the highway and will need compensation for their entire property.	Compensation can only be paid for the acquisition of land. The RTA will not acquire more land than that required for road.	1887
667	Can the RTA guarantee that they will not require land outside the 250m corridor.	At this stage of the project the alignment has not been designed and hence a 250m corridor is used to idenity the possible extent of land potentially affected by an option. The alignment could be anywhere within that corridor. While every effort will be taken to locate the preferred route in the corridor previously identified, there may be some minor changes required following further investigation and consultation. Any new potentially affected property owners that are identified during the planning and design stages of the project will be consulted as part of the process.	2321

Issue No.	Comments about property acquisition and compensation	Response	Stakeholder ID
668	By counting houses only very close to the route, the Orange/A option which follows existing roads, comes out with a high number of directly affected houses. The Purple/B, Green/C and Red/D options pass through bush and have fewer houses in their corridors. SKM should have counted all houses impacted by noise, visual, air or tank water pollution, say within 2km of the route i.e. approximately 400 houses. Using urban criteria in a bush environment is misleading and unfair.	The number of directly affected houses reflects the number of houses which would potentially have to be acquired. The number of houses impacted by noise have also been calculated through the modelling of noise impacts across the study area and reported in the Route Options Development Report (RTA, 2005). Impacts on air quality, water quality and visual characteristics have also been considered in the assessment of the route options. Iincreasing the width of area beyond the corridor for the purposes of idenfying potentially affected houses for Purple/B, Green/C and Red/D would increase the number ppotentially affected for Orange/A as the concentration of houses within the study area is higher along the Orange/A route option. At this stage of route devlopment, the infromation presented and the assessment undertaken is sufficient to enable a comparison the relative potential impacts of the route options. issues of impacts on the lifestyle and amenity of rural and rural residential areas have been considered by the project team.	268, 275

4.3.30 Local access

Issue No.	Comments on local access	Response	Stakeholder ID
669	We would envisage difficulties regarding access to the proposed upgraded Pacific Highway as a means for us to attend our local shopping centres and medical centres, including access to Grafton, Tucabia, Ulmarra, Pillar Valley, Yamba and other communities throughout the district.	The local road network would generally be maintained in its current form. Where required, local service roads would be provided to maintain local access. Where local roads cross the proposed alignment, underpasses or overpasses will generally be provided. While the local access would not in all cases be identical to the existing situation, the design would minimise the changes as far as practically possible.	266, 271, 426, 474, 1142, 1535, 1729, 1975, 2082, 2174, 2301, 2379, 2397, 2476, 2499
670	There will be loss of river front access to residents and other recreational users.	Land required for the road corridor will be limited to the area required to build a safer road for the local and wider community. Any impacts to river front access would be a design consideration and would be minimised as much as possible.	612

Issue No.	Comments on local access	Response	Stakeholder ID
671	The Orange/A option is the least desirable option because if people want to shop in Grafton, they will continue to do so using the existing infrastructure.	Access to Grafton will be required for any of the proposed options. The Orange/A option provides the best opportunities to use the upgraded highway. Access will be via existing infrastructure. Access would be via interchanges at Iluka Road or south of Clarence River and then the proposed interchange at Swan Creek. The other options would generally use the existing infrastructure.	2230
672	The motorway will impact on farm access.	Access to properties will not be provided directly from the upgraded highway, rather local roads and service roads will be provided as required. Sufficient service roads will be required to ensure no property is without access. In situations where properties are severed by the preferred route, the RTA would negotiate with individual land owners and occupants to determine appropriate means of access. This may include overpasses, underpasses, alternative access or the purchase of the isolated parcel of land.	893, 1162
673	Does the Orange/A option allow the existing stretch of road between Ferry Park and Harwood Bridge, Yamba and Maclean turn offs to be used locally without having to access the new highway or having to drive through the centre of Maclean?	The Orange/A option would include a service road to allow access to properties and local roads between Swan Creek and Harwood.	170
674	When a new highway cuts a local road, are there standards for the maximum detour that people might have to make along a service route, if access is not provided by an underpass or overpass? In other areas of the highway, what is the maximum and average detour in such cases?	There are no standards detailing detour lengths along service roads when a local road is severed. However the RTA attempts to maintain the local road system in a configuration similar to existing conditions, generally through the provision of overpasses, underpasses and minor deviations. It should be emphasised that it is the RTA's intention to minimise the inconvenience and vehicle kilometres travelled as a result of a project.	262
675	Hopefully if the Purple/B option was adopted we would be provided with a flood free access road. This could be within the 200 metre route corridor.	The comments have been noted. At this stage of the project, the details of the service roads required for each route have not been determined.	949

Issue No.	Comments on local access	Response	Stakeholder ID
676	What are the criteria for determining where access to get over or under the upgraded highway will be provided.	The local road network will generally be maintained in its current form. Where required, local service roads will be provided to maintain local access. Where local roads cross the proposed alignment, underpasses or overpasses will generally be provided. While the local access will not in all cases be identical to the existing situation, the design would minimise the changes as far as practically possible.	1917
677	By maintaining the existing highway as a tourist route and creating an alternative highway elsewhere for through traffic and heavy vehicles, there will always be an alternate route tor use in times of emergency such as bushfires or accidents.	It is acknowledged that the existing highway would serve as an alternative route in times of emergency. It should be noted that with the construction of a Type M upgrade, an alternative route will also be provided for the Orange/A option through a network of service roads.	289, 356, 491, 520, 530, 612, 971, 993, 1159, 1958, 2131, 2291, 2380, 2335
678	It is difficult to assess full social impacts when service roads and crossing points on the local road network are not known.	At this stage of the project, the details of the service roads required for each route have not been determined, however, the local road network will generally be maintained in its current form. Where required, local service roads will be provided to maintain local access. Where local roads cross the proposed alignment, underpasses or overpasses will generally be provided. While the local access will not in all cases be identical to the existing situation, the design shall minimise the changes as far as practically possible.	275

4.3.31 Interchanges

Issue No.	Comments on interchanges	Response	Stakeholder ID
679	Options other than Orange/A do not provide suitable access to Grafton.	The development of options across the study area has led to the provision of routes that avoid the flooding and soft soils issues of the floodplain. One of the drawbacks is that they are located a greater distance from Grafton. It is acknowledged that access to Grafton is one important consideration, however the selection of the preferred route will be one that, 'on balance', meets the project objectives.	149, 160, 169, 175, 350, 362, 1632, 2278, 2283, 2427

Issue No.	Comments on interchanges	Response	Stakeholder ID
680	The Orange/A option provides better access to the motorway for local users.	It is acknowledged that Orange/A option provides better access for local users.	160, 362, 1989, 2173, 2318, 2379,
681	Maclean is disadvantaged by lack of interchanges into our town.	It is proposed to include an interchange south of the Clarence River, near Maclean. Should one of the Green/C or Red/D Options be selected the interchange would be located close to the existing interchange on Yamba Road. Should the Orange/A or Purple/B Options be selected, the interchange may be located close to the existing interchange on Yamba Road or near the southern access into Maclean at Cameron Street. At this stage no decision has been made on the final interchange arrangements, however, access into Maclean is expected to be similar to the existing.	2117
682	The size of the proposed interchange at Harwood would impact on the Harwood and James Creek communities to a great degree. The interchange and new bridge would necessitate the resumption of many of the houses and create a very busy hub with service centres, and on and off ramps which would affect the amenity of those who live within 5 km of the site. The communities of James Creek and Gulmarrad will be affected by the additional noise of the interchange yet the Options report does not recognise or assess these factors.	The exact size and location of the interchanges would be determined during the concept design of the preferred route. Indicative locations of the interchanges are shown on the display material to provide an indication of the land acquisition that would be required. Typically on and off ramps extend between 600 and 800 metres either side of an interchange. At this stage, no services centres have been planned for the upgrade, but again these will be subject to the same conditions imposed to the highway upgrade. It is acknowledged that an interchange will create various turning movements and likely impact on the noise levels, however this will be subject to the same noise criteria and requirement as the other sections of the highway. The impacts of the proposed interchange and new bridge will be further assessed in the environmental impact assessment.	271
683	If interchanges were provided for the Orange/A option, local people would gain benefit from the upgrade. Grafton & Ulmarra businesses would also benefit.	It is acknowledged that Orange/A option provides better access for local users.	1357
684	The Harwood to Iluka Road section will need a second interchange at Harwood (Watts Lane).	Under the arrangements for a Type M upgrade, access to Harwood would be provided by the interchange immediately south of the Clarence River, and use of the existing Harwood Bridge which would serve as a local road (two new highway bridges would be constructed). Under the arrangements for a Type A upgrade, an intersection similar to that currently existing would be provided at Watts Lane.	2183

Issue No.	Comments on interchanges	Response	Stakeholder ID
685	Some thought should be given to an interchange at Wooli Road. This would: ■ provide emergency access ■ assist in long term access to airports and industrial estates; ■ allow Grafton users easier access; ■ make use of the exiting alignment to that point; ■ allows for the expected coastal growth in this area.	The inclusion of an interchange at Wooli would be dependent on the potential benefits versus the cost of providing this. Consideration must also be given to the local impacts of providing an intermediate interchange, such as increased traffic for local roads. Traffic investigations indicate that an interchange is not warranted at this location for the forseeable future. Local access will be maintained such that the existing travel routes will be maintained and existing travel times (to Harwood or Wells Crossing) would not be significantly impacted.	169, 230, 1346, 2164, 2183, 2319, 2340, 2366, 2372, 2473
686	Reduced need for interchanges should not be used to justify a cheaper, high speed motorway in the east.	The selection of the preferred route will be one that, 'on balance', meets the project objectives. The project objectives include a range of aspects encompassing social, environmental and functional (engineering) criteria, while taking costs into consideration.	2106
687	If Green/C or Red/C options are chosen, the locations of interchanges will be so inaccessible I will not even bother using the new road if put in.	The comments are noted.	950
688	All options do not have well placed interchanges.	The location of the interchanges has been selected to meet traffic demand and to make use of the existing highway for access, rather than introducing large volumes of traffic to existing local roads.	2238
689	All options would need an interchange near the Harwood Bridge for motorists to access Maclean, Yamba and Harwood.	It is proposed to construct an interchange immediately south of the Clarence River to cater for this traffic.	2246, 2307, 420, 2088, 1956, 426
690	Of the four options my last choice is the Orange/A option. Grafton is a regional centre and as such, it requires heavy vehicles to service it. For this reason an interchange should be provided in a position to encourage them to use the motorway rather than the old highway which will become a road for local traffic. This interchange could also be an asset for tourists and locals to access Wooli, Mini Water, Pillar Valley and Tucabia.	The Orange/A option provides the best access for traffic heading to Grafton. Access to smaller communities such as Wooli, Mini Water, Pillar Valley and Tucabia will generally be via the existing local road network and the location of the interchange will not significantly alter this access.	125
691	The location of interchanges is not that important as people who want to come into our lovely region will if they intend to.	This is supported by studies of previous towns that have been bypassed.	2283, 2359

Issue No.	Comments on interchanges	Response	Stakeholder ID
692	My understanding is that for RTA to consider incurring the cost of an interchange, there must be a potential user traffic flow of at least 2000 vehicles per day. Such a criteria would appear to preclude any modification of the three eastern options in terms of additional access. Accordingly, it is reasonable to conclude that any of the Purple/B, Green/C, or Red/D options (or any combination thereof) will create only a "through road" from Harwood Bridge to approximately Wells Crossing with little or no benefit to the citizens of the Clarence Valley.	The limited local access to the upgrade and local access to Grafton for the eastern routes is acknowledged and reflected in the traffic data that has been put forward on the project. However, a major benefit to the Clarence Valley will be the removal of the through traffic, particularly the heavy vehicles, from the local road network. In regard to the comment of the provision of an interchange, the cost of an interchange is considered to be uneconomical below 2000 vehicles per day, although this is not the only criteria used in the selection of interchange locations.	174
693	There must be an interchange at Grafton.	Interchanges have been provided where the options divert from the existing highway to enable access to Grafton via the existing highway. The location of the interchanges has been selected to meet traffic demand and to make use of the existing highway for access, rather than introducing large volumes of traffic to existing local roads.	2307
694	It is our understanding that no provision has at this time been made for an interchange with Brooms Head Road. However, consideration should be given to the current development trends availability of land beween Townsend and the National Park which is suitable for development. Significant growth of the Maclean commercial areas is also be anticipated. Therefore, if a full grade separated interchange cannot be justified at this time, provision must be made for the incremental construction of an interchange. Sufficient land should be secured to enable a grade separated interchange to be built at a future time and as an interim measure an at-grade interchange should be developed. Brooms Head Road should be re-aligned to enable perpendicular approaches with the new Pacific Highway.	The volume of traffic is not sufficient to justify the cost of building an interchange at this location An interchange would be located just south of the Clarence River that would provide direct access to Yamba and Maclean and indirect access to other destinations such as Brooms Head.	1267
695	Interchanges for the Orange/A and Purple/B options need careful consideration.	Interchanges have been located where the options leave the existing highway to enable access to Grafton via the existing highway rather than pushing traffic onto other roads that have not been designed for that level of traffic. The location of the interchanges has been selected to meet traffic demand and to make use of the existing highway for access, rather than introducing large volumes of traffic to existing local roads.	1139

Issue No.	Comments on interchanges	Response	Stakeholder ID
696	The Orange/A option is the only route that would service the whole of the community of the Clarence Valley, because it provides interchanges near Grafton, Maclean and Ulmarra, which would provide the most social benefits in terms of safety, travel time, value for money, regional and economic development.	Access to the communities of Grafton, Maclean and Ulmarra is an important consideration, however the selection of the preferred route will be one that, 'on balance', meets the project objectives. The project objectives include a range of aspects encompassing social, environmental, economic and functional criteria, while taking costs into consideration.	2106
697	It is difficult to determine exactly who within the local community will benefit from the proposal. Certainly few Clarence Valley residents will have occasion to use the facility should any of the western options be considered, as they cannot be successfully accessed for travel between the major centres of Grafton, Maclean and Yamba.	The Orange/A option would provide interchanges north of Grafton and south of the Harwood ridge which would facilitate use by the local community within that corridor. The project objectives, including the reduction of road crashes and serious injuries; reduced travel times, reduced freight transport costs, and the provision of a route that supports economic development are considered to benefit both the local community as well as the wider community.	231, 502
698	The orange option should include a semi-interchange near Ferry Park, Maclean so as to promote and maintain the economic development of both Maclean and Grafton.	All options include an interchange south of the Clarence River, near Maclean. Should one of the Green/C or Red/D Options be selected the interchange would be located close to the existing interchange on Yamba Road. Should the Orange/A or Purple/B Options be selected, the interchange may be located close to the existing interchange on Yamba Road or near the southern access into Maclean near Ferry Park. At this stage no decision has been made on the final interchange arrangements, however, access into Maclean is expected to be similar to the existing.	244
699	While the Purple/B option makes its way somewhat closer to Grafton than the Green/C or Red/D options, it is still too far away to have any real benefits to road users of the Clarence Valley.	It is acknowledged that the eastern options (Purple/B, Green/C and Red/D) do not facifilate the same level of use of the upgrade by the local community as the orange/A. The benefit of these options to the local community is the reduced traffic on the existing Pacific Highway and in particular a reduction in the number of heavy vehicles.	350
700	The need for Grafton to have a viable link to any highway is neglected by the Orange/A and Red/D options.	The Orange/A option provides interchanges at Four Mile Lane and Swan Creek, allowing for access into Grafton. For the other options, the interchanges are generally provided where they leave the existing highway alignment in order to make use of that corridor for connection to Grafton.	393

Issue No.	Comments on interchanges	Response	Stakeholder ID
701	The people who still live on the existing highway will not have access onto the new upgraded highway.	Access to properties will not be provided directly from the upgraded highway, rather service roads will be provided as required. Sufficient service roads will be required to ensure no property is without access.	474
702	Not having an interchange at Pillar Valley would help preserve the character of Wooli and Minnie Water.	At this stage, an interchange around this location is not warranted on traffic grounds and has not been included.	949
703	What criteria will be used to determine where highway interchanges will be sited and where access to get on or off the upgraded highway will be provided?	Interchanges along the highway would generally be provided where it intersects with major roads and the traffic demand justifies the cost.	1917
704	People will need to travel further to access the motorway.	The local road network, including the existing Pacific Highway will be maintained, basically in its current form. Therefore, local users will be able to use their existing travel routes to the interchanges locations.	2155
705	Heavy traffic which must call in for deliveries at Grafton must be encouraged directly back to the four-lane divided motorway without being tempted to use the downgraded Pacific Highway to get back to the motorway. Therefore, an interchange as directly to the east of Grafton as possible should be provided. There is no point in having an interchange so far to the south of Grafton that heavy freight drivers cannot be bothered to double back all the way to that interchange.	The interchanges are generally provided where they leave the existing highway alignment in order to make use of that corridor for connection to Grafton. It is expected that access between Grafton and the interchange locations will be along the existing highway. If an interchange was to be constructed elsewhere to the east of Grafton it would either require traffic to use local roads or for a new access road to be constructed.	2278
706	The Orange/A or Purple/B options allow easy access to Grafton City and the Regional airport. It is important that an interchange provides access to both the airport and city for social and economic reasons.	The comments are noted.	2382

4.3.32 Safety

Issue No.	Comments on safety	Response	Stakeholder ID
707	The improvement in safety by reducing traffic volumes on the current highway (35% according to RTA) will quickly diminish over time as local traffic increases due to population growth.	Population growth is predicted to be about 1.5% p.a. If this materialises, then the traffic volumes on the existing highway would reach their current levels in about 15 years from the opening of the new road.	604, 2383,

Issue No.	Comments on safety	Response	Stakeholder ID
708	One of the primary concerns associated with the upgrades is that the Pacific Highway is the main transport corridor. Issues associated with this include safety, and heavy use by road freight and B-Doubles.	All options would provide a safer road, improving the safety associated with the movement of heavy vehicles.	2032
709	The highway upgrade should provide a safer highway for all users including residents of the Clarence Valley. If 65% of all the present traffic on the existing highway is local traffic and majority of fatalities on the existing highway is from local traffic, then the highway upgrade alone will not address the local safety issue as local traffic will continue to use the existing highway. 50% of the trucks will continue to use local roads as they have destinations within the study area.	There would be a reduction in the number of crashes on the existing highway with any of the options in place, due to a reduction in volumes and removal of half of the heavy vehicles that would otherwise use the existing highway. One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any option. An allowance in the order of $110 million has been included in subsequent estimates.	125, 160, 163,174 , 175, 247, 262, 266, 268, 275, 346, 356, 362, 375, 376, 393, 430,436, 483, 604, 621, 892, 1349, 1583, 1632, 1795, 1912, 1953, 1965, 1978, 2032, 2117, 2173, 2217, 2232, 2234, 2238, 2246, 2255, 2278, 2307, 2321, 2322, 2379, 2383, 2420, 2427, 2440, 2479, 2505, 2506, 2507
710	The eastern options (Purple/B, Green/C & Red/D) will not provide any substantial improvement to the safety of local traffic as they will not be used by local traffic. Accident statistics reveal that most of the fatalities on the Pacific Highway are local residents.	While the Orange/A option would maximise travel on the upgraded highway, each of the options would result in an improvement in traffic conditions on the existing highway, due to reduced volumes of cars and trucks in particular. Between 2011 and 2021, it is estimated there will be almost 815 crashes on the existing highway if no upgrade is undertaken. Each of the four route options would result in a reduction in study area crashes over this period, by 18% (Red/D), 17% (Purple/B) and 25% (Orange/A). One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any option. An allowance in the order of $110 million has been included in subsequent estimates.	125, 160, 163, 174 , 175, 247, 262, 266, 268, 275, 346, 356, 362, 393, 430, 483, 604, 1349, 1632, 1795, 1912, 1953, 1965, 1978, 2117, 2173, 2217, 2232, 2238, 2246, 2379, 2420, 2427, 2505, 2506, 2507

Issue No.	Comments on safety	Response	Stakeholder ID
711	All options improve safety. However, if safety is a paramount issue for the RTA, then the Orange/A option is the only alternative since 90% of current traffic will use this option.	It is acknowledged that the Orange/A option would perform best with respect to the safety objectives. However, all options would significantly reduce crashes, particularly crashes involving heavy trucks. Each of the four route options would result in a reduction in study area crashes over this period, by 18% (Red/D), 17% (Purple/B) and 25% (Orange/A).	163, 262, 266, 271, 362, 376, 604, 621, 1583, 1953, 2082, 2234, 2322
712	We are happy with the current Pacific Highway.	The comment is noted.	2277
713	No road is ever safe, we will always see many die on the roads. Accidents happen due to careless driving, drivers who speed and are fatigued. Accidents happen on motorways as well. The highway upgrade does not guarantee lives.	Motorway-standard roads such as proposed for the Wells Crossing to Iluka Road section of the highway are the safest type of road for carrying large volumes of traffic. They separate opposing traffic streams, reducing head-on collisions, and they reduce conflict between through traffic and turning traffic, by having all interchanges grade-separated. Any crashes that do occur are likely to be less serious than on roads like the existing highway.	426, 892, 2189
714	Safety is the most important factor. Far too many lives are being lost on the highway and far too much procrastination has taken place by the State and Federal Government. An effective link between Sydney and Brisbane which reduces the incidence of accidents and saves lives is what is important.	The comments are noted.	237, 244, 247, 529, 892, 1205, 1205, 1965, 2132, 2237, 2278, 2359, 2361, 2370, 2437,
715	Any four-lane divided motorway moving heavy through traffic off the existing highway will make it safer for locals to use the current Pacific Highway. The motorway should be engineered to ensure road safety issues should be met equally by any option.	While the Orange/A option would maximise travel on the upgraded highway, each of the options would result in an improvement in traffic conditions on the existing highway and would result in study area would result in a reduction in study area crashes over this period. One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any further consideratoin of the Purple/B, Green/C or Red/D options in order to improve safety. An allowance in the order of $110 million has been included in subsequent estimates.	119, 163, 170, 227, 231, 356, 491, 520, 530, 898, 993, 1162, 1349, 1850, 1958, 2237, 2278, 2335, 2362, 2370, 2380, 2388, 2437, 2478

Issue No.	Comments on safety	Response	Stakeholder ID
716	The shortest route (the Red/D option) is the safest option for travellers as there is less time for fatigue. The extra 9km on the Orange /A option brings driver fatigue and costs lives.	At 110km/hour, the distance between Wells Crossing and Harwood would take between 33 and 38 minutes, depending on the option. This is compared with about 48 minutes at the speed limit on the existing highway. The relative travel times have been considered in the context of economic value of time and other evaluation statistics. The relatively small differences in route length would not significantly effect the performance of each option in respect to driver fatigue. All options would perform equally in this respect.	2283
717	Concerns have been raised regarding children being near the highway, particularly with the Orange/A option.	Pedestrian access to the motorway will be restricted, with fencing erected alongside the highway.	175, 1493, 2439
718	Crime statistics in this local area show that eastern areas are more crime-free than homes along the existing highway.	The comment is noted.	175
719	Fog in the area can be dangerous at high speed.	If required there may be scope for implementing variable speed limits to reduce speeds at times of poor visibility, such as in place on the F6 Freeway south of Sydney, which also experiences fog regularly. This issue will be investigated further during concept design.	2304, 2477
720	The information on safety is not based on current information.	There is a delay in the publication of crash statistics. The crash data in the Route Options Development Report (RTA, 2005) were based on data from 2000 to 2003. At the time the report was prepared, this was the most up-to-date crash data available. A more detailed assessment of each option has been made using the recently published and expanded crash data set, including crashes from 2000 to the beginning of 2005. This assessment is a consideration of the preferred route.	2075
721	The Green/C and Red/D options will be straighter and safer.	Each of the options would be designed so permit safe travel at a speed of 110km/hour.	1583
722	The Green/C and Red/D options will be better protected from flood waters, which is also a safety concern.	It is correct that the Green/C and Red/D options cross less of the floodplain than the other options.	1583
723	Will the highway upgrade include rest stops where people can safely stop, access toilets and water, and have a much needed rest from driving? If rest stops are removed or reduced there is more likelihood for fatigue and risk of accident.	The number and location of rest stops for the upgraded highway will be finalised during more detailed design stages of the project.	247, 436, 2178, 2321, 2420, 2505, 2507, 2506

Issue No.	Comments on safety	Response	Stakeholder ID
724	There is no need for a motorway if the existing highway is upgraded and an alternative route for heavy trucks is created.	An upgraded existing highway would provide significant safety benefits for all traffic using it. However, in the longer term (10 – 20 years) after such an upgrade, there would be a need to upgrade to a higher standard road. Motorway-standard roads like that proposed here are the safest type of road for carrying large volumes of traffic. They separate opposing traffic streams, reducing head-on collisions, and they reduce conflict between through traffic and turning traffic, by having all interchanges grade-separated.	247, 1978, 2032, 2121, 2420, 2440, 2463, 2505, 2506, 2507,
725	The first move should be for RTA to reverse an earlier decision to allow B-doubles onto NSW roads, and reduce truck speed limits to 80km/hour.	The comment is acknowledged. The use of B-doubles, with their higher capacity, means that fewer trucks are required to transport the same load.	119, 166, 231, 1162, 1850, 2388
726	Why is the Orange/A option designed to Class M rather than Class A standard? This section of the Pacific Highway has the least traffic of any section between Hexham and the Queensland border, and hence has least need for a full-blown motorway. Traffic data about causes of accidents, and the likely improvements under 'A' or 'M' standard have not been presented. No percentage redactions in the accident rate have been expressed for the Purple/B, Green/C or Red/D options.	All options have been designed and costed to Type M standard to allow meaningful comparison between them. Parts of the Orange/A option and Purple/B option may well be constructed as a Type A road initially, with upgrade to Type M in the future. Type M roads are the safest type of road for carrying large volumes of traffic. They separate opposing traffic streams, reducing head-on collisions, and they reduce conflict between through traffic and turning traffic, by having all interchanges grade-separated. Type A roads have the benefit of separating opposing streams of traffic, but there is more opportunity for conflict between vehicles at intersections. This has implications for the seriousness of the crashes that are likely to occur. Further evaluation of the accident rates and severity has been undertaken during the refinement of the options. This shows that each of the four route options would result in a reduction in study area crashes over this period, by 17% (Refined Red/D), 18% (Refined Purple/B) and 25% (Orange/A), assuming no safety improvments to the existing highway.	166, 262, 362, 2321
727	Many heavy vehicle drivers are a menace to local traffic driving on the highway, especially at night when heavy vehicle numbers increase dramatically.	The comments are noted.	2278

Issue No.	Comments on safety	Response	Stakeholder ID
728	There is no improvement to road safety in the Harwood area.	Without any change in the physical road or in driver behaviour, it is likely that with increased traffic volumes, the number of crashes will also increase. The proposal would improve safety from Harwood to Iluka Road by removing long distance traffic, including trucks from the existing highway.	1850
729	How is it possible for the different routes to be compared, when no assessment is provided for three of the four routes of their performance against the key safety criterion?	Refer to response to issue number 726.	262, 362, 2321
730	Saving time is not a good enough reason to build the highway upgrade as it results in fewer slow down areas and less curves and therefore drivers increases speed.	Improvements in travel time is one of the benefits of providing a safer standard of road. Motorway-standard roads like that proposed here are the safest type of road for carrying large volumes of traffic. They separate opposing traffic streams, reducing head-on collisions, and they reduce conflict between through traffic and turning traffic, by having all interchanges grade-separated.	2321
731	The information available makes no mention of how much accidents actually cost in dollar terms – including cost of accidents, police attendance, clean up, hospital care, and ongoing care etc., with the cost of building the proposed upgrade. The Route Options Development Report for Woolgoolga to Wells Crossing shows a full analysis of crash rates, history, and summaries, including mapped locations and information about the severity of traffic accidents.	The average cost of an injury crash is around $140,000 on a rural road. The generic cost of a fatal crash on a rural road is around $2 million. Refer to response to issue number 726.	362
732	Safety issues will also be a problem with constant changes in traffic conditions.	It is acknowledged that safety risks are generally greater during construction for routes that are adjacent to or utilise the existing highway alignment. The construction of the preferred route option would be planned so as to minimise safety risks on the existing highway.	1583
733	While ecology is important, people and safety are far more important! If one had to choose between the value of human life and that of native animals and plants, I believe it would be immoral to consider anything more important than people.	Safety is an important objective in the development of the upgraded highway. The Pacific Highway Program objectives and the specific project objectives form the basis for the identification of options and for their evaluation. The route options are considered using a range of criteria encompassing functional (engineering), social, economic and environmental aspects. In this context, the preferred route will be the one that, 'on balance', meets these criteria, while taking costs into consideration.	237, 1205, 1937

Issue No.	Comments on safety	Response	Stakeholder ID
734	The Red/D option will remove the most dangerous section of road where people are vulnerable due to fatigue or excessive travelling time.	All options would be designed to reduce the risk of accidents. However, fatigue due to excessive travelling time is a factor which is not influenced by the design of the road. The relatively small differences in route length would not significantly effect the performance of each option in respect to driver fatigue. All options would perform equally in this respect.	2108
735	There is insufficient demonstration of the need for the project. Statistics should be provided on comparative traffic accident rates for upgraded sections of the highway relative to sections that have not been upgraded, and on the causes of accidents. Speed and fatigue are big issues in regards to safety. An upgrade will increase speed and fatigue due people going faster. The upgrade will only save a small amount of time for 30% of traffic.	All of the options would improve travelling conditions for all road users. The new road would provide travel time savings for most users, and travel would be safer. Refer to response for issue number 729.	2321

4.3.33 Traffic

Issue No.	Comments on traffic	Response	Stakeholder ID
736	The Route Options Development Report states that “interstate freight movements were … forecast to decline from 4.0 per cent per annum up to 2020 to 3.5 per cent per annum between 2020 and 2030 and 3.0 per cent per annum from 2030”. It appears that this refers to the percentage of total vehicle numbers. Table 5-3 of the Route Options Development Report, however, shows millions of tons of freight, not traffic numbers, and goes no further than 2020.	This paragraph refers to growth rates for freight vehicles, expressed as a per cent per annum figure. It does not represent the percent of total traffic volumes on the highway that are freight (heavy) vehicles.	262

Issue No.	Comments on traffic	Response	Stakeholder ID
737	There is a general belief that the traffic volumes estimated for those options other than Orange/A Option are at best poor guesses. It appears important that the methodology used be revisited and the previous results closely scrutinised. No one can accept the RTA assessment that nearly 70% of the existing Pacific Highway traffic is local.	One of the key traffic forecasting tools used for this study was a survey of vehicle origins and destinations in the study area, which was used to determine the proportion of traffic that would travel through the study area, as opposed to stopping at say Grafton, or heading west along the Gwydir Highway, for example. The survey was carried out by a reputable and experienced firm, engaged by SKM. The survey recorded the number-plates of all white cars and all trucks at various positions in and around the study area. By identifying where the same number-plate was recorded again, the path taken by that car could be derived. By recording all white cars, a sufficiently large sample was taken to allow expansion across the whole volume of traffic and across the full day. The assignment to the route options and therefore the forecast traffic volumes on each route was based on comparing the forecast travel times on each route with the times using the existing road. Suitable allowances were made for speed limits and average travel speeds for cars and trucks. This is a standard approach to origin/ destination surveys for traffic studies of this kind. Traffic count data for all vehicles was also undertaken by SKM and this was compared to 2004 traffic count data provided by the RTA to ensure consistency. The forecasting methodology used was independently reviewed by one of the senior transport planners in the SKM Melbourne office, who had no other involvement in the project.	294, 893, 1855
738	The Route Options Development Report (page 34) states that the average time between Wells Crossing and Iluka Road was estimated to be about 51 minutes (travelling at the speed limit). However, page 35 states that the average time recorded by SKM was 45-50 minutes, suggesting that their estimate was inaccurate. This leads to an uncertainty of 6 minutes in the base time estimate.	The estimated travel time between Wells Crossing and Iluka Road is around 51 minutes. This was calculated based on the length of the different speed zones on the existing highway. The travel times of vehicles recorded during the origin and destination survey in October 2004 ranged between 45-50 minutes (this is as reported on page 35). This may be explained by some vehicles travelling at greater than the speed limit on sections of the road.	262
739	On page 25, the report states that “[a]n axle pair to vehicle ratio of 1:35 has been used to convert axle pairs to vehicles”. This is wrong.	There is a typographical error on page 34 of the report, which states that the ratio is 1:35. This should read 1.35, and means that there are an average of 1.35 axle pairs per vehicle on the highway.	262
740	I have a child about to get his L plates. We're worried about the highway traffic.	The route options would take at least half of the heavy trucks and one third of the cars away from the existing highway, improving traffic conditions and safety on the existing highway.	1937

Issue No.	Comments on traffic	Response	Stakeholder ID
741	The Orange/A option ranks as the least desired route when addressed by project objectives and design principles. It does not provide the route that maximises the reduction in travel time for Pacific Highway traffic.	The Orange/A option is the longest of the four route options, and as such it has a travel time that would be around 5 minutes longer than the Green/C or Red/D options. The existing travel time between Wells Crossing and Iluka Road is around 45-50 minutes, so it does provide a saving compared to the existing. The Orange/A option maximises the volume of traffic that would use the higher-standard of road, and therefore the travel time savings, while less per vehicle, would benefit a larger number of road users.	2230, 2279
742	The heavy vehicles will have least impact on the Red/D option.	The Red/D option would accommodate about half of the heavy vehicles that currently use the existing highway.	2362
743	RTA figures show that 70% of traffic on the existing highway is local. Why build a new highway for 30% through traffic and leave the local 70% with an old dangerous highway which would have to be maintained by the local Council. The Orange/A option would be used by the vast majority of local and through traffic as well as regional traffic. Hence per vehicle it would be the safest, reduce travel times the most and be the most cost effective option. The small number of vehicles that would benefit from the easterly options does not justify the impacts of these options.	Refer to response for issue number 729. While the Orange/A option would maximise vehicle numbers on the upgraded highway, each of the options would result in an improvement in traffic conditions on the existing highway, due to reduced volumes of cars and trucks in particular. The number of lives lost would reduce by between 30% and 70%. The number of crashes on the existing highway would decrease irrespective of the route option chosen, due to a reduction in traffic volumes and removal of half of the number of heavy vehicles. One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any option. An allowance in the order of $110 million has been included in subsequent estimates.	160, 166, 163,174, 268, 271, 275, 350, 357, 420, 604, 949, 1347,1357, 1868, 1887, 1909, 1953,1965,1983, 2106, 2173, 2217,2227, 2234, 2322, 2399, 2447
744	The option that would see freight transport costs reduced the most is the Orange/A option as more heavy vehicles could utilise this route.	The Orange/A option would have less benefit in terms of freight costs for through traffic than the other options because it is longer. However, it would benefit freight vehicles with local destinations in and around the study area, and therefore would benefit a greater number of heavy vehicles.	163
745	There is too much heavy traffic on the main road and too many accidents	The comment is noted.	2437

Issue No.	Comments on traffic	Response	Stakeholder ID
746	The opening of further sections of highway to the north has made a very noticeable increase in the amount of traffic, particularly heavy vehicles, and I seriously doubt the majority of them are local.	Surveys undertaken for the project of actual vehicles on the highway indicate that about one third of traffic on the existing highway between Grafton and Maclean is travelling through the study area. Historical traffic volume data shows an increase in traffic growth since the start of the Pacific Highway Upgrade Program, and this has been taken into account in the forecasting of traffic volumes for the project. The number of large heavy vehicles on the highway has increased since the opening of the Yelgun to Chinderah section of the upgraded highway.	119, 1212, 1850, 1855 2308
747	This highway should not be built just to help businesses in Grafton; it should be build for the greater good of the travelling public. It should be the shortest route between Wells Crossing and Iluka Road just like the Tweed Heads section.	The comments are noted. The Pacific Highway Program objectives and the specific project objectives form the basis for the identification of options and for their evaluation. The route options are considered using a range of criteria encompassing functional (engineering), social, economic and environmental aspects. In this context, the preferred route will be the one that, 'on balance', meets these criteria, while taking costs into consideration.	2123
748	Traffic volumes are said to be reduced along the current highway by only 30% in the short term, with predictions that, with rapidly increasing population growth, traffic volumes and noise will return to today's levels within a decade, presumably resulting in calls for an urgent upgrade.	As traffic growth is expected to continue, it is likely that in the future some upgrade would be required to the existing highway to cater for the prevailing traffic volumes. Population growth is predicted to be about 1.5%p.a. If this materialises, then the traffic volumes on the existing highway would reach their current levels in about 15 years from the opening of the new road.	231
749	Passenger vehicles would continue to use the existing Pacific Highway. This will ensure that urban areas such as Grafton and Ulmarra would not be disadvantaged by the Red/D option.	Local traffic would continue to use the existing Pacific Highway under the Red/D option, and this equates to roughly 70% of total traffic in the corridor.	2131
750	The Red/D option gets heavy traffic away from residential areas. There would be very few slow moving vehicles joining the highway on Option Red/D.	The Red/D option would take about half of the heavy vehicles off the existing highway.	2362

Issue No.	Comments on traffic	Response	Stakeholder ID
751	If the aim to reduce trucks on the Pacific Highway is met with a rail upgrade an even smaller percentage of trucks would use a motorway if it was constructed along the Purple/B, Green/C, or Red/D options. Clearly this should be considered when selecting the preferred route.	The estimate of the forecast number of trucks using the highway in the future has allowed for the expected growth in rail freight. The majority of trucks on the highway carry general and containerised goods. Rail best carries manufactured goods and bulk goods, as these are more easily transported by rail and less sensitive to delivery time requirements. The mode share to rail is likely to fall rather than increase in the future with or without major investment in rail in the corridor, largely as a result of the significantly lower door to door costs of road. This is not likely to change in the future.	163
752	The Orange/A option largely follows the existing highway, and according to the Route Options Development Report “impacts would be associated with intensification of transport infrastructure and activity”. How, therefore, can a motorway represent an “intensification” of transport activity, if levels of activity are expected to be marginally less than previous levels?	While the level of demand and overall traffic volumes would not necessarily increase, there would be a physical intensification of transport infrastructure and activity as the Orange/A option would be located close to the existing highway, which would be retained for local access. This would involve a widening of the road corridor to accommodate the new road. Over time traffic growth would result in intensification of transport activity within this corridor.	262
753	No source is provided for the statistics that the 1998-2004 growth in through traffic is 3.3%, but that “[b]eyond 2021, it is anticipated that traffic growth would revert to the previously observed rate of 2.2% per annum”.	Since the start of the Pacific Highway Upgrade Program in 1998, there has been a noticeable increase in the traffic growth rate on the highway. As more and more of the highway is upgraded, it becomes the more preferred route for many drivers travelling between Sydney and Brisbane. It may also attract additional trips. However, this accelerated growth rate is not likely to continue indefinitely once the Pacific Highway upgrade is completed. Growth is likely to revert to the long-term trend after completion of construction of the whole Program.	262
754	It is bad enough on Pacific Highway without extra stoppages and delays. These always make people aggro and they tend to speed up to make up for lost time.	The comment is noted.	2012

Issue No.	Comments on traffic	Response	Stakeholder ID
755	On page 37 of the Route Options Development Report, we learn that 20-26% of light vehicles and 45-58% of heavy vehicles are through traffic. Overall, about 80% of traffic is light (p.35). This means that overall, about 28-30% of traffic is through traffic. No explanation is given for why elsewhere (e.g. pp.xi-xiv), SKM estimate that options B-D, only catering for through traffic, will attract 30-35% of the total traffic.	The origin-destination survey of actual counts indicates: ■ 80% light vehicles, 20% heavy vehicles. ■ 30-35% thorugh-traffic. ■ 65-70% regional and local traffic. ■ 21% of light vehicle trips are through trips. ■ 51% of heavy vehicle trips are through trips. The rate of growth in local and regional traffic up to 2021 is predicted to be in the order of 1.5%. The rate of growth for through traffic and trucks is predicted to be in the order of 3-4%. Traffic data used in the discussion of the route options are based on estimated volumes in 2021. The predicted differences in rates of growth would result in a higher proportion of through traffic and heavy vehicle volumes in 2021.	262
756	A motorway standard road is best suited in the Red/D or Green/C options, not the Orange/A or Purple/B options as these are not direct routes.	All of the route options would be designed and constructed to allow motorway speeds (100-110km/h), and would provide a travel time saving compared with the existing highway.	1583
757	Your report on both the Green/C and the Red/D options regarding travel time both provide for an approximate saving in travel time of 13 minutes, with both options being 12.5 kilometres shorter than the existing Pacific Highway. However, this will be relevant to only 30-35% of current users of the existing Pacific Highway, whereas the Orange/A option would result in travel time savings for the majority of road users.	The overall reduction in travel times for each of the options is considered as part of the road-user benefit-cost assessment.	163, 262, 483, 1953
758	With respect to the Orange/A option: Communities at Tyndale and Ulmarra are well served with bypasses and most importantly, the major population centre of Grafton is well served with interchanges directly to the north and south. The only major deviation from the current highway alignment is to the east of Grafton, and this is an area where traffic 'in the know' is already bypassing the highway along Centenary Drive.	The Orange/A option has many advantages from a local traffic and access perspective. This needs to be considered alongside other issues such as constructability, cost, social and environmental impact.	350

Issue No.	Comments on traffic	Response	Stakeholder ID
759	Planning must be done with foresight to: Combine major infrastructure in an overall plan for future needs of the Clarence Valley. Network infrastructure for the mid/north coast & tablelands traffic, of which Grafton is a hub that would be further utilised & benefit economically if there was an adequate bridge crossing.	The Grafton Bridge has been the subject of a separate assessment by the RTA. Clarence Valley Council has been consulted regarding the future infrastructure needs of the area and how the Pacific Highway fits in with that. The Wells Crossing to Iluka Road project is being done within the strategic context of the Pacific Highway Upgrade Program.	305
760	The Route Options Development Report notes that of the through traffic, almost 500 vehicles per day stop over for up to three hours. They state that this equates with about 14% of all through vehicles. Based on the SKM 2004 figures, 14% of through traffic is about 310-350 vehicles, not the “almost 500” described by SKM.	There are about 490 vehicles per day that stop for up to 3 hours within the study area. The trips made by these vehicles have been included as two separate trips. The 490 vehicles do not allow for those that stop between the hours of 6pm and 6am. The 24 hour volume of trips that stop is 540 vehicles. This is about 20% of all through vehicles, including those that stop for up to 3 hours.	262
761	The Route Options Development Report concludes that as the proportion of through vehicles that make a stop is relatively small, this issue was assessed to have limited potential to significantly distort the traffic data, for the purposes of comparing route options. However, it could be assumed that through vehicles which stop at Grafton or elsewhere were not simply making a ‘convenience’ stop, but were delivering or picking up freight or making a deliberate visit. If most of these vehicles had specific reasons for stopping, reasons which would lead them to use the old highway rather than options B-D, then this means the SKM figures for the predicted use of options B-D is even more inflated: as few as 24-26% of current highway traffic may use these options, i.e. only 80% of SKM’s figures.	The approach taken by SKM in forecasting allows for a conservatively low forecast of through traffic, and takes into account people making specific stops within the study area. Any vehicle that took more than 1 hour to pass through the study area was not counted as making a through trip, but rather as making two separate trips. This allowed for short stops for petrol and other services that might also be provided beside the new route option. If the timeframe was extended to 3 hours, to allow for people stopping for lunch etc, then the volume of “through” traffic would increase by 20%.	262
762	A Class A upgrade of the Orange/A option would confer even greater benefits than a Class M upgrade because it would better service local and interstate freight due to greater potential for local access to the road.	Class M Motorway-standard roads like that proposed here are the safest type of road for carrying large volumes of traffic. They separate opposing traffic streams, reducing head-on collisions, and they reduce conflict between through traffic and turning traffic, by having all interchanges grade-separated. Class A roads are of a similar high standard, and corridor width but the number of interchange and access points needs to be considered carefully to maximise safety. If there are too many intersections, safety will be compromised. This needs to be weighed up with issues of accessibility and existing services.	362

Issue No.	Comments on traffic	Response	Stakeholder ID
763	In a discussion of regional traffic, the report states that a total of 10% of inbound traffic to the survey area left via the Pacific Highway (north or south). This indicates that the strongest movement for traffic is along the coast, via the Pacific Highway, rather than using alternative inland routes or travelling to inland destinations. This statement is hard to understand.	10% of the traffic that enters the study area via the Gwydir Highway, Summerland Way or Armidale Road leaves via the Pacific Highway. 78% has a destination in the vicinity of Grafton, with a further 4% going to the Maclean/Yamba area. The remainder also leaves the study area via the Gwydir Highway, Summerland Way or Armidale Road.	262
764	In relation to truck traffic, the report notes that 8% of truck traffic south of Grafton goes on to the Gwydir Highway and Summerland Way after Grafton. It does not specify what proportion on the highway south of Grafton originated on the Gwydir Highway /Summerland Way. Likewise, we are told that 6% on the northern Pacific Highway originated on the Gwydir Highway /Summerland Way (ibid.), but are not told what percentage on the northern highway had the Gwydir Highway /Summerland Way as their destination. This suggests that the report has omitted perhaps half the traffic travelling on the Gwydir /Summerland routes. Is this a deliberate misrepresentation of the data? In discussing community-suggested options. The report dismisses the Summerland Way option, on the basis that low traffic volumes on the Summerland Way are indicative that it does not serve predominant travel demand along the north coast. However, current use of the Summerland Way does not indicate the volumes it would attract if upgraded.	The origin-destination survey in November 2004 indicated that: There were 4130 vehicles per day heading north on the Pacific Highway South of Grafton. 330 (8%) were going through Grafton, to the Summerland Way, Gwydir Highway or Armidale Road. This included 30 heavy vehicles. There were 3540 vehicles per day heading south on the Pacific Highway north of Iluka Road. 160 (5%) were going through Grafton, to the Summerland Way, Gwydir Highway or Armidale Road. This included 10 heavy vehicles. There were 4650 vehicles per day entering the study area from the Summerland Way, Gwydir Highway or Armidale Road. 320 (7%) left the study area via the Pacific Highway south of Grafton, including 30 trucks. 120 (3%) left the study area via the Pacific Highway north of Iluka Road, including 10 trucks. The Summerland Way option is being investigated by the RTA as a separate study.	262
765	The initial discussion of population growth for the Clarence valley notes a 2016 forecast of between 57,000 and 61,000 (Clarence Valley Settlement Strategy, cited on p.9). However, The Clarence Valley Council has indicated that recent high growth rates, evidenced by subdivision and housing approvals, may be indicative that previous projections of population growth are under-estimates. The report points out that local population growth is relevant to the highway upgrade, as it will influence local traffic growth. This is highly significant, since current estimates suggest options B-D would take at most 35% of highway traffic. If local traffic volumes increase at a faster rate than anticipated, options B-D would take an even smaller proportion of total traffic.	The study used two sources of data for estimating the likely population (and hence local traffic) growth in the study area. Data from the 1991, 1996 and 2001 census provided one estimate of population growth. As stated, subdivision and growth which has occurred since 2001 may result in the use of census data only providing a low estimate of growth. The Clarence Valley Settlement Strategy provides a forecast of population in 2016, allowing another, higher, growth rate to be calculated. Due to the uncertainty about the continued currency of the Clarence Valley Settlement Strategy forecasts, which were prepared using 1996 data, the average of the two growth rates was applied. The growth of local traffic reported is based on expeted growth in local population. Through traffic growth assumes a growth in long distance travelling up to 2021.	262

Issue No.	Comments on traffic	Response	Stakeholder ID
766	The Orange/A option has the disadvantage of the continued mixing of local traffic with through traffic.	The existing highway would be retained in most instances to provide local access adjacent to the new road. However it is likely that most of the traffic would use the new route.	150
767	How will the expressway affect travel times to Grafton and Maclean?	Depending on the route option chosen, travel time between Grafton and Maclean would be reduced.	474
768	The existing highway would be a good road without trucks, just local traffic.	Comment noted.	1171
769	The extra 9km in length of the Orange/A and Purple/B is insignificant as this would be less than 7 minutes of travel time.	One of the benefits of the eastern routes is a slightly greater time saving, which is in line with the project objectives of reduced travel time and reduced freight transport costs. This must be considered as part of a broad range of functional, social and environmental issues to select the preferred route. The seven minute saving time must also be seen in the context of cummulative travel time savings for the whole of the Pacific Highway.	2227
770	Grafton needs to stay adjoined with the main arterial flow of traffic between Sydney and Brisbane. It is an ideal transport hub with connections to river, rail, road and airport. This allows for major infrastructure to be grouped maximising efficiency and convenience.	Accessibility to/from Grafton and other centres along the highway is an issue in the consideration of the preferred route.	305
771	Why is the RTA feeding heavy transport into the South East Queensland corridor, when the Queensland government is establishing a heavy transport interchange to by-pass the SE corridor.	The demand for heavy goods movement and the movement desire lines determines the need for investment. Committed investment in the Pacific Highway and the heavy transport interchange you refer to would indicate there is a strong demand for both.	266
772	Both the noise and the menacing driving of heavy vehicle drivers are much exacerbated at night when heavy vehicle numbers increase dramatically.	Heavy vehicle numbers remain constant over the 24 hour day. There is no dramatic increase in night time activity. However the percentage of trucks in the night time vehicle volumes is very high leading to the perception that numbers have increased over day time truck volumes. Noise effects under these conditions are more noticeable against the lower night time ambient noise levels.	2278

Issue No.	Comments on traffic	Response	Stakeholder ID
773	Send heavy vehicle traffic along the New England Highway.	The Pacific Highway was approved as a full B-Double route from Hexham to the Queensland border in 2002. While long-distance heavy vehicles have traditionally used the New England Highway to transport freight, the Pacific Highway is becoming increasingly used as a heavy vehicle route. Heavy vehicles are required to transport freight to local populations, which are concentrated along the coast and are more accessible from the Pacific Highway. Therefore, the New England Highway is suitable for only a proportion of heavy vehicles.	362, 371, 494, 2106, 2130, 2203, 2207, 2349, 2460, 2472

4.3.34 Emergency vehicle access

Issue No.	Comments about emergency vehicle access	Response	Stakeholder ID
774	The Purple/B, Green/C and Red/D options do not have suitable access for emergency services at times of a major incident (fatal accident, truck rollover, toxic spill or other disaster). This will cost time with the potential to also cost lives.	The RTA requires that emergency vehicle U-turn bays be provided on average every 2.5kms. Other access provisions may include locked gates. Access issues have been discussed with emergency services and would be further considered during the concept design stage for the project.	163, 362, 483, 2116, 2164, 2173, 1866, 2311

4.3.35 Toll road

Issue No.	Comments about a toll road	Response	Stakeholder ID
775	Complete new road construction will mean only one thing; privatisation and a road toll. This is not an option as taxpayers should be provided with infrastructure using the taxes collected.	Because of the need to accelerate the duplication of the Pacific Highway between the F3 Freeway at Beresfield and the Queensland Border, the Australian and NSW Governments have signed a Memorandum of Understanding to develop the concept of a North Coast Motorway and explore funding options for private sector financing through tolls to fund an acceleration program. A Working Party has been established to examine the funding options in more detail. At this early stage, no decision has been made on whether any section of the Pacific Highway might be suitable for such an option. However, should sections of the Highway be considered as a tolled section then a free alternative route for local traffic would be provided. This would be the case for any tolled section of the North Coast Motorway.	247, 2096, 2231, 2276, 2320, 2391, 2406, 2417, 2418, 2420, 2430, 2486, 2505, 2506, 2507,
776	The Orange/A option imposes on local roads between Yamba and Grafton and recently the Minister mentioned a possible toll way. This would mean locals travelling to and from work would be paying for this national highway.	Refer to response to issue number 775.	1885
777	The motorway should be a toll road because it takes about 25 km off the existing highway.	The coment is noted.	2305
778	I am fearful that a toll way will be the inevitable choice and profit will allow vandalism of an area that is now rare throughout much of coastal NSW.	The comment is noted.	380
779	I would be opposed to a toll.	The comment is noted.	230

Issue No.	Comments about a toll road	Response	Stakeholder ID
780	Is this going to be another case of privatised public infrastructure? We thought the provision of roads was a public service and hence, the responsibility of the elected Government. Perhaps we should not have what we cannot afford?	Refer to response to issue number 775.	1017, 1331

4.3.36 Funding

Issue No.	Comments on funding	Response	Stakeholder ID
781	Economics is a major player in the decisions made by the RTA, as it is for most large corporations / institutions / arms of the Government.	The RTA is obliged to consider the availability of funding and the affordability of projects. It is also required to consider social and environmental impacts in accordance with various NSW and Commonwealth legislation. These considerations are reflected in the Pacific Highway Upgrade Projgram and the Wells Crossing to Iluka Road project objectives. The RTA is required to seek to identify an optin that best meets these objectives on balance.	2145
782	The Orange/A option is not an option because of the amount of tax payers dollars involved.	The comment is noted.	1870, 2148

Issue No.	Comments on funding	Response	Stakeholder ID
783	The billions of dollars that could be saved by abandoning these ridiculous proposals to construct motorways along NSW's coastal fringe, must be spent on a major upgrade of freight rail and public transport systems.	The upgrade of the Pacific Highway is needed to improve road safety and to reduce travel times, bringing benefit for all road uses including local and long distance travellers, and freight transport operators. It would be desirable environmentally and socially for rail to take a larger share of long distance freight movements. There are opportunities for rail to increase its market share for some traffic in the Sydney-Brisbane corridor, given the relatively long haul distances. However, significant rail investment in track and signalling would be required to reduce rail travel times (which are constrained by long single track sections and low average speeds) and offset the double handling of containers to final destinations. These two factors are required for rail to compete effectively with road into the future. Furthermore, trends in logistics point to continuing high growth in long distance road freight movements and likely decrease in rail's mode share in the corridor. The Federal government is investigating the feasibility and benefits of investing significant future expenditature in the north south Melbourne to Brisbane rail corridor which would greatly assist rail maintaining its modal share of long distance traffic. This would unlikely change the need and justification in investment in the Pacific Highway Improvement program.	231
784	We are frequent users of the Pacific Highway between Sydney and Ballina, particularly between Coffs Harbour and Yamba. We are pleased by the commitment of the Federal and State Governments to rectify the state of the national highway.	The comments are noted.	2484
785	We all know there is no funding for these motorways. The State Government is depending on Federal funding. The Government is making out to look good on its promises but where is the care of its citizens?	The original ten year Pacific Highway Upgrading program commenced in 1996. For the ten years to June 2006 the NSW and Australian Governments committed to a $2.2 billion upgrade; $1.6 billion from the NSW Government and $0.6 billion from the Federal Government. In December 2005, the NSW and Federal governments announced a jointly funded program of $960 million for the three years to 2009. In May 2006, the Federal budget announced an additional $160 million, matched by NSW for the period to the end of 2009.	1535

Issue No.	Comments on funding	Response	Stakeholder ID
786	As there is Federal funding, do we have any constitutional right to say no to the project?	It is understood that the Constitution gives certain powers to the Commonwealth. Any legal appeal by a community member would need to be on the basis that the Commonwealth is operating outside its powers under the Constitution. For a full appraisal of this question however, legal advice would need to be sought from a lawyer specialising in Constitutional matters.	1866
787	The road should be State/Federal Government funded and the construction expedited to the maximum extent.	The original ten year Pacific Highway Upgrading program commenced in 1996. For the ten years to June 2006 the NSW and Australian Governments committed to a $2.2 billion upgrade; $1.6 billion from the NSW Government and $0.6 billion from the Federal Government. In December 2005, the NSW and Federal governments announced a jointly funded program of $960 million for the three years to 2009. In May 2006, the Federal budget announced an additional $160 million, matched by NSW for the period to the end of 2009.	2237
788	As a tax payer I object to millions of dollars being spent on placing a motorway in an area where there is little demand for it and which will have negative impacts on our region.	The upgrade of the Pacific Highway is needed to improve road saftey and to reduce travel times, bringing benefit for all road uses including local and long distance travellers, and freight transport operators.	275

4.3.37 Maintenance of existing highway

Issue No.	Comments 0n maintenance of the existing highway	Response	Stakeholder ID
789	By selecting the Green/C or Red/D options there will be more infrastructure to upkeep as the existing Pacific Highway will still need to be maintained.	The existing highway would be of a suitable standard when and if handed over to Council. This would be a matter for negotiation between the RTA and Council at that time.	426
790	The ratepayers of the Clarence Valley would be ultimately responsible for maintaining the existing highway which would still carry 65%-70% of its current vehicle load and 50% of the current heavy vehicles if one of the eastern options was chosen. Clarence Valley Council struggles to maintain our road system now. How could it possibly also maintain the existing highway if an eastern route is chosen?	Refer to response to issue nuber 789.	163, 275, 350, 376, 912, 1535, 1795, 1953, 2106, 2173, 2217, 2227, 2311, 2349
791	The cost of maintaining the existing highway would be far less if the Orange/A option was chosen, as only 10% of the traffic would remain on the existing highway.	Refer to response to issue nuber 789.	2173, 2217

Issue No.	Comments 0n maintenance of the existing highway	Response	Stakeholder ID
792	The argument that if one of the eastern options for the highway upgrade is chosen then Clarence Valley Council will be burdened with maintaining the old highway is illogical. Whichever option is chosen (including the Orange/A option) there will still be a need to have a road network available to service towns and homes bypassed by the new highway.	Refer to response to issue nuber 789.	474
793	Clarence Valley Council will lose rates revenue as a result of land acquisition on the Green/C and Red/D options. Hence, there will be a lack of funding to maintain local roads.	The comments are noted.	1535
794	If one of the eastern options is chosen, the existing highway may not be maintained. We will still need to use the existing highway for local use. Clarence Valley Council will have to patch it up with little funds so it will remain a dangerous road and our community will bear the costs. Who will be responsible for the cost of maintaining the old highway? Is that accounted for in the estimates?	One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any option. An allowance in the order of $110 Million has been included in subsequent estimates. The parts of the highway handed over to Council would be of a suitable standard. This matter, including costs, would be a matter for negotiation between the RTA and Council at that time.	350, 376, 949, 1535, 1866, 2129, 2178, 2220, 2359
795	Removing much of the heavy through traffic from a downgraded Pacific Highway will also significantly reduce its maintenance and repairs.	Refer to response to issue nuber 789.	2278
796	If the Purple/B option is chosen are you going to upgrade the access road through Grafton to make it safer? It is not the volume of traffic that causes the carnage, it is the state of the road.	Refer to response to issue nuber 789.	2511

4.3.38 Rail

Issue No.	Comments on rail	Response	Stakeholder ID
797	Freight should be removed from the Pacific Highway and the rail infrastructure used, as a safety and sustainability measure. Rail transport needs to be more active and productive to take semi-trailers off the road. This plan should not go ahead without a comprehensive assessment of sustainable transport options, including use of rail for freight movement.	Refer to response to issue number 783.	163, 362, 376, 466, 502, 949, 1924, 2077, 2086, 2093, 2094, 2127, 2130, 2135, 2137, 2141, 2145, 2159, 2165, 2176, 2177, 2186, 2188, 2196, 2205, 2206, 2210, 2223, 2236, 2239, 2261, 2263, 2268, 2271, 2276, 2287, 2301, 2308, 2313, 2328, 2343, 2353, 2374, 2378, 2381, 2401, 2402, 2423, 2426, 2431, 2444, 2471, 2493
798	All roads have their uses but are they the only options available? Other options may take wider co-operation and future planning but isn't that the challenge we continually face and must rise to? Consider rail.	The community has benefited in many ways from the growing use of the road system. However, road transport, even where it is the most efficient mode of transport, also has external costs on society which need to be managed.	2402
799	While adequate freight routes are critical to the state's economy, alternative solutions such as rail have not been fully considered.	Refer to response to issue nuber 783.	2032
800	The government is concentrating on road transport to the detriment of both rail and shipping; spending enormous amounts on the roads while rail infrastructure continues to deteriorate and coastal shipping continues its slide towards non-existence.	The comments are noted. However, trends in logistics point to more, rather than less of road transport for freight. It is therefore likely that heavy articulated trucks will increase in significance on the Highway, both in absolute and relative (ie. as a proportion of total traffic) terms; reduced driving times between Sydney and Brisbane will reinforce this.	299
801	The money saved by the cheapest option should be used to put more freight on the railway.	The comments are noted. However this issue is outside the scope of this study.	2157
802	Why are we spending money on truck transport rather than cleaner rail transport?	Refer to response to issue nuber 783.	2311
803	What a shame the bumbling bureaucrats can't oversee the establishment and maintenance of an effective rail alternative for the benefit of all.	Refer to response to issue nuber 783.	1017, 1331

Issue No.	Comments on rail	Response	Stakeholder ID
804	Freight should be moved back to the railways, especially in this time of rising oil costs.	Refer to response to issue nuber 783.	2460
805	We support the upgrade of the North Coast Railway.	The comment is noted.	2567
806	The Australian Rail Track Corporation has recently signed contracts worth $1.4 billion to upgrade the Melbourne - Sydney - Brisbane Rail network. These upgrades, aimed at increasing rail's share of east coast freight from 15% to 30%, thereby taking 400 trucks a day off the Pacific Highway, are expected to be 95% complete within 3 years.	The comments are noted.	268
807	A Class A highway could be complemented by planned and financed improvements to rail and removal of heavy through vehicles to the New England Highway.	Refer to response to issue nuber 783.	275, 949
808	Freight should be shifted from roads to rail. In the interim, interstate freight passing through NSW should be shifted back onto the New England Highway immediately.	Refer to response to issue nuber 783.	2032
809	These options do not address the real problem which is the lack of an integrated transport plan for the Sydney / Brisbane route. A more appropriate solution for the long term would be to use as much of the existing railway corridor as possible to construct a proper freeway and re-aligned, more efficient rail link to reduce the freight traffic on the highway. This would have positive impacts on fuel, greenhouse and energy efficiencies, as well as environmental, social and economic impacts.	Refer to response to issue nuber 783.	244, 270, 1955, 2091, 2303
810	Any upgrade to motorway standard will attract further heavy transport vehicles onto the highway as the competitive edge for freight cartage is once again skewed against the logical rail freight alternative.	Trends in logistics point to more, rather than less, road transport for freight. It is therefore likely that heavy articulated trucks will increase in significance on the highway, both in absolute and relative (ie. as a proportion of total traffic) terms.	231, 299, 466

4.4 Issues raised by Government and statutory authorities

The issues that were raised in the submissions received from Government and statutory authorities, and responses addressing these issues, are presented in the following sections. The issues have been summarised.

Clarence Valley Council **(Stakeholder ID: 9)**		
811	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to full consideration of the environmental factors of the various options.	The Pacific Highway Upgrade Program Objectives and the specific project objectives form the basis for the identification and evaluation of options. The objectives address a range of aspects encompassing social, environmental, functional (engineering) and economics. These include future development and Council planning, noise and pollution, and flooding, and economics. All of these aspects were considered during the identification and evaluation of route options and will be the key consideration in the selection of a preferred route.
812	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to full consideration of the impacts on future development potential in the areas affected.	It is acknowledged that highway developments can change land use and development patterns. Future land use changes would occur subject to market demand, land availability and suitability, and the strategic and statutory plans and policies of the local Council and the State Government. Future land use is one of the factors that are being considered for the selection of a preferred route.
813	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to adoption by the RTA of timeframes which minimise disruption to the lives of the affected property owners.	The announcement of the preferred route follows consideration of all of the information collected during the route options development and the route options display, including the social, environmental, functional and economic investigations, the feedback from the community and stakeholders, and the outcomes from the Value Management Workhop. Some additional investigations were also undertaken following the Value Management Workshop and these are also considered in the preferred route selection process. RTA is mindful of timing and the impacts this has to the community. However, there is a need to provide the community with information on the project

Clarence Valley Council **(Stakeholder ID: 9)**		
814	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to appropriately compensation for affected property owners in a timely manner.	The *Land Acquisition (Just Terms Compensation) Act ,1991* guarantees that if and when the land is acquired by the RTA under that Act, the amount of compensation will not be less than market value (assessed under that Act) unaffected by the road proposal. The Act lists matters to be be considered in determining the amount of compensation. These matters are the market value of the land on the date of its acquisition, any special value to the person on the date of its acquisition, any loss attributable to severance, any loss attributable to disturbance, solatium, any increase or decrease in the value of any other land of the person at the date of acquisition which adjoins or is severed from the acquired land by reason of the proposed road. One objective of the Act is to encourage the acquisition of land by negotiated purchase in preference to compulsory process. The RTA fully supports this objective.Specific impacts on individual properties are not able to be determined until the concept design and detailed environmental assessment has been completed. This assessment will commence when the preferred route is approved.
815	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to extending the time for consideration of options until at least 31 January 2006.	With respect to the consultation process, the closing date for the submission period was extended until 2 December 2005, and in fact submissions received to the end of January 2006 were included in this report. The project team will keep the community informed about the project and any additional investigations that are undertaken. The project team will also continue to liaise with Clarence Valley Council and government agencies to ensure the latest data is used to assess the route options.
816	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to providing all necessary information including reports in a timely manner, to assist people in lodging informed submissions.	Once the preferred route has been identified, the RTA will contact affected property owners to notify them of the decision and to inform them of the RTA's property acquisition process.
817	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to the Route Options Development Report being urgently reviewed and that the RTA embraces the readily available more current and relevant statistical data and further if necessary the present report be withdrawn and the current consultation process be discounted in the interim.	As a result of recommendations from the workshop, the project team is undertaking further investigations and is working towards the announcement of a preferred route around mid 2006. The project team met with Clarence Valley Council to address the comments of the meeting on 15 November 2005. Additional information was provided as requested to Council. Council indicated that they were satisfied with the responses to these comments.

Clarence Valley Council **(Stakeholder ID: 9)**		
818	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to undertaking a thorough study into the feasibility of the Summerland Way option.	On 30 November 2005, the then Minister for Roads, Mr Joe Tripodi, announced that the Government would consider looking at the Summerland Way proposal. He also stated that this would not stop ongoing planning for the upgrade of the Pacific Highway. The Summerland Way investigation includes consideration of the route suggested by Mr Don Page, as well as other potential routes in the general vicinity of the Summerland Way.
819	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its highway upgrade route selection process it commits to giving a firm commitment that in the event of Clarence Valley Council becoming responsible for future maintenance of the former Highway, that the RTA will fully reimburse Council's future expenditure outlays thereon.	With any of the options, the existing Pacific Highway in either its current or modified form would become the responsibility of Council. The nature, condition and future funding of the asset at handover would be a matter of negotiation between Council and the RTA. One of the recommendations of the Value Management Workshop was that the upgrading of the existing highway should be considered as part of any option. An allowance in the order of $110 million has been included in subsequent estimates.
820	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to undertaking to ensure more appropriate representation on the Value Management Committees of the people from the community in the study areas.	A Value Management Workshop for the Wells Crossing to Harwood Bridge section of the project was held in March 2006. Participants for the workshop were drawn from a wide variety of interests and organisations including the RTA and project team, Clarence Valley Council, State Government agencies including the Department of Planning, Department of Environment and Conservation, Department of Primary Industries), business organisations, road user groups such as NRMA and community participants. For most projects, the number of community representatives is generally 2 to 4. Given the size of the study area and its communities, it was decided to increase that number to 6 for this project. Those participants were selected from the community liaison groups that have been established for the project. In considering the number of community participants it is important to note that four Clarence Valley Council representatives, as well as representatives from local business and the cane industry participated in the Value Management Workshop.
821	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to undertaking flood and economic studies before the Value Management Studies.	Background papers were provided to the participants of the Value Management Workshop, and included flood and economic studies. Additional investigations will be undertaken following the selection of a preferred route during more detailed design phases of the project.
822	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to undertaking to properly assess likely impacts along the route options of vehicle noise and pollution.	Refer to response to issue nuber 821.

Clarence Valley Council **(Stakeholder ID: 9)**		
823	During an extraordinary meeting of the Council convened on 15 November 2005, it was resolved that the RTA be requested to ensure that, in its Highway Upgrade Route Selection process it commits to undertaking to provide appropriate data in relation to intended Clarence River crossing at Harwood and location and numbers of accesses to and egresses from the New England Highway on the clear understanding that more than one interchange at either end of the new carriageway is essential.	The new bridge crossing the Clarence River at Harwood would be constructed alongside the existing bridge. The preferred route is on the eastern side, directly adjacent to the existing bridge. The bridge design would initially allow two lanes in each direction with an allowance for one additional lane should it be required at a later date. The exact size and location of the interchanges would be determined during the concept design of the preferred route. Indicative locations of the interchanges are shown on the display material to provide an indication of the land acquisition that would be required. Typically on and off ramps extend between 600 and 800 metres either side of an interchange.

Department of Environment and Conservation **(Stakeholder ID: 129)**		
824	Based on the information available, the Orange/A option is likely to have the least potential to adversely impact on the ecology of the study area. It will minimise disturbance of SEPP 14 freshwater wetlands and estuarine communities, riparian ecosystems, key habitats and wildlife corridors, threatened plant and animal species and populations, endangered ecological communities (EECs), high conservation value (HCV) and remnant native vegetation, and landscape structure and function. Special provisions would be required to protect these attributes from works associated with the survey, construction and maintenance (especially for fire and weed risk) of Options B, C and D.	The findings of the assessment of the route options to date are consistent with the conclusion that the Orange/A option presents the least potential risk to the ecological values of the study area in terms of habitats and corridors, EECs, threatened species and remnant vegetation. However, as noted in other submissions, the Orange/A option still does have the potential to impact on ecological values.
825	The Orange/A option will potentially impinge on EECs on the Clarence River floodplains – Swamp Sclerophyll Forest, Swamp Oak Floodplain Forest, Subtropical Coastal Floodplain Forest, and patches of Coastal Saltmarsh, and may affect the foraging habitat of the threatened Black-necked Stork at, for example, Cowper Swamp south of Ulmarra. Significant remnant trees are also present along this route, which provide habitat for a range of species.	The Orange/A option does have the potential to impact on some habitats and remnants of Endangered Ecological Communities on the floodplain as well as wetland habitats of endangered bird species. This comment has been noted by the study team and is consistent with assessments completed to date.

Department of Environment and Conservation **(Stakeholder ID: 129)**		
826	There is potential for Options Purple/B, Green/C and Red/D to reduce the size and habitat of the endangered North Coast Bioregion population of Emu. Specific measures will need to be developed and implemented in consultation with the local community and DEC to adequately protect, manage and monitor the sub populations.	The Threatened Species Conservation Act, 1995 requires, in the first instance, consideration of the likelihood of significant impacts on the Emu population, and further detailed assessment should the initial assessment indicate that significant impacts are likely. The process includes consideration of the effectiveness of mitigation measures in reducing the impacts on the viability of the species. The presence of the coastal Emu and the small size of the population is known and has been raised during ecology focus group meetings and in discussions with local residents, as well as with DEC. Applying a precautionary approach and assuming that crossing structures would not be highly effective, the Green/C and Red/D options would fragment and potentially isolate a significant portion of the habitat known to be used by this population. This in itself may not directly result in the loss of the population but would contribute substantially to the cumulative impact on habitat availability, along with impacts from other future development and activity within the Emus' habitat. As more clearing and development occurs, the population would become extremely vulnerable to stochastic events such as drought and bushfire and create a high risk of fragmenting the population into smaller less viable units that would be further at risk as a result of other pressures such as road strike and predation. The Purple/B option (between Tucabia and Pillar Valley) dissects a passageway used by the Emus for access to the Coldstream River wetlands, which have been identified as locally significant habitat for the sub-population, particularly during drought and within the pre and post breeding stages. This would have direct impacts on a proportion of the population, residing in the Tucabia and Pillar Valley area and may lead to a long-term reduction in numbers. Mitigation in the form of suitable crossing structures is required, and large bridges incorporated in the design of the Purple/B option at the crossing of the Coldstream River may prove effective as crossings for the Emu. However, if this is not the case and it is assumed that access to the wetlands would be prevented by the Purple/B option, this has the potential to contribute to reduced viability of the population. The comparative risk of substantial impacts from the Purpl/B option is however, substantially less than for the Green/C and Red/D options, as the area of habitat to which access would be restricted is substantially less, and access to the Shark Creek wetlands and Yaegl Nature Reserve would be retained.

Department of Environment and Conservation **(Stakeholder ID: 129)**		
827	The Route Options Development Report does not include a map of designated key habitats and regional and subregional corridors. This information could have been included in Figure 5.8. There is no indication of threatened plants and animals recorded or likely to occur in the study area. While the location of EECs is mapped, their differentiation is not – a simple key would suffice. An appendix that lists fauna and flora species recorded during recent and past surveys undertaken in or near the study area would be useful.	Mapping of key habitats and regional and subregional corridors has been ongoing since the release of the Route Options Development Report (RTA, 2005) and is included in the assessment. Results of this mapping were provided to the Value Management Workshop.
828	The Orange/A option has the greatest impact on conservation reserves. However, all options have the potential to impact on Yaegl Nature Reserve and indirectly on the Yuraygir National Park, Yuraygir State Conservation Area and Mororo Creek Nature Reserve. These are areas reserved for their significant natural, cultural, and social values. All options have the potential to impinge on Yaegl NR and Option D runs closest to Yuraygir NP. The Wells Crossing Flora Reserve is also potentially impacted by all options. These areas should be avoided as they have been reserved for conservation purposes. Re-alignment or reduction of the proposed 100-metre wide highway corridor and use of drainage mitigation and habitat restoration measures, including investigating potential for compensatory habitat, could help reduce the impacts of this impingement.	Reserves under the National Parks and Wildlife Act are identified as having a high level of constraint and options have been designed to avoid or minimise impacts on these. The Orange/A option and Purple/B option have the potential to impact on the Yaegl Nature Reserve, although impacts may be avoided or at least minimised through further refinement of the design. Other reserves are unlikely to be impacted by any of the options.

Department of Environment and Conservation **(Stakeholder ID: 129)**		
829	Potential exists for adverse impacts on freshwater wetlands, estuarine plant and animal communities and remnant riparian vegetation communities. Endangered invertebrates such as the Giant Dragonfly may also be affected by proposed crossings of upper catchment streams and wetlands. Remnant mangroves and two EECs along Clarence River, Serpentine Channel and North Arm may be fragmented by additional bridge structures proposed for the Harwood to Iluka Road section. In addition, wetlands and estuaries providing food and shelter resources for intercontinental migratory waders subject to JAMBA and CAMBA treaties may also be affected by proposed road construction and drainage works. Consideration of a narrower corridor of disturbance, avoidance of wetlands, and measures to retain sediment, stabilise banks and exposed areas, and revegetate/restore habitat will be required to mitigate the impact of these works.	These comments are noted in relation to all options under consideration, and would be subject to ongoing assessment as part of the selection of a preferred route for the project.

Department of Environment and Conservation **(Stakeholder ID: 129)**		
830	Potential impacts on Aboriginal cultural heritage sites should thoroughly explored at the Value Management Workshop. There is a need to understand the importance of the indigenous cultural landscape as whole that includes locally significant features such as Pillar Valley Range, Bondi Hill and Shark Creek Range. Glenugie Peak and Pillar Rock have deep spiritual and dreaming significance, while Glenugie Peak is an important story site. Gumbaingirr men regard Pillar Rock and adjacent areas as highly significant sites. Other areas such as Pillar Valley Range and Glenugie Peak are important as travelling routes, have caves, or feature rock art. Statements made in the Route Options Development Report regarding, for example, the greater potential of floodplains to the west of the study area to be significant to Aboriginal people than the "forested coastal ranges and slopes of the eastern study area" should be reviewed. In fact, the floodplains and coastal ranges and slopes of the study area and the regional landscape are likely to be of high significance to Aboriginal people. DEC supports the recommendations made in The Working Paper on Cultural Heritage Assessment, especially Recommendation 10.3 (Aboriginal sites). Potential impacts on Aboriginal cultural heritage sites should thoroughly explored at the Value Management Workshop.	Aboriginal heritage issues were addressed at the Value Management Workshop. Representatives from within each Land Council boundary were invited to the VMW, along with by the RTA Aboriginal Program Consultant and officers of the Department of Environment and Conservation, which has statutory responsibility for Aboriginal heritage under the *National Parks and Wildlife Act, 1974*. Ongoing consultation with the Aboriginal communities in the study area has revealed much about the significance of the landscape and the importance of the sites mentioned in the submission. These issues have been addressed in the assessment of the route options. The Route Options Development Report (RTA, 2005) states on page 68 that the floodplain topographies *in* the west of the study area have greater potential than the coastal ranges and slopes in the eastern side of the study area (our emphasis). This comment relates to the potential for archaeological sites to be present, and provides a useful broad scale generalisation about likely diversity and size of archaeological remains. It is not meant to infer that the coastal ranges and slopes have less potential to be significant to Aboriginal people. The Route Options Development Report (RTA, 2005) acknowledges that the whole study area has cultural significance to Aboriginal people and is considered to have high archaeological potential.
831	Further consultation with DEC'S Aboriginal Heritage Information Management System, DEC's Northern Aboriginal Heritage Section, the Local Aboriginal Land Council, and local knowledge custodians is recommended. In particular, the Garby Elders at Corindi Beach should be consulted concerning the cultural significance of Pillar Rock and adjacent lands. Yaegl Elders at Yamba should be consulting regarding the cultural importance of Pillar Rock and Shark Creek Range. Reference can also be made to the "Southern Yuraygir National Park Cultural Heritage Study 2001", by Ian Brown and Dee Murphy.	Further consultation with Aboriginal groups and the NSW Department of Environment and Conservation will be undertaken as the project progresses. Other information sources will also be reviewed as part of the investigations leading to selection of a preferred route.

Department of Environment and Conservation (Stakeholder ID: 129)		
832	In general, the DEC favours the route options that comply with the DEC guideline Environmental Criteria for Road Traffic Noise and have the least impact on hew noise receivers. Whilst options B, C and D impact on fewer receivers than option A, they impact on receivers who currently experience low background and low local traffic noise levels. The potential noise impacts and the reasonable and feasible options for effective mitigation should be carefully considered when determining the suitability of these options. In addition, receivers along the existing highway would continue to experience daytime traffic noise, as 65% of traffic would continue to use the existing highway during the day.	The eastern route options would result in splitting of traffic between the new route and the existing highway, because approximately 70% of traffic is predicted to remain on the existing highway. However, at night, residents along the existing highway would benefit from substantial reductions in heavy vehicle volumes on the existing highway. Each option has been assessed on the basis of unmitigated noise impacts for the purposes of enabling comparison of noise impacts of each option. Noise mitigation would be likely to be required as part of any of the route options and may include measures such as earth mounds, noise walls or treatments to structures. These treatments would be considered during the design stage in accordance with the NSW Department of Environment and Conservation requirements and in discussion with landholders.
833	While all of the options cross floodplains to some extent, the Orange/A option traverses a greater expanse of floodplain than all of the other options combined. The culverts and bridges for this option would require significant engineering works during construction to ensure their stability.	It is acknowledged that the flooding risks associated with the Orange/A option and in particular, the Coldstream Basin, are much greater than other options. The design and construction of the bridges and culverts will need to consider the foundation conditions, particularly those associated with the soft soils of the floodplains. While these will impact on the cost and ease of construction, they are unlikely to present any challenges that could not be overcome.
834	All of the options require the construction of a significant number of bridges which can pose a significant risk to the environment during the construction phase. This is particularly significant when in proximity to sensitive waters such as SEPP 14 wetlands. The DEC supports the option that has the least impact on sensitive receiving waters.	The potential impacts of construction and operation of the proposal on the water quality of surrounding watercourses and SEPP14 wetlands will be further assessed during the preferred route assessment. Control measures will be identified to manage these impacts in accordance with relevant guidelines and in consultation with NSW Department of Environment and Conservation.
835	The engineering and designs for all bridges and culverts must fully consider all environmental impacts associated with their construction and operation, the feasibility of such should be provided to better differentiate between the proposed options.	Work to date has not been progressed to the stage where individual designs for bridges and culverts have been determined. This will be undertaken as part of the next stage of the project. At that stage, consideration will be given to flow volumes, flow velocities, flow paths, fish passage, fauna crossings and the like.

Department of Lands -Coffs Harbour **(Stakeholder ID: 2518)**		
836	Unless suitable alternative flood refuges can be provided by the RTA or the development can proceed in a manner that does not significantly impact on access, function and management of the lands in keeping with their required purpose, the Department of Lands objects to: ▪ The routing of the Orange/A option through the Clarenza flood refuge. ▪ The routing of the Purple/B option and the grey road connection though the Tyndale flood refuge. ▪ The routing of the section common to the Orange/A, Green/C and Red/D options through Reserve 53804.	The comments are noted and will be considered as part of the selection and design of the preferred route. Consultation with the Department of Lands will continue following the selection of the preferred route should the flood refuge reserves be affected. Measures to minimise impacts to stock movement will be considered at this stage and may include culverts and local access roads to allow stock movement.
837	Reserve 268 for Water is subject to Aboriginal Land Claim 7128 (lodged 10/08/04). The claim precludes the Department of Lands from entering into any dealings pertaining to the land and it is the understanding of the Department that the land, if granted, can not be compulsorily acquired.	The comments are noted.
838	The availability of high grounds for stock refuge in times of flood is restricted and as such, the subject reserves are a significant rural asset. There is a legitimate and ongoing need for flood refuges in this area, particularly on the eastern side of the Clarence River.	It is acknowledged that all of the route options would affect access to flood free land to some degree. This aspect is a consideration in the selection of a preferred route and its alignment. As part of the design of the preferred route, local access would need to be maintained for both vehicular traffic and stock movements. This would be undertaken in discussion with property owners, and may include provision for such items as underpasses.
839	Reserve 49586 forms part of the strategic network of travelling stock reserves in the region. The Rural Land Protection Board should be referenced with regard to the Bostock Reserve as they have management control. The eastern edge of the block can be included in the route.	The comments are noted.
840	The RTA should contact Coffs Harbour Department of Lands office to determine whether the affected road reserves crossing Crown road reserves should be transferred or acquired. Native Title should be addressed during acquisition and compensation process.	The comments are noted.

Department of Primary Industries - Agriculture, Forests and Fisheries (Stakeholder ID: 128)		
841	All route options have impacts on agricultural lands and agricultural properties. The property severance and rural community impacts associated with duplicating the footprint of major items of public of infrastructure such as the Pacific Highway is a concern, though following the existing highway corridor also has impacts such as direct impact on good quality agricultural land, property access and property severance. The loss of some 465 ha of prime agricultural land with the orange option and the location of a large part of this option on the floodplain is a concern in relation to loss of agricultural potential and altered flooding patterns. Options B, C and D also have impacts on agriculture including grazing land, sugar cane and prime agricultural lands. These options also create an entirely new footprint for the Pacific Highway thereby further urbanising the rural landscape in this locality.	It is acknowledged that prime agricultural land would be affected by all options, particularly the Orange/A and Purple/B options. This is a consideration in the preferred route selection process. The development of route options is complex with many competing constraints which need to be identified and assessed. These constraints can be broadly grouped into social, economic, environmental and engineering and include agricultural landuse. The options that have been developed have varying degrees of impact on each of these aspects. The Value Management Workshop and route selection processes include the assessment of these criteria. In this context, the preferred route will be one that 'on balance' best meets these criteria, while taking constraints into consideration.
842	The DPI Aquatic Habitat Protection Unit (AHPU) is satisfied with the level of information provided on the proposed routes options and prefers that the option selected during the Value Management Workshop has less potential impact upon fishing activity, fish (especially threatened species) and aquatic habitat such as wetlands, especially SEPP 14 wetlands, mangroves and seagrass beds.	Comments on the adequacy of information and preferences for selection of a preferred route are noted.

Department of Primary Industries - Mineral Resources (Stakeholder ID: 2531)		
843	All of the proposed routes, other than the Orange/A option, cross the Kangaroo Creek sandstone dominated ranges east of the current highway. As stated above, this range of hills is host to many small and medium size quarries providing road base, armour stone, sand and gravel to the local area, as well as hosting coal seams which are potential sources of coal seam gas at depth. Potential exists along these ranges for additional reserves of construction material. Access to and from this area onto the highway must be maintained in order to allow further use of these potential resources.	It is not expected that direct access will be provided to the highway for these quarries should an eastern route be selected as it would be built to the Class M standard. The local road network will generally be maintained in its current form to provide access to these sites.

Department of Primary Industries - Mineral Resources **(Stakeholder ID: 2531)**		
844	The majority of the study area, north and west of the Dirty Creek Range, is covered by a Petroleum Exploration Licence (PEL 426), held by Molopo Australia Ltd. There are a number of construction material quarries along the proposed routes, located along the range of hills which include the Dirty Creek and Pillar Ranges and continues north toward Tyndale, Woodford Island and Ashby. Many of the quarries are not currently operating, however, most still contain material which could potentially be extracted in the future. DPI Mineral Resources is also concerned that investigations for the Wells Crossing to Iluka Road upgrade establish the construction material requirements for the upgrade, their likely sources, and the potential impact of supplying any of those requirements from existing quarries on the future supply of construction materials in the district.	As part of the preliminary geotechnical study, the current quarrying operations were investigated with regards to operations and quality of materials produced. The sources of materials both for this project and for future uses will be considered through the selection process. The Pacific Highway Program objectives and the specific project objectives form the basis for the identification of options and for their evaluation. The route options are considered using a range of criteria encompassing functional (engineering), social, economic and environmental aspects. In this context, the preferred route will be the one that, 'on balance', meets these criteria, while taking costs into consideration.
845	Preference for Orange/A route option as it minimises impacts on potential mineral resources.	The comments are noted.
846	Preference for Red/D route option as it minimises impacts on potential mineral resources.	The comments are noted.

NSW Heritage Office **(stakeholder ID: 2264)**		
847	The proposal should have regard to any impacts on places, items or relics of significance to Aboriginal people. Where it is likely that the project will impact on Aboriginal heritage, adequate community consultation should take place regarding the assessment of significance, likely impacts and management / mitigation measures. Guidelines regarding the assessment of Aboriginal sites are available from the National Parks and Wildlife Division of the Department of Environment and Conservation.	The route options have been developed and assessed through a process that has included consultation with Aboriginal groups to identify sites and assessment their significance. The assessment has been undertaken in accordance with guidelines from the NSW Department of Environment and Conservation.

NSW Heritage Office (stakeholder ID: 2264)		
848	The legal standing of items listed on the State Heritage Register can be obtained provided by applying for a section 167 Certificate through the Heritage Office. In addition, you should consult lists maintained by the National Trust, any heritage listed under the Australian Government's Environment Protection and Biodiversity Conservation Act 1999 and the local council in order to identify any identified items of heritage significance in the area affected by the proposal. Note that items with potential heritage significance may not yet be listed. Non-Aboriginal heritage items within the area affected by the proposal should be identified by field survey. This should include any buildings, works, relics (including relics underwater), gardens, landscapes, views, trees or places of non-Aboriginal heritage significance. A statement of significance and an assessment of the impact of the proposal on the heritage significance of these items should be undertaken. Any policies/measures to conserve their heritage significance should be identified. This assessment should be undertaken in accordance with the guidelines in the I\SW Heritage Manual. The field survey and assessment should be undertaken by a qualified practitioner/consultant with historic sites experience.	Comments are noted, and the heritage investigations undertaken to date have utilised all relevant records from the registers and lists mentioned. Further investigations will be undertaken during detailed design phases of the project, following the selection of the preferred route.
849	No items of non-indigenous heritage were identified within the documentation provided. The information was very preliminary in nature. The following advice is provided for determining the most appropriate route with regards items of heritage significance. The heritage significance of any identified heritage items or sites and any impacts the development may have upon this significance should be assessed. This assessment should include natural areas and places of Aboriginal, historic or archaeological significance. It should also include a consideration of wider heritage impacts in the area surrounding the site.	Items of listed heritage significance were identified on Figure 5-12 of the Route Options Development Report (RTA, 2005). Potential impacts on these items for each of the route options (including direct and indirect impacts) were assessed in the report. The level of information utilised to determine the heritage impacts of the route options is considered sufficient to determine the relative heritage impacts of the route options.
850	The Heritage Council maintains the State Heritage Inventory which lists some items protected under the Heritage Act, 1977 and other statutory instruments. This register can be accessed through the Heritage Office home page on the internet (http:/www.heritage.nsw.gov.au).	These comments are noted and the assessment of heritage impacts of the route options has included reference to the State Heritage Inventory, in addition to other records.

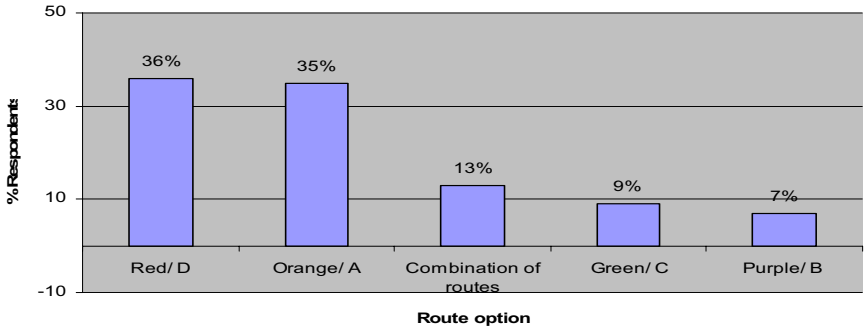
Northern Rivers Regional Development Board **(Stakeholder ID: 288)**		
851	■ The Northern Rivers Regional Development Board encourages government to consider the following principles in all matters: ■ A holistic, integrated and long-term approach to transport addressing the economic, social and environmental needs and challenges of the region. ■ Environmental sustainability and the evolution of settlement patterns should drive transport planning, investment and management decisions. ■ Maintain a stable and predictable investment environment for regional industries including agriculture, tourism and residential development. ■ The importance to the region of efficient, cost effective and convenient transport links to South East Queensland. ■ Transport planning is an integral part of a comprehensive approach to major infrastructure development including telecommunications, energy and water distribution. ■ Balance the needs of stakeholders and avoid usage conflicts to ensure higher standards of safety and a more equitable sharing of costs & impacts. ■ Triple bottom line evaluation including full cost accounting. ■ encourage behavioural change by all categories of users to achieve more energy efficient and environmentally sustainable outcomes.	Refer to response for issue number 2. A number of investigations have been undertaken for the project to allow better understanding of aspects of the project relating to safety, traffic, environmental impacts, social and economic considerations, as well as functional aspects of the highway. Ongoing investigations will continue as part of the development of this project, following the selection of a preferred route.

Northern Rivers Regional Development Board **(Stakeholder ID: 288)**		
852	▪ In terms of the highway upgrade it is important to ensure: ▪ Adequate consideration of the impacts of major highway development on the region's secondary roads network. ▪ Elimination of known safety black spots and areas of conflict between different categories of users and the utilisation of divided carriageways to separate traffic flow. ▪ Adequate community engagement in transport planning, decision-making and management to ensure that the transport system reflects the social and cultural values of the community. ▪ Management of the impact of freight movements to preserve residential amenity by, for example, the use of limited access zones and heavy vehicle curfews. ▪ The use of technical innovation to mitigate transport related noise, visual and air pollution. ▪ The introduction of strategies to alleviate the environmental impacts of high traffic volumes and congestion.	The Pacific Highway Upgrade Program objectives address a range of aspects encompassing social, environmental, functional (engineering) and economics. All of these aspects must be considered during the identification and evaluation of route options and will be the key consideration in the selection of a preferred route. In this context, the preferred route will be the one that, 'on balance', meets the project objectives, and these objectives will be the point of reference during the entire study. A number of investigations have been undertaken for the project to allow better understanding of aspects of the project relating to safety, traffic, environmental impacts, social and economic considerations, as well as functional aspects of the highway. Ongoing investigations will continue as part of the development of this project, following the selection of a preferred route.
853	Planning must be done with foresight to: ▪ Combine major infrastructure in an overall plan for future needs of the Clarence Valley. ▪ Network infrastructure for the mid/north coast & tablelands traffic, of which Grafton is a hub that would be further utilised & benefit economically if there was an adequate bridge crossing.	Clarence Valley Council has been consulted regarding the future infrastructure needs of the area and how the Pacific Highway fits in with that. The Wells Crossing to Iluka Road project is being done within the strategic context of the Pacific Highway Upgrade Program
854	Approximately half the region's population is currently concentrated on the coast in the centres of Tweed Heads, Murwillumbah, Ballina, Lismore, Yamba and Grafton. However, the region has a dispersed settlement pattern, with 57% of the region's population living in the 300 small villages or localities scattered throughout the region. Planning work on the Northern Rivers Regional Strategy and the DIPNR/Department of Planning Far North Coast Regional Strategy have recognised the village settlement pattern as a key element in past and future growth of the Northern Rivers region. Infrastructure provision and transport planning needs to be considered in terms of this settlement pattern and the unique opportunities and needs it poses.	Dispersed settlement in the study area is recognised. The characterisstics been identified through aerial photography from November 2004, from which individual dwellings and other structures have been identified. This has been supported by field inspection of the study area. The development of route options has considered current and potential future settlement patterns through review of local and regional planning strategies and planning instruments, and consultation with relevant agencies and Clarence Valley Council.

State Emergency Service **(Stakeholder ID: 2568)**		
855	Flooding impacts and access to the community during times of emergency are an important issue for emergency service vehicles. Cross median access for emergency vehicles is an important issue on all route options. A crossing is suggested at about 5 Km spacing to minimise contra flow travel by emergency response vehicles. This will equally apply to Police, Ambulance and Fire services.	The preferred route will be designed to limit the flooding impacts (levels, time of inundation and flow paths) to an acceptable level by providing a significant number of bridges and culverts to allow water to flow into and out of the floodplain. The preferred route will be designed to provide a flood immunity of 1 in 20 years, which is greater than the existing highway. Furthermore, the existing local road network will be maintained to provide local access. The RTA design guidelines for the upgrade works requires emergency crossovers (for transfer of traffic) at an average spacing of 5km, and emergency U-turn bays at an average spacing of 2.5km.
856	Both the Purple/B and the Orange/A options provide a more efficient travel path for emergency response vehicles if an interchange or emergency vehicle access (both North and South bound) is available South of the present Maclean turnoff.	The comments are noted.
857	The additional training and specialised work of the Road Crash Rescue teams limits, in a practical sense, the locations where these units can be based to the larger centres of population. The two State Rescue Board accredited units are currently sited at Grafton and Maclean. These locations provide a good base from which to draw volunteers and also provide good road access to the areas of higher risk including industrial complexes, rail, airport and the Pacific Highway. It seems as if the Red/D option and the Green/C option would be less direct as far as access from the Road Crash Rescue bases is concerned for any incident that may occur along the motorway. The remainder of the network does not seem to be adversely impacted on by any option.	The location of the interchanges will be dependant on the option selected. Following the selection of the preferred route, the location of the interchanges shall be reviewed with regard to emergency vehicle access. Consideration may be given to providing an intermediate access point for emergency vehicles by way of an at grade intersection with locked gates if required. Emergency vehicle cross-overs in line with standard design practise will be included in the road design.

4.5 Route options that best address key issues

Of the submissions received, 680 respondents expressed a preference for a particular option or indicated that a particular route, or combination of routes, best meets the issues which are important in the selection of a preferred route. **Figure 4-3** summarises the responses from the feedback form as well as all other submissions.



- **Figure 4-3: Community Preference for Route Options that Best Address Key Issues**

The results show that the Red/D and Orange/A options were most often preferred or considered to best meet the key issues, with 36% and 35% of the respondents nominating these options respectively. Some submissions nominated more than one route option and these were recorded against each route. 10% of the respondents indicated that a combination of two or more routes would best meet the issues.

4.5.1 Preference for the Orange/A option

	46, 120, 156, 159, 160, 163, 169, 175, 244, 247, 262, 265, 275, 305, 322, 347, 350, 357, 359, 360, 361, 362, 371, 377, 380, 393, 402, 412, 413, 417, 430, 436, 439, 459, 470, 476, 486, 492, 500, 505, 511, 514, 515, 516, 518, 524, 531, 537, 546, 576, 583, 599, 886, 912, 949, 1011, 1017, 1076, 1347, 1349, 1352, 1357, 1535, 1634, 1855, 1870, 1887, 1895, 1909, 1924, 1953, 1956, 1963, 1975, 1978, 1983, 1989, 1991, 1996, 1998, 2073, 2078, 2082, 2097, 2098, 2106, 2116, 2117, 2120, 2124, 2128, 2129, 2141, 2150, 2151, 2155, 2158, 2163, 2167, 2173, 2174, 2176, 2178, 2179, 2180, 2187, 2193, 2197, 2202, 2203, 2204, 2207, 2208, 2212, 2213, 2215, 2216, 2217, 2221, 2226, 2227, 2228, 2232, 2233, 2234, 2235, 2236, 2244, 2247, 2250, 2255, 2259, 2260, 2265, 2266, 2267, 2269, 2288, 2292, 2293, 2294, 2295, 2301, 2306, 2310, 2311, 2312, 2323, 2324, 2325, 2326, 2328, 2329, 2330, 2333, 2334, 2338, 2340, 2342, 2345, 2346, 2347, 2349, 2350, 2352, 2360, 2364, 2365, 2369, 2379, 2384, 2390, 2393, 2394, 2396, 2398, 2408, 2409, 2410, 2414, 2420, 2440, 2446, 2453, 2454, 2458, 2460, 2461, 2463, 2472, 2474, 2475, 2479, 2481, 2482, 2483, 2484, 2486, 2488, 2492, 2497, 2499, 2500, 2501, 2505, 2506, 2507, 2508, 2511, 2648

Issue No.	Reasons Provided	Stakeholder ID
858	Minimises impacts eg. noise, air pollution, lifestyle, amenity, severance and land value impacts on communities that were previously not affected by the highway eg. Gulmarrad, James Creek and Pillar Valley	159, 160, 275, 322, 359, 360, 362, 476, 492, 500, 511, 514, 518, 546, 576, 1011, 1017, 1347, 1887, 1989, 2082, 2097, 2117, 2163, 2187, 2203, 2213, 2235, 2259, 2267, 2294, 2295, 2301, 2311, 2312, 2323, 2324, 2326, 2334, 2338, 2345, 2458, 2463, 2479, 2484, 2492, 2497, 2499, 2503
859	Provides the best access to Grafton and other towns eg. Ulmarra, thereby providing benefits to the local economy as motorists would be more likely to stop. It also benefits the local community by providing better access to services and employment	120, 160, 175, 244, 275, 305, 347, 359, 362, 430, 511, 518, 531, 546, 576, 583, 886, 949, 1011, 1349, 1535, 1634, 1895, 1963, 2082, 2129, 2174, 2178, 2202, 2203, 2215, 2216, 2217, 2226, 2235, 2250, 2260, 2292, 2295, 2310, 2311, 2323, 2324, 2325, 2326, 2328, 2333, 2342, 2345, 2369, 2394, 2408, 2409, 2410, 2446, 2458, 2460, 2461, 2484, 2497, 2503
860	Minimises ecological impacts eg. minimises impacts on the habitat of the endangered Coastal Emu, minimises impacts on wildlife corridors, avoids ecologically significant wetlands[3], avoids State Forests[4] and National Parks[5]	46, 175, 275, 305, 360, 362, 377, 430, 476, 492, 500, 518, 524, 531, 546, 886, 949, 1011, 1017, 1076, 1347, 1634, 1887, 1909, 1924, 1953, 1975, 2097, 2098, 2116, 2163, 2178, 2187, 2197, 2203, 2204, 2208, 2213, 2217, 2226, 2232, 2244, 2267, 2288, 2294, 2295, 2311, 2323, 2324, 2325, 2326, 2329, 2330, 2334, 2338, 2345, 2365, 2390, 2394, 2446, 2446, 2458, 2472, 2482, 2484, 2492, 2497, 2499, 2500, 2501, 2503, 2648
861	Minimises environmental damage	160, 175, 265, 305, 360, 362, 459, 531, 546, 583, 1909, 1924, 1963, 1991, 2193, 2202, 2203, 2212, 2244, 2250, 2259, 2260, 2266, 2293, 2295, 2310, 2311, 2338, 2341, 2350, 2410, 2446, 2454, 2463, 2481, 2497, 2503, 2508

[3] The Orange/A option would have a minor encroachment on a SEPP 14 wetland at the northern end of the route.

[4] The Orange/A option would have a minor encroachment on Glenugie State Forest and Bom Bom State Forest.

[5] None of the options would impact on National Parks, however, the Orange/A option would have a minor encroachment on Yaegl Nature Reserve.

Issue No.	Reasons Provided	Stakeholder ID
862	Attracts the highest traffic volumes and therefore will provide the greatest safety benefits	120, 160,175, 244, 265, 359, 371, 516, 1011, 1076, 1895, 1953, 2098, 2128, 2217, 2323, 2324, 2325, 2326, 2345, 2364, 2483, 2497, 2501, 2503, 2511
863	Provides benefits to local traffic	46, 160, 265, 275, 357, 362, 430, 511, 518, 949, 1887, 1953, 1989, 2097, 2255, 2301, 2323, 2324, 2345
864	Minimises the cost of maintaining the existing highway	350, 1953, 2098, 2174, 2213, 2217, 2255, 2323, 2338, 2364
865	Follows the alignment of the existing highway and therefore capitalises on existing infrastructure and minimises disruption to untouched areas[6]	275, 357, 470, 486, 492, 511, 514, 515, 518, 537, 546, 599, 886, 949, 1347, 1349, 1352, 1998, 2207, 2106, 2212, 2213, 120, 417, 576, 583, 2235, 2266, 2288, 2306, 2311, 377, 2330, 2334, 2338, 505, 350, 1983, 2346, 2360, 2384, 1535, 1975, 1989, 2073, 2097, 2116, 2124, 2129, 2151, 2155, 2167, 2396, 2410, 2414, 2446, 2453, 2460, 2463, 2482, 2484, 2497, 2499, 2500
866	Devaluation of land would be less significant as current land values would already reflect their close proximity to the existing highway	2073
867	Minimises impacts on agricultural land[7]	46, 500, 583, 1347, 2097, 2213, 2269, 2288, 2398, 2463, 2482
868	Is cost-effective ie. cheaper cost per vehicle	120, 371, 2098, 2128
869	Doesn't hamper the development potential of Gulmarrad and James Creek[8]	430, 2098
870	Better soil conditions and flood immunity than the other options and doesn't degrade new areas of floodplain	46, 362, 500, 583, 1347, 2295, 2310
871	It incorporates bypasses of Ulmarra and Tyndale, which have been talked about for years	500, 546, 949, 2151, 2173, 2217, 2323, 2503
872	Minimises impacts on businesses that rely on through traffic eg businesses along the existing highway	546, 1347, 2475, 2511
873	Most beneficial for the development of the area	1357, 2347
874	Best meets the needs of the community economically, socially and environmentally	359, 360, 362, 524, 1349, 1634, 1887, 1953, 2106, 2173, 2180, 2187, 2207, 2301, 2345, 2352, 2364

[6] While the Orange/A option would maximise opportunities to use the existing road infrastructure, some modifications to the existing alignment would be required at a number of locations to meet the design standards of the proposed upgrade.

[7] The Orange/A would impact on 465 ha of prime agricultural land including grazing land, cane farms and dairy farms. The Purple/B, Green/C and Red/D options would impact on 265ha, 115ha and 220ha of prime agricultural land respectively.

[8] All options have been designed to avoid impacting on areas that have been earmarked for future development in the Clarence Valley Settlement Strategy.

Issue No.	Reasons Provided	Stakeholder ID
875	Best meets the principles of ecologically sustainable development and is not likely to result in irreversible impacts	275, 2106, 2207, 2414
876	Best meets the objectives of the Pacific Highway Upgrade Program and the project	160, 163, 175, 275, 359, 1953, 2106, 2207, 2234
877	Able to be constructed in stages and therefore, the benefits of the upgrade would be realised faster	163, 275, 362, 371, 1953, 2178, 2202, 2217, 2288, 2323, 2325, 2326, 2503
878	Best for tourism eg. doesn't affect the environmental qualities of the coast	362, 2187, 2311
879	Provides better connections between the Pacific Highway and other major roads eg. Gwydir Highway and Summerland Way	413, 546, 2484, 2503
880	Requires minimal earthworks thus minimising changes to flooding in the floodplain[9]	2499
881	Minimises development pressure on small coastal communities such as Minnie Water and Wooli, which do not have the capacity for increased visitation	524
882	Would not impede the movement of water coming off the hills, thereby minimising local flooding impacts around Pillar Valley[10]	2311
883	Personal reasons eg. minimises impacts on the author's property or area	322, 393, 2073, 2120, 2228, 2393, 2508

4.5.2 Preference for Purple/B Option

	156, 178, 331,354, 373, 399, 413, 421, 426, 437, 465, 949, 1008, 1340, 1855, 1871, 1887, 1956, 1978, 1998, 2006, 2068, 2083, 2156, 2179, 2198, 2208, 2211, 2213, 2227, 2243, 2312, 2468, 2470, 2494, 2568

[9] The Orange/A option would require a significant amount of fill to be imported and has the greatest risk of potentially impacting existing flooding patterns.

[10] All options would be designed to provide sufficient bridges and culverts to minimise the changes to existing flood patterns (flood height, flood durations, flood flows and velocities).

Issue No	Reasons Provided	Stakeholder ID
884	Minimises impacts eg. noise, air pollution, severance and visual impacts on communities that were previously not affected by the highway eg. Gulmarrad, James Creek and Taloumbi	178, 331, 373, 413, 426, 1125, 1340, 1887, 1978, 2006, 2083, 2213, 2243, 2270, 2292, 2299, 2312, 2385, 2468, 2511
885	Affects the least built-up communities / doesn't affect as many people	399, 421, 465, 1008, 2156, 2470
886	Minimises ecological impacts eg. minimises impacts on wetlands[11], remnant habitats and threatened species, populations and ecological communities, avoids Yaegl Nature Reserve[12]	178, 331, 373, 1887, 1978, 1998, 2208, 2213, 2292
887	Minimises impacts on coastal strip / relatively undeveloped areas to the east	399, 949
888	Minimises impacts on prime agricultural land[13]	413, 437, 1008, 1887, 2156, 2213, 2292
889	Best meets the needs of the community	373
890	Able to be constructed in stages – sections of the new motorway could be completed sooner, thereby improving safety	178, 1008, 1978, 2198
891	Southern interchange is closer to Grafton and the Grafton Airport than the interchange of the Green/C and Red/D options, thereby providing easier access to the town and airport for the community, business and tourists	178, 2083, 2198, 2243, 2385, 2268
892	Utilises existing highway corridor / infrastructure at southern and northern ends	2213, 2468
893	Reduced length compared to the Orange/A option	1008, 2243
894	Will help remove heavy traffic from existing highway thus improving safety	399, 2156
895	Minimises impact on flooding compared to the Orange/A option	178, 399, 1008, 2494, 2568
896	Provides better access to the Summerland Way and Gwydir Highway than the Green/C and Red/D options	1956
897	Provides better access for emergency vehicles[14]	2568

[11] The Purple/B option would have a minor encroachment on a SEPP 14 wetland at the northern end of the route.

[12] The Purple/B option would have a minor encroachment on Yaegl Nature Reserve.

[13] The Purple/B option would impact on 265 ha of prime agricultural land including grazing land, cane farms and dairy farms. The Orange/A, Green/C and Red/D options would impact on 465ha, 115ha and 220ha of prime agricultural land respectively.

Issue No	Reasons Provided	Stakeholder ID
898	Better foundation for road construction compared to the Orange/A option	1008
899	Is more cost-effective than the Orange/A option	178, 1008, 2006
900	Caters for through traffic	2511
901	Personal reasons eg. minimises impacts on the author's property or area	421, 1125, 2270

4.5.3 Preference for the Green/C option

	125, 149, 150, 180, 227, 230, 290, 294, 375, 424, 474, 495, 520, 530, 560, 621, 876, 888, 892, 898, 976, 1053, 1063, 1181, 1204, 1206, 1296, 1503, 1583, 1625, 1668, 1852, 1917, 1956, 2012, 2076, 2103, 2118, 2132, 2139, 2175, 2181, 2214, 2237, 2262, 2274, 2275, 2279, 2282, 2284, 2316, 2317, 2354, 2372, 2389, 2404, 2407, 2448, 2449, 2462, 2494

[14] Consideration will be given to providing an intermediate access point for emergency vehicles by way of an at grade intersection with locked gates.

Issue No	Reasons Provided	Stakeholder ID
902	Has the least detrimental effects on people and communities	125, 424, 520, 530, 560, 976, 1204, 1206, 1503, 1583, 1625, 1852, 2076, 2262, 2279, 2317, 2404
903	Affects the least number of homes (in terms of acquisition)	125, 149, 150, 230, 294, 621, 976, 1063, 1181, 1204, 1296, 1668, 1825, 1852, 1917, 2181, 2274, 2407
904	Provides greatest safety benefit	125, 424, 1204, 1503, 1583, 2284
905	Minimises impacts on agricultural land	149, 150, 230, 560, 876, 976, 1204, 1206, 1668, 2012, 2407
906	Minimise impacts on the sugar industry	495, 1206, 1625, 2275, 2317
907	Lower visual impact than western options	230
908	Minimises impact on Maclean	1583, 2404
909	Does not impact on indigenous land	1053
910	Benefits businesses along existing highway as local traffic and some tourists would continue to use the existing highway	1917
911	Shortest and most direct route, thereby providing greatest travel time savings for through traffic	125, 149, 150, 227, 290, 876, 888, 898, 976, 1296, 1503, 1625, 1668, 2132, 2139, 2237, 2262, 2354, 2404, 2448, 2449, 2462
912	Will help remove heavy traffic and through traffic from existing highway, thus improving safety	520, 898, 1206, 2284, 2462
913	Has the shortest length of floodplain crossing, thereby minimising potential flooding impacts	125, 150, 230, 294, 560, 976, 1053, 1206, 1583, 1625, 2132, 2282, 2372, 2407, 2494
914	More room for interchanges and access roads to and from the highway[15]	1583
915	Uses state owned land	2159
916	Cheapest to construct	125, 149, 150, 227, 230, 290, 294, 560, 621, 876, 888, 976, 1053, 1063, 1181, 1204, 1296, 1503, 1583, 2237, 2262, 2279, 2316, 2404, 2407, 2462
917	Availability of on-site construction material	150, 230, 294, 560, 2275
918	Least noise impact	230, 290, 294, 1181, 1503, 2262, 2404

[15] Potential interchange locations for the Green/C option have been identified at Wells Crossing and south of Harwood Bridge. New access roads to and from the highway would not be constructed.

Issue No	Reasons Provided	Stakeholder ID
919	Avoids areas of urban growth and minimises impacts on development applications which have been approved or are pending[16]	290, 2262
920	Best meets design objectives	2279
921	Will cause least disruption to local residents and highway traffic during construction	227, 294, 520, 976, 1181, 2012
922	Provides a good fire break for the State Forest	1956
923	Minimises impacts on ecology[17]	2118
924	Personal reasons eg. minimises impacts on the author's property, business or area	150, 1053, 1063, 1917

4.5.4 Preference for the Red/D option

	149, 150, 156, 180, 224, 227, 230, 238, 240, 257, 281, 290, 294, 313, 334, 375, 419, 424, 453, 454, 471, 474, 499, 504, 512, 520, 529, 530, 585, 597, 632, 640, 863, 887, 892, 949, 950, 959, 962, 969, 971, 976, 993, 998, 1010, 1053, 1063, 1099, 1108, 1171, 1172, 1181, 1205, 1267, 1296, 1297, 1299, 1340, 1426, 1493, 1496, 1503, 1583, 1668, 1731, 1783, 1858, 1917, 1956, 1958, 2012, 2076, 2103, 2107, 2114, 2115, 2118, 2119, 2123, 2131, 2132, 2142, 2146, 2158, 2167, 2169, 2175, 2181, 2183, 2195, 2200, 2201, 2214, 2218, 2229, 2237, 2252, 2257, 2262, 2275, 2278, 2282, 2283, 2284, 2285, 2291, 2305, 2309, 2314, 2319, 2335, 2340, 2356, 2358, 2362, 2371, 2373, 2376, 2380, 2385, 2386, 2404, 2407, 2411, 2434, 2441, 2462, 2467, 2469, 2471, 2476, 2478, 2485, 2487, 2489, 2491, 2509, 2513,

[16] All options have been designed to avoid impacting on areas that have been earmarked for future development in the Clarence Valley Settlement Strategy.

[17] The Green/C option would have a more substantial impact on ecology than the other options as it would sever fauna corridors and it traverses an ecologically significant.

Issue No	Reasons Provided	Stakeholder ID
925	Least detrimental effects on people and communities	238, 257, 290, 294, 424, 504, 520, 530, 632, 640, 887, 949, 959, 969, 971, 976, 993, 1172, 1204, 1205, 1297, 1503, 1583, 1958, 2076, 2115, 2142, 2229, 2257, 2309, 2314, 2358, 2404, 2411, 2434, 2467, 2489, 2509
926	Minimises impact on private property owners	224, 240, 632, 863, 998, 1108, 1493, 1731, 2118, 2309, 2371, 2373, 2434, 2469
927	Minimises the impacts on homes (in terms of acquisition)	149, 150, 230, 294, 949, 950, 976, 993, 1010, 1063, 1171, 1181, 1204, 1296, 1299, 1668, 1917, 2181, 2257, 2358, 2407, 2476, 2513
928	Provides the greatest safety benefit	424, 1172, 1204, 1205, 1496, 1958, 2200, 2285, 2509
929	Minimises impacts on agricultural land and people's livelihoods	149, 150, 230, 238, 294, 949, 950, 959, 971, 976, 993, 998, 1010, 1171, 1172, 1204, 1299, 1496, 1668, 2012, 2118, 2305, 2373, 2407, 2434, 2476, 2487, 2491, 2509, 2513
930	Minimise impacts on the sugar industry	2275
931	Minimises visual impacts	230, 2441
932	Minimises impact on Maclean	1583, 2404
933	Minimises impact on indigenous land	294, 1053
934	Benefits businesses along existing highway as local traffic and some tourists would continue to use the existing highway	1917
935	Shortest and most direct route, thereby providing greatest travel time savings for through traffic along with reduced fuel costs and emissions	149, 150, 227, 238, 290, 294, 313, 453, 471, 504, 512, 520, 597, 640, 863, 949, 950, 959, 960, 971, 976, 993, 998, 1010, 1108, 1171, 1299, 1426, 1493, 1496, 1503, 1668, 1858, 1958, 2114, 2132, 2200, 2201, 2218, 2237, 2257, 2262, 2285, 2291, 2309, 2319, 2335, 2340, 2356, 2376, 2380, 2386, 2404, 2411, 2434, 2462, 585
936	Will help remove heavy traffic and through traffic from existing highway, thus improving safety	504, 520, 971, 993, 2284, 2319, 2462, 2513
937	Reduced length of floodplain crossing compared to the Orange/A and Purple/B options, thereby minimising potential flooding impacts and potential disturbance of acid sulphate soils	150, 230, 238, 257,294, 499, 640, 949, 959, 971, 976, 993, 998, 1010, 1053, 1426, 1493, 1172, 2132, 2183, 2257, 2278, 2282, 2305, 2371, 2407, 2411, 2434, 2476, 2487, 2491, 2513
938	Uses state owned land	2487

Issue No	Reasons Provided	Stakeholder ID
939	Cheapest to construct	149, 150, 227, 230, 238, 257, 290, 294, 313, 334, 453, 471, 499, 504, 529, 597, 863, 949, 950, 959, 960, 971, 976, 993, 998, 1053, 1063, 1099, 1108, 1171, 1172, 1181, 1205, 1296, 1299, 1426, 1493, 1503, 1583, 1783, 1858, 1958, 2118, 2119, 2146, 2183, 2200, 2201, 2229, 2237, 2257, 2262, 2285, 2309, 2314, 2319, 2340, 2356, 2371, 2376, 2380, 2385, 2404, 2434, 2476, 2489, 2491, 2513
940	Availability of on-site construction material	180, 230, 294, 529, 949, 962, 971, 1299, 2275
941	Minimises noise impacts	294, 1181, 2262, 2404, 2476
942	Minimises impacts on major developed areas and areas already zoned for residential development[18]	290, 313, 334, 471, 499, 949, 962, 971, 993, 1099, 1503, 2167, 2262, 2386, 2404, 2491
943	Best meet project objectives	230
944	Easier / faster to construct	150, 290, 294, 520, 949, 976, 993, 1426, 2314, 2462
945	Will cause least disruption to local residents and highway traffic during construction	227, 238, 294, 313, 499, 960, 971, 976, 993, 1181, 1205, 1493, 2012, 2158, 2183, 2319, 2380, 2411, 2489, 585
946	Does not encroach on environmentally sensitive areas eg. conservation areas, forests[19], National Parks[20], wetlands, flora and fauna habitat[21]	294, 313, 334, 949, 950, 962, 971, 976, 998, 1205, 1297, 1340, 1493, 1496, 1731, 1858, 2118, 2200, 2201, 2229, 2309, 2386, 2411, 2434, 2467, 2469, 2478, 2489, 2476
947	Does not need to be staged	499, 2489
948	Minimises impacts on heritage sites	950
949	Provides an alternative route for use in times of emergency such as bushfires, floods or accidents	971, 993
950	Leaves local road network for locals	1172, 2476
951	Better road foundation	1299
952	Least negative impacts on the Clarence Valley	2278
953	Located closer to the coast	2358

[18] All options have been designed to avoid impacting on areas that have been earmarked for future development in the Clarence Valley Settlement Strategy.

[19] The Red/D option would have a minor encroachment on Glenugie State Forest.

[20] None of the options would impact on National Parks.

[21] The Red/D option would impact on high value fauna corridors between Yaegl Nature Reserve and the coast, and between the floodplain and Coast Range forest habitats.

Issue No	Reasons Provided	Stakeholder ID
954	Only crosses two main roads	2386
955	Personal reasons eg. minimises impacts on the author's property, business or area	150, 474, 971, 1053, 1063, 1172, 1917, 2252

4.5.5 Preference for a combination of options

Issue ID	Suggested Route	Reasons Provided	Stakeholder ID
956	Combination of Orange/A and Purple/B[22]	■ Minimises impacts on communities that are not currently affected by the existing highway ■ Minimises impacts of land de-valuation ■ Minimises ecological impacts	360
957	Purple/B from Wells Crossing to the Tyndale connection, then Orange/A to Harwood Bridge	■ Provides access to Grafton and the Grafton Airport ■ Minimises impacts on forests, wetlands, and rural and residential areas ■ Cost-effective	537, 863, 1632, 1998, 2427
958	Purple/B from Wells Crossing to Pillar Valley, then Green/C to the Shark Creek connection, then Purple/B to Harwood Bridge	■ Provides access to Grafton and the Grafton Airport ■ Minimises impact on Pillar Valley, Gulmarrad and James Creek ■ Able to be constructed in stages ■ Avoids impacts on fauna corridor between Yaegl Nature Reserve and the coast	245
959	Purple/B from Wells Crossing to Pillar Valley, then Green/C to Harwood Bridge	■ Provides access to Grafton and the Grafton Airport ■ Minimises impacts on Pillar Valley ■ Provides an opportunity to cross the Clarence River to the east of the Harwood Mill ■ Minimises impact on homes ■ Minimises impacts on flooding ■ Cost-effective ■ Minimises impacts on highway traffic flow ■ Minimises impacts on property owners	150, 598, 1897, 1941, 2382

[22] The author did not specify a particular route.

Issue ID	Suggested Route	Reasons Provided	Stakeholder ID
960	Purple/B from Wells Crossing to Pillar Valley, then Red/D to the Shark Creek connection, then Purple/B to Harwood Bridge	■ Minimises ecological impacts ■ Provides access to Grafton and the Grafton Airport ■ Minimises impacts on established properties	1346, 2221
961	Purple/B from Wells Crossing to Pillar Valley, then Red/D to Harwood Bridge	■ Minimises impacts on people and homes ■ Cost-effective ■ Provides an opportunity to cross the Clarence River to the east of the Harwood Mill ■ Minimises impacts on flooding	150, 491, 520, 530, 598, 1897, 1958, 2291, 2335, 2380
962	Green/C - Red/D from Wells Crossing to Pillar Valley, then Purple/B to Harwood Bridge	■ Minimises noise impacts on residential areas that are currently not affected by highway noise ■ Minimises impacts on cane farms and grazing areas to the east of the existing highway ■ Utilises existing highway infrastructure between Shark Creek and Harwood Bridge ■ Cost-effective ■ Reduced length compared to the Orange/A and Purple/B options ■ Minimises impacts on Glenugie State Forest ■ Minimises impacts on ecological areas ■ Minimises number of home to be acquired ■ Will help remove heavy traffic and through traffic from existing highway, thus improving safety ■ Able to be constructed in stages ■ Minimises disruption to local residents and highway traffic during construction	159, 403, 1205, 1313, 1875, 2161, 2199, 2370, 2433
963	Green/C from Wells Crossing to the Shark Creek connection, then Purple/B to Harwood Bridge	■ Minimises impacts on the Gulmarrad and James Creek communities ■ Benefits properties along the existing highway ■ Utilises existing highway infrastructure between Shark Creek and Harwood Bridge	159, 413, 608, 1632, 2088, 2209
964	Green/C from Wells Crossing to Brooms Head Road, then Red/D to Harwood Bridge	■ Minimises impacts on people ■ Minimises impacts on agricultural land ■ Minimises impacts on flooding ■ Cheapest to construct	441

Issue ID	Suggested Route	Reasons Provided	Stakeholder ID
965	Combination of Green/C and Red/D[1]	■ Cheapest to construct ■ Minimises impacts on people ■ Minimises impact on ecology ■ Minimises disruption to local residents and highway traffic during construction	180, 375, 424, 2182, 2284, 2339, 2407
966	Red/D from Wells Crossing to the Shark Creek connection, then Purple/B to Harwood Bridge	■ Minimises noise impacts on residential areas that are currently not affected by highway noise e.g. Gulmarrad and James Creek ■ Minimises impacts on cane farms and grazing areas to the east of the existing highway ■ Minimises impacts on existing highway businesses ■ Avoids areas of urban growth	159, 403, 413, 417, 441, 608, 976, 1021, 1121, 1632, 1855, 2088, 2149, 2238, 2249, 2296, 2441
967	Red/D from Wells Crossing to Brooms Head Road, then Green/C to Harwood Bridge	■ Future cargo haulage benefit ■ Minimises impacts on agricultural land ■ Minimises impact on flooding ■ Cheapest to construct ■ Less disruption during construction ■ Minimises ecological impacts ■ Reduced length of route ■ Better soil foundations to construct a motorway	149, 150, 168, 356, 495, 598, 606, 908, 1159, 1260, 1893, 2107, 2273, 2275
	Green/C to Brooms Head Road, then Red/D[23]	■ Minimises impact on the sugar industry ■ Cost-effective ■ Would affect the least number of houses ■ Reduced length of route ■ Located on higher ground	532, 605

[23] The author did not specify whether they preferred Green/C from Wells Crossing to Brooms Head Road, then Red/D to Harwood Bridge or Red/D from Wells Crossing to Brooms Head Road, then Green/C to Harwood Bridge.

4.6 Analysis of community feedback forms

The community feedback form gave the community the opportunity to:

- Identify the relative importance of ten different issues in selecting a preferred route; and
- Nominate which route they felt best addressed those key issues and the reasons for their choice.

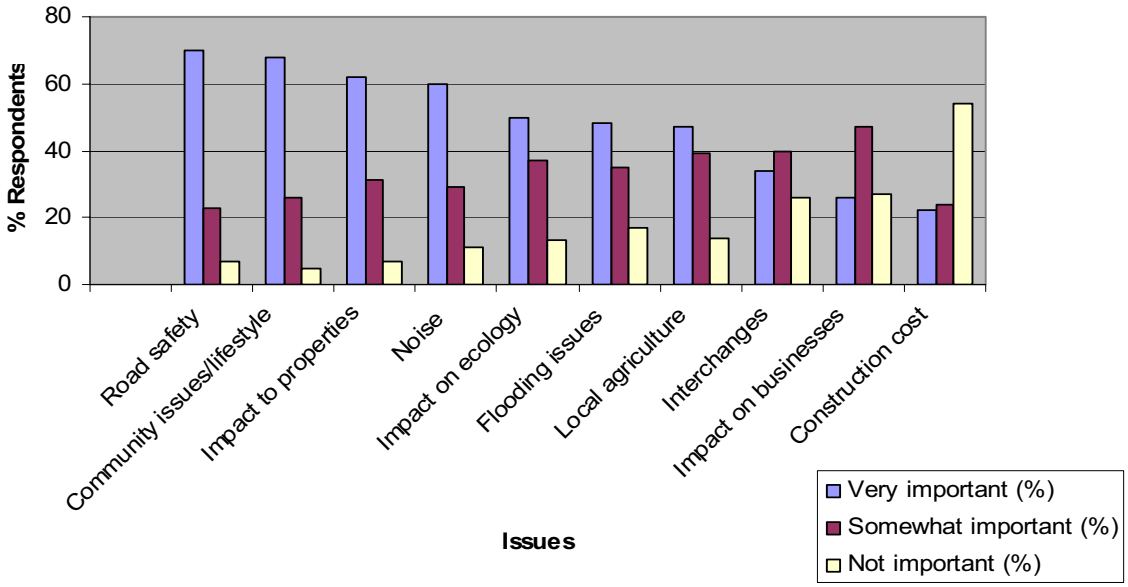
A total of 984 community feedback forms were submitted via post or the website from within and outside of the study area, including the Northern Territory, South Australia, Queensland and Western Australia.

Table 4-2 and **Figure 4-4** summarise the responses indicating the relative importance of the issues in selecting a preferred route.

- **Table 4-2: Analysis of Issues from Community Feedback Forms**

Issues	Very Important (%)	Somewhat Important (%)	Not Important (%)
Road safety	70	23	7
Community issues/lifestyle	68	26	5
Impact on properties	62	31	7
Noise	60	29	11
Impact on ecology	50	37	13
Flooding issues	48	35	17
Local agriculture	47	39	14
Interchanges	34	40	26
Impact on businesses	26	47	27
Construction cost	22	24	54

The majority of respondents (70%) felt that road safety was a very important consideration in selecting the preferred route. This was closely followed by community issues / lifestyle (68%), impact on properties (62%) and noise (60%). The majority of respondents (54%) felt that construction cost was not important but all other issues were somewhat important or very important.



- **Figure 4-4: Analysis of Issues from Community Feedback Forms**