

Coffs Harbour Highway Planning Strategy Report

May 2003

Sapphire to Woolgoolga Upgrade Community Involvement Summary Report (Route Options Stage)

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For Coffs Harbour City Council, PlanningNSW, and the Roads and Traffic Authority

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Executive Summary

Introduction

As part of the Pacific Highway Upgrading Program, the NSW Roads and Traffic Authority (RTA) is investigating an upgrade of a section of the Pacific Highway north of Coffs Harbour by widening, duplication and/or deviation. The section of highway extends from Sapphire to north of Woolgoolga. The project development work includes route selection and concept development to assess the project in terms of a range of functional, environmental and socio-economic criteria in accordance with the statutory requirements of the *Environmental Planning and Assessment Act 1979* (as amended).

Upgrading of the Sapphire to Woolgoolga section forms part of the Coffs Harbour Highway Planning Strategy, which is being developed to meet the future traffic needs of the Pacific Highway through the Coffs Harbour Local Government Area (LGA). The strategy is being overseen by a steering committee which includes representatives of PlanningNSW, Coffs Harbour City Council (CHCC) and the Roads and Traffic Authority (RTA).

The purpose of this Community Involvement Summary Report is to document the overall exhibition process and feedback in the period between the display of Route Options for the Sapphire to Woolgoolga Upgrade on December 6, 2002, until the close of receipt of submissions on February 28, 2002. Allowance also was made for late deliveries to the Reply Paid PO Box. Submissions and survey forms cleared from the PO Box until close of business on March 3, 2002, were included, as were representations made to the Minister for Roads, other Government Members and representatives of the three Steering Committee partners which were pre-dated March 1, 2002, but forwarded for assessment after this date. One community group also had pre-arranged the inclusion in this assessment of a submission that was compiled following a meeting held on March 19, 2002.

It should be noted that the feedback reported in this summary is not necessarily representative of the views of the overall Coffs Harbour and Northern Beaches communities. The outcomes are the result of responses to questions on the "Have Your Say" survey form as well as written submissions and, statistically, cannot be considered as a valid sample survey of the area. In addition, the activities of interest groups, as outlined in Section 2.3 of this report, are likely to have influenced the submissions received. The extent of this influence is impossible to determine.

Stakeholder Involvement

Since the project launch in September 2001, there has been extensive interaction and involvement of a wide range of community groups and individuals. During the route options exhibition, this extensive interaction and involvement has continued. There have also been a number of additional community involvement activities organised by certain groups who have strong preferences for or against particular options in both the northern and southern sections of the strategy. These activities have included the production of stickers, T-shirts, petitions, regular updating of a web site and unofficial staffed displays in shopping centres. Public meetings also have been held by the groups, including one at Woolgoolga during the route options exhibition, which was attended by more than 500 residents.

Stakeholder Responses

The stakeholder response to the route options exhibition comprised 390 written submissions, including three petitions, and 1050 survey forms.

Survey forms were provided in a mailout of Community Update No.3 to potentially affected property owners and to stakeholders on the strategy database. They also were provided to interest groups in bulk, on request through the project's Freecall telephone inquiry number and at the staffed and static displays. Approximately 9560 copies of Community Update No.3 and survey forms were distributed by

the project team. In addition, at its request, 780 copies of the community update newsletter, which included survey forms, were provided to a community group called the Combined Lobby Group along with more than 4050 separate photocopied survey forms.

Most survey form and submission respondents cited issues for each of the options that have been raised in previous community feedback.

However, despite the issues being common to most respondents, their impacts or effects were seen to be widely disparate for the same option. Some respondents saw an issue as having "severe", "maximum", "most" or "negative" impact on an option while other respondents saw the impact for the same issue as being "minimal", "least" or "positive". Such views of "negative" and "positive" effects applied to all major issues raised.

The issues were assessed and tabled below according to the following benchmarks:

- The issue was considered to be of major importance to the community if it was raised in more than 100 submissions; and
- If there were twice as many respondents who saw the impacts as "positive", then the issue has been tabled as positive; and if there were twice as many respondents who saw the impacts as "negative", then the issue has been tabled as negative.

Option	Positive	Negative
A	* Noise and vibration	* Forestry activities * Indigenous heritage * Geology and soils * Flora and fauna * Access * Travel time and efficiency * Waterways quality * Cost of construction * Ability to provide firebreak
B1 and B2		* Residential property * Agricultural land use * Business and tourism * Noise and vibration * Visual and urban design * Indigenous heritage * Geology and soils * Flora and fauna * Community impacts (B1 only) * Access * Travel time and efficiency (B2 only) * Waterways quality * Cost of construction (B1 only)
C	* Indigenous heritage * Access * Travel time and efficiency * Waterways quality	* Noise and vibration * Community impacts
D	* Residential property * Agricultural land * Business and tourism * Indigenous heritage * Flora and fauna * Access * Travel time and efficiency * Waterways quality	* Noise and vibration * Air quality

Many respondents saw the exhibition period as an opportunity to record a vote, in favour of or against each of the upgrade options north of Moonee, or to record a "first preference" and "second preference" for these options. Of the 1,450 "first preferences" received, 839 (58%) were for Option A, 69 (5%) for Option B1, 45 (3%) for Option B2, 99 (7%) for Option C, 222 (15%) for Option D, 13 (1%) for the Orara Way and 159 (11%) for the Coastal Ridge Way. Of the 128 "second preferences" received, 26 (21%) were for Option A, 27 (21%) for Option B1, 49 (39%) for Option B2, 6 (5%) for Option C and 18 (14%) for Option D.

For the highway upgrade between Sapphire and Moonee, respondents also saw this as an opportunity to record a preference for the location of proposed interchanges although they also listed improvements for this section. Most of the improvements suggested concerned additional service roads, a reduction in speed limit, the provision of cycleway and pedestrian access, noise mitigation and visual mitigation measures and the provision of alternative access to the highway mostly through seagull intersections rather than left in-left out only accesses.

Many of the respondents provided with survey forms from unofficial staffed displays did not cite impacts, benefits or improvements regarding the options. Of those who did, many identified issues relevant to the southern section of the strategy area. Survey forms from unofficial staffed displays were collected by the organisers and returned in bulk for assessment which allowed the identification of their source.

Submissions – other main issues

While most of the main issues raised in the submissions received were the same as those raised in the survey forms, some submissions raised over-arching issues related to the Pacific Highway in general, both sections of the Coffs Harbour Highway Planning Strategy or issues not reflected in the graphic representations in Section 3.

These included an increase in heavy vehicle movements since the opening of the Yelgun to Chinderah bypass, increased use of rail to reduce road freight, incorporating feedback from the transport industry into the consideration of the Coffs Harbour Highway Planning Strategy, adopting an integrated approach to the strategy, the planning horizon of the Sapphire to Woolgoolga Upgrade, the timeframe for a bypass of Coffs Harbour and the incorporation of emergency services and safety considerations into any final design.

Interim Submissions

A total of 109 submissions and seven survey forms were received between close of receipt of submissions for Stage 2 Corridor Options on May 10, 2002, and the announcement of Stage 3 Route Options for the Sapphire to Woolgoolga section of the Coffs Harbour Highway Planning Strategy on December 6, 2002. Most of the submissions received related to Information Sheet No.2 which was released in March 2002 and a Community Update which was released in September 2002.

Conclusion

A range of views was expressed in the survey forms and submissions received on the merits of the bypass options from north of Moonee as well as the upgrade of the existing highway between Sapphire and Moonee.

The issues raised by respondents will be taken into account as part of the process to select a preferred route. Other inputs will include various reports produced by the project team, workshops with key stakeholders and comments from State Government agencies.

Each option will be compared to identify the route that achieves the best balance between functional, ecological and socio-economic factors while providing for the future needs of road users and local communities.

A decision on a preferred route is expected to be announced in mid-2003.

1. Introduction

1.1 Project Background

As part of the Pacific Highway Upgrading Program, the NSW Roads and Traffic Authority (RTA) is investigating an upgrade of a section of the Pacific Highway north of Coffs Harbour by widening, duplication and/or deviation. The section of highway extends from Sapphire to north of Woolgoolga. The project development work includes route selection and concept development to assess the project in terms of a range of functional, environmental and socio-economic criteria in accordance with the statutory requirements of the *Environmental Planning and Assessment Act 1979* (as amended).

Upgrading of the Sapphire to Woolgoolga section forms part of the Coffs Harbour Highway Planning Strategy, which is being developed to meet the future traffic needs of the Pacific Highway through the Coffs Harbour Local Government Area (LGA). The strategy was initiated in early 2001 when a steering committee was formed. Made up of representatives of PlanningNSW, Coffs Harbour City Council (CHCC) and the Roads and Traffic Authority (RTA), the steering committee is overseeing the development of the strategy, while the RTA is managing the technical investigations. The strategy was publicly launched in September 2001, and an information sheet on the main issues and findings to date was released in March 2002.

Following a decision by CHCC to conduct a peer review of the work completed up to March 2002, the steering committee deferred work on the southern section and proceeded with investigations on the Sapphire to Woolgoolga section. The steering committee determined that investigations into the northern and southern sections of the strategy area would be undertaken as two separate, but inter-related activities. The investigations into the southern section recommenced in November 2002 following completion of the peer review.

In December 2002, a community update was released which identified the route options for the northern section. In the section from Sapphire to Moonee, the existing highway corridor had previously been identified as the only potentially feasible and suitable corridor option for upgrading the highway. The development of design concepts in this section focused on issues associated with an upgrade of the existing highway in what is a highly constrained corridor. Two main design options were based around major interchanges centered at either Headland Road or Gaudrons/Spilt Solitary Road. In the area north of Moonee, four corridor options had previously been identified – three deviation corridor options north of Moonee (Options A, B and C) as well as the existing highway corridor (Option D). Four route options (including a sub-deviation of the B corridor) were developed – Options A, B1, B2, C and D. – and released for community feedback in December 2002.

1.2 Purpose of Report

The purpose of this Community Involvement Summary Report is to document the overall exhibition process and feedback in the period between the announcement of Route Options for the Sapphire to Woolgoolga Upgrade on December 6, 2002, until the close of receipt of submissions on February 28, 2002. Allowance also was made for late deliveries to the Reply Paid PO Box. Submissions and survey forms cleared from the PO Box until close of business on March 5, 2002, were included, as were representations made to the Minister for Roads, other Government Members and representatives of the three Steering Committee partners which were pre-dated March 5, 2002, but forwarded for assessment after this date. One community group also had pre-arranged the inclusion in this assessment of a submission that was compiled following a public meeting held on March 19, 2002. The report:

- Summarises community involvement activities in Section 2
- Sets out the response by stakeholders and provides graphic representations of responses in Section 3;
- Sets out over-arching issues raised in some submissions in Section 4; and
- Tables issues raised in "interim" submissions received between May 10, 2002, and December 6, 2002.

The response of the project team to issues raised in representations by the community related to technical investigations in the development of the route options and the content of the route options publications is contained in Appendix A.

The response of the project team to design issues raised in representations by the community is contained in Appendix B.

It should be noted that the feedback reported in this summary is not necessarily representative of the views of the overall Coffs Harbour and Northern Beaches communities. The outcomes are the result of responses to questions on the "Have Your Say" survey form as well as written submissions and, statistically, cannot be considered as a valid sample survey of the area. There are several reasons for this:

- The survey was designed with the intent of canvassing issues on the potential impacts of the various route options and suggestions for improvements rather than to provide quantitative data on preferences for a particular option or options
- This was reflected by the methodology used for data collection, questionnaire design, survey distribution, coverage of the sampling frame and survey management
- The response rates were strongly influenced by interest groups with preferences for one or more particular route option.
- The activities of these interest groups and duplication of survey forms are likely to have influenced the submissions received. The extent of this influence is impossible to determine.

2. Stakeholder Involvement

2.1 Scope of Activities

Since the project launch in September 2001, there has been extensive interaction and involvement of a wide range of community groups and individuals. This has included:

- Regular public notices and media coverage (both print and electronic) informing the community of various stages and reporting on the progress of the project
- Formation of and regular meetings with two Community Focus Groups (CFGs)
- Advertised open information sessions
- Distribution of three information brochures and newsletters at key milestones in the strategy inviting submissions
- Formation of a contact list on which members of the public were able to register to receive information sheets
- Provision of a Freecall telephone inquiry line for direct enquiries
- Establishment and frequent updating of a project web site
- Static displays and staffed displays attended by the study team
- Interviews with individuals, business, property owners and community groups
- Calls for written submissions and completion of survey forms by individuals and interest groups, and;
- Meetings and presentations with authorities and interest groups (eg Council, Woolgoolga and Coffs Harbour Chambers of Commerce, Sikh community, Ullitarra Conservation Society, Banana Growers Association, Bicycle Users Group, Aboriginal community)

During the route options exhibition, stakeholder involvement activities included:

- Personal notification letter to potentially-affected property owners including copy of community update newsletter
- Follow-up telephone calls to potentially-affected property owners offering interviews at staffed displays or on-site
- Distribution of a community update newsletter to interest groups and individuals inviting submissions and completion of the accompanying survey form
- Public notices and media coverage (both print and electronic) informing the community of the refined route options and calling for written submissions and completion of survey forms by individuals and community groups
- Staffed displays in December 2002 attended by the study team (Park Beach Plaza, Coffs Harbour, and Surfside Plaza, Woolgoolga)
- Static displays at key locations (Coffs Harbour City Council, Coffs Harbour and Woolgoolga Public Libraries, Sapphire Service Station and Yarrowarra Cultural Centre)
- Interviews with individuals, business, property owners and community groups
- Meetings and presentations with authorities and interest groups, and
- Distribution of technical working papers to members of the CFGs, individuals and authorities.

In response to some community requests, the Steering Committee extended the submission period for community comment by four weeks. During this time, further stakeholder involvement activities included:

- Further public notices and media coverage (both print and electronic)
- Further staffed displays in February 2003 attended by the study team (Woolgoolga Public Library)
- Continuation of static displays at key locations
- Further interviews with individuals, business, property owners and community groups, and
- Bus tour of the bypass and upgrade options for both Coffs Harbour and Sapphire to Woolgoolga sections involving representatives of Coffs Harbour City Council, community organisations, State Government agencies and candidates for the State Government elections in March 2003.

2.2 Community Focus Groups

Two CFGs were formed in November 2001 to assist communication between the project team, stakeholders and the local community. The members of each group represent a wide range of interests within the community.

Following the completion of a preliminary constraints analysis which found that the existing highway corridor was the only potentially feasible and suitable corridor option for an upgrade in the section of the study area from Sapphire to Moonee, the CFG for this section discussed and accepted this finding. It then focused on issues associated with this upgrade including capacity, configuration, intersection locations and layouts and access arrangements.

In the area north of Moonee, the preliminary constraints assessment showed there were many substantial constraints that could influence corridor planning. However, with the wider coastal plain and less intensive existing development, a larger range of corridor options was identified. The CFG for this section focused on issues associated with the wider range of potential impacts relating to the bypass options as well as the option for a major upgrade for the whole length of the existing highway.

Nineteen regular meetings have been held with the two CFGs since they were formed including six which have been held with each of the CFGs during the route options development stage and one additional special meeting held at Woolgoolga.

One further meeting with each of the CFGs was held in March 2003 to provide feedback on submissions received on the route options exhibition and obtain representation from the groups to take part in the Value Management Workshop to consider the route options.

2.3 Interest Group Activities

During the development of the Coffs Harbour Highway Planning Strategy, there has been strong lobbying by certain groups who have strong preferences for or against particular options in both the northern and southern sections of the strategy.

In the southern section, a group called the Western Alliance formed initially from residents' groups in West Boambee, the Orara Valley, the Bucca Valley and inner West Coffs Harbour (PANIC). The Alliance then splintered with the Orara and Bucca Valley groups resigning their membership. In the northern section another group, the Woolgoolga Area Residents (WAR) group, was formed. In the second half of 2002, the WAR group joined forces with the remaining membership of the southern group to form the Combined Lobby Group (CLG). The CLG began a highly visible campaign which included stickers, T-shirts, petitions, media coverage and the establishment of a web site.

During the route options exhibition period, a number of community involvement activities were organised by the CLG.

On January 14, 2003, a public meeting convened by the WAR group was held at Woolgoolga High School and attended by more than 500 residents. This followed two earlier community meetings during the development of the strategy – one at Woolgoolga High School in April 2002 attended by more than 600 residents and one at the Coffs Harbour Catholic Club in October 2002 attended by more than 450.

Media coverage heightened during the route options exhibition with coverage of the CLG's opposition to particular options and support for a proposal called the Coastal Ridge Way which combined Option A in the northern section with an alternative proposal for the southern section put forward by the chairman of one of the lobby groups. The alternative proposal is a revised version of an option previously called the People's Choice.

Unofficial staffed displays also were held by the CLG during the four-week extension to the submission deadline at Surfside Plaza, Woolgoolga, and at the Park Beach Plaza, Coffs Harbour. At its request, 780 copies of the community update newsletter, which included survey forms, were provided to the CLG staffed displays along with more than 4050 separate photocopied survey forms.

A workshop also was arranged by the RTA during this time in response to a request from the WAR public meeting held in January 2003. The workshop involved Coffs Harbour City Council representatives, engineers from the RTA and its consultants, and representatives of the WAR and PANIC groups. The workshop examined technical details involving the Coastal Ridge Way bypass option including design and geotechnical issues and comparisons of the option with other RTA projects. A further technical workshop on the bypass option also was held in March 2003.

3. Stakeholder Responses

The stakeholder response to the route options exhibition comprised 390 written submissions, including three petitions, and 1050 survey forms. A small number of survey forms received were unable to be validated because of lack of name, contact details or illegibility.

The three petitions were:

- Petition for Western Bypass of Sandy Beach, Woolgoolga, Northern Beaches – Preferences A & B of Info Sheet No.2/Petition Against Dual/6 Lane Upgrade from Sapphire to Arrawarra (14 valid names)
- Yarrowarra Aboriginal Corporation: petition strongly objecting to the proposed desecration of Miimiga Gaungan Aboriginal Women's Place which would be caused by Option A (13 valid names – and noted that petition was still circulating)
- Residents of Crystal Waters, Sapphire: petition strongly objecting to the proposed upgrade of the Pacific Highway and registered qualified support for Option A BUT ONLY if it included a southern link to a proper western bypass of Coffs Harbour, such as the Coastal Ridge Way (93 valid names)

Survey forms were provided in a mailout of Community Update No.3 to potentially affected property owners and to stakeholders on the strategy database. They also were provided to interest groups in bulk, on request through the project's Freecall telephone inquiry number and at the staffed and static displays. Approximately 9560 copies of Community Update No.3 and survey forms were distributed by the project team.

The survey forms comprised three questions. Question 1) asked, for each of the options A, B1, B2, C and D, what were the specific impacts and benefits that were of interest to the respondent. Question 2) asked, of the options and feasible alternatives, were there any changes or improvements that they would like to see made to the Sapphire to Moonee (Highway Upgrade) and the five options for Moonee to Arrawarra, Option A, B1, B2, C and D. Question 3) asked if there were any other comments the respondent would like to make. A copy of the survey form is included in Figure 3A & 3B.

For Question 1), most respondents cited issues for each of the options raised in previous community feedback. Most of these were listed on the survey form. They were:

- Effects on residential property
- Effects on agricultural land use
- Effects on business and tourism
- Effects on forestry activities
- Noise and vibration
- Visual and urban design
- Indigenous heritage
- Non-indigenous heritage
- Geology and soils
- Flora and fauna
- Air quality
- Community impacts
- Access effects
- Road safety, and
- Travel time and efficiency.

The main additional issues raised were:

- Effects on the quality of waterways
- The cost of construction
- Opportunities to provide a firebreak, and
- The disruption that the construction of an option would pose.

However, despite the issues being common to most respondents, their impacts or effects were seen to be widely disparate for the same Option. For example, flora and fauna were commonly listed as an impact for the outer Option A. Many respondents wrote that the impacts would be “severe”, “maximum”, “most” and “negative” but many others wrote that the impacts on flora and fauna for Option A would be “minimal”, “least” and “positive compared to other options” because of the amount of surrounding State Forest that fauna could escape to which would also contain sufficient flora for the impacts of Option A to be “minor”.

Similarly, effects on business and tourism were commonly cited for all options. However, for Option D, an upgrade of the existing highway, for example, respondents wrote that impacts on business and tourism would be “positive”, “beneficial”, “a plus” and “least” by allowing through traffic to continue to have easy access to Woolgoolga’s attractions while other respondents wrote that an upgrade of the existing highway would deter tourists and therefore have a “negative” and “detrimental” effect – “who wants to holiday near a national highway?”

Such views of “negative” and “positive” effects applied to all other major issues raised. Hence, the graphic representation of responses to Question 1) shown in Figures 3C-3G displays the number of responses as “negative” and “positive”. The net effect of adding the negative and positive responses is shown in Figures 3H-3J.

Three other issues – completion of CHCC’s ring roads system, maintenance of the bypassed section of the existing highway, and intergenerational equity – which previously have been commonly raised in submissions and through other community involvement activities, are also included in the graphic representations of stakeholder responses.

For Question 2), most respondents did not answer the question as posed. Rather, this was seen as an opportunity to record a vote or a “yes” or “no” for each of the upgrade options north of Moonee, or to record a “first preference” and “second preference” for these options.

It was only for the upgrade of the highway between Sapphire and Moonee that respondents did list improvements, along with a preference for the proposed interchange to be located at either Gaudrons Road/Split Solitary Road Option or the Headland Road Option. Most of the improvements suggested concerned additional service roads, a reduction in speed limit, the provision of cycleway and pedestrian access, noise mitigation and visual mitigation measures and the provision of alternative access to the highway mostly through seagull intersections rather than left in-left out only accesses.

The responses to the upgrade options north of Moonee are set out in Figure 3K. The responses to the upgrade of the existing highway from Sapphire to Moonee are set out in Figures 3L.

For Question 3) of the survey form, most respondents used this section to reiterate their views expressed in answers to Questions 1) and 2) and already incorporated in the graphic representations for these sections.

Most of the main issues raised in the submissions received were the same as those raised in the survey forms. Hence, the graphic representations of the survey form feedback also includes the submissions feedback, including representations to the Minister for Roads, other Government Members and representatives of the three Steering Committee partners.

However, some submissions raised over-arching issues related to both sections of the Coffs Harbour Highway Planning Strategy or the Pacific Highway in general, or issues not reflected in the graphic representations. These are described in Section 4.

Of the 4050 photocopied survey forms provided to the CLG for distribution at its staffed displays, more than 600 were returned for assessment in bulk drops by their organisers. More than 300 of these respondents did not cite impacts, benefits or improvements but wrote: “I prefer Option A in Woolgoolga

Area, modified on the southern end to link up with the Coastal Ridge Way". Many of these respondents who did cite impacts, benefits or improvements clearly showed they were confused about the southern and northern sections of the strategy. For example, they cited issues such as congestion on the existing highway in Coffs Harbour but that only the outer Option A (for Sapphire to Woolgoolga) would prevent the need to travel through so many sets of traffic lights. Similarly, that they lived beside/near the existing highway in Coffs Harbour and that only the outer Option A would solve the increasing noise and road safety problems caused by heavy vehicles. Or, that the outer Option A needed to be built as soon as possible and not in 20 years' time (a reference to the planning horizon for the Coffs Harbour section).

Figure 3B

2)	Of the options, and feasible alternatives, described in the community update, are there any changes or improvements you would like to see made?
	Sapphire to Moonee (Highway Upgrade)
	Moonee to Arrawarra (5 options)
	Option A
	Option B1
	Option B2
Option C	
Option D	
3)	Are there any other comments you would like to make?

If you are not already on the mailing list to receive further information and would like to be included, please fill out your details below.

(Mr/Mrs/Ms): _____ Surname: _____

First Name: _____ E-mail: _____

Address: _____

Phone: _____ (work) _____ (home)

PLEASE MAKE SURE YOU READ THE FOLLOWING CONFIDENTIALITY INFORMATION BEFORE COMPLETING THE COMMENT FORM

All information included in written representations is collected for the sole purpose of assisting in the assessment of this proposal. The information may be used by relevant staff and contractors, including the RTA's Project Manager, RTA Planning and Environmental staff and/or the RTA's contractor, Connell Wagner. Where the supplier (you) indicates at the time of supply of information that it should be kept confidential, the RTA will attempt to keep it confidential but there may be legislative or legal justification for the release of the information, for example under the Freedom of Information Act 1989 or under subpoena or statutory instrument. The supply of any information is voluntary. Each respondent has free access at all times to the information provided by that respondent but not to any information provided by other respondents. Any respondent may make a correction to the information that they have provided by providing the correction in writing to the same address where original representations were sent. The information is being collected and will be held by the RTA and/or its agents on behalf of the Steering Committee.



Figure 3C

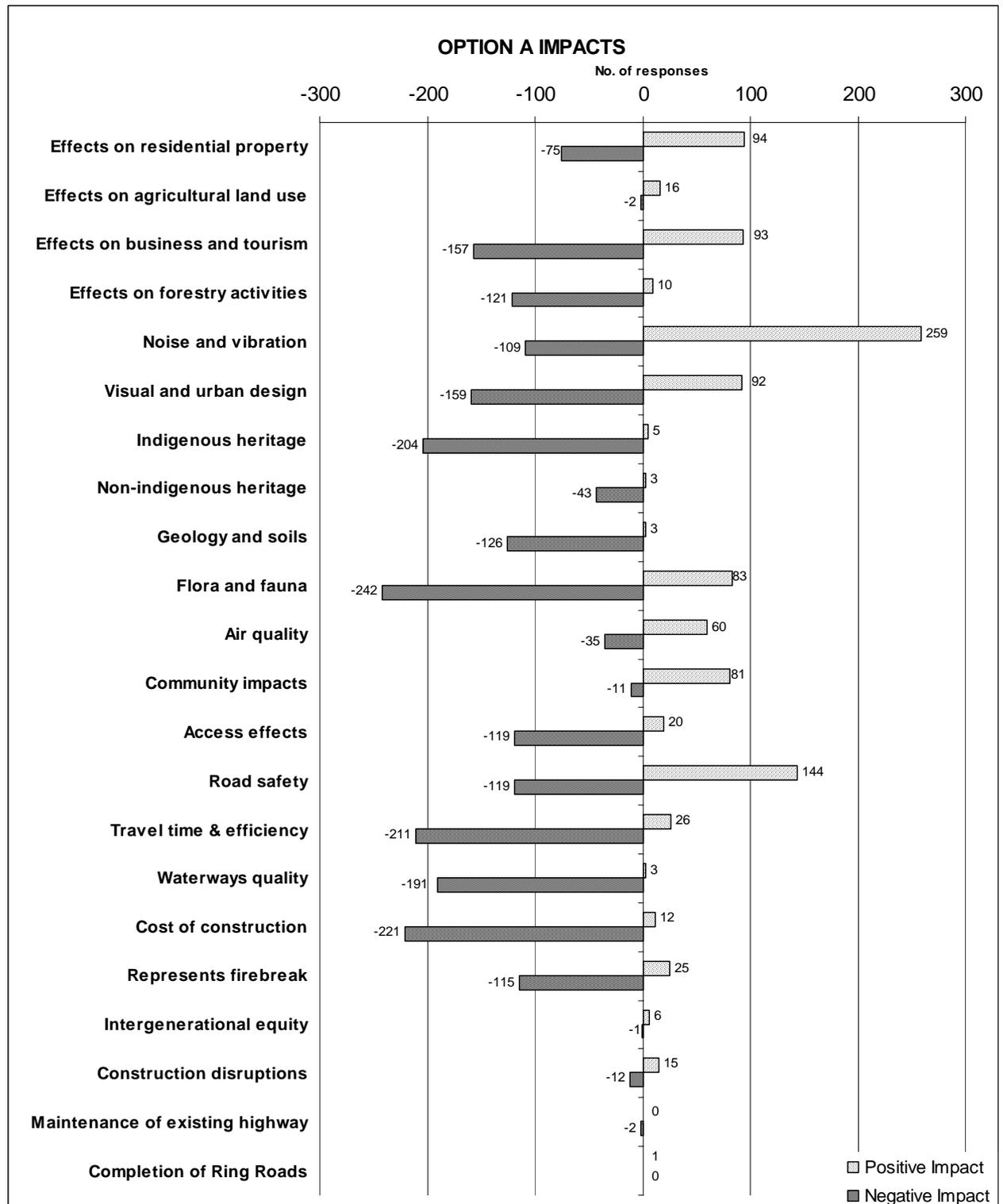


Figure 3D

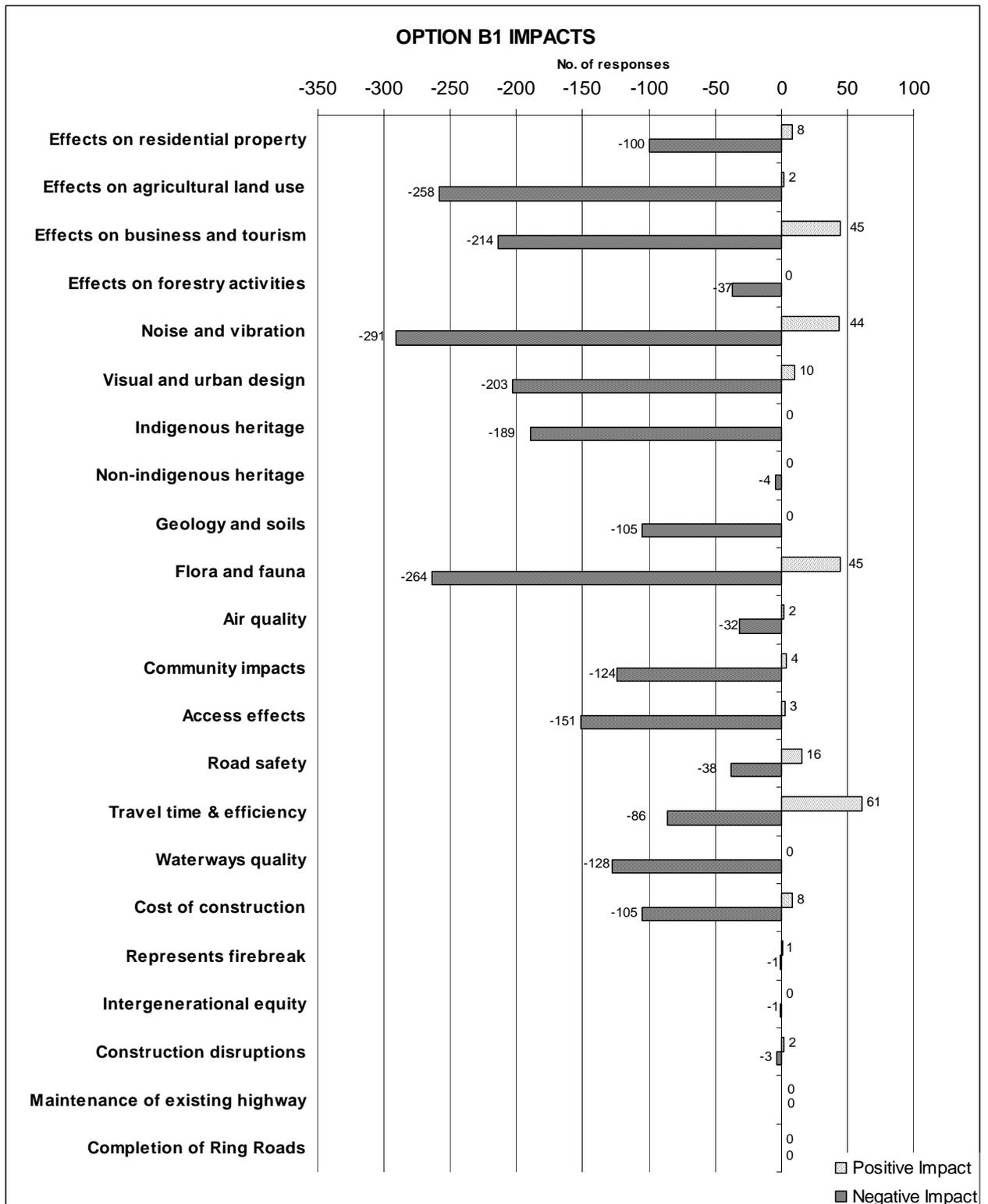


Figure 3E

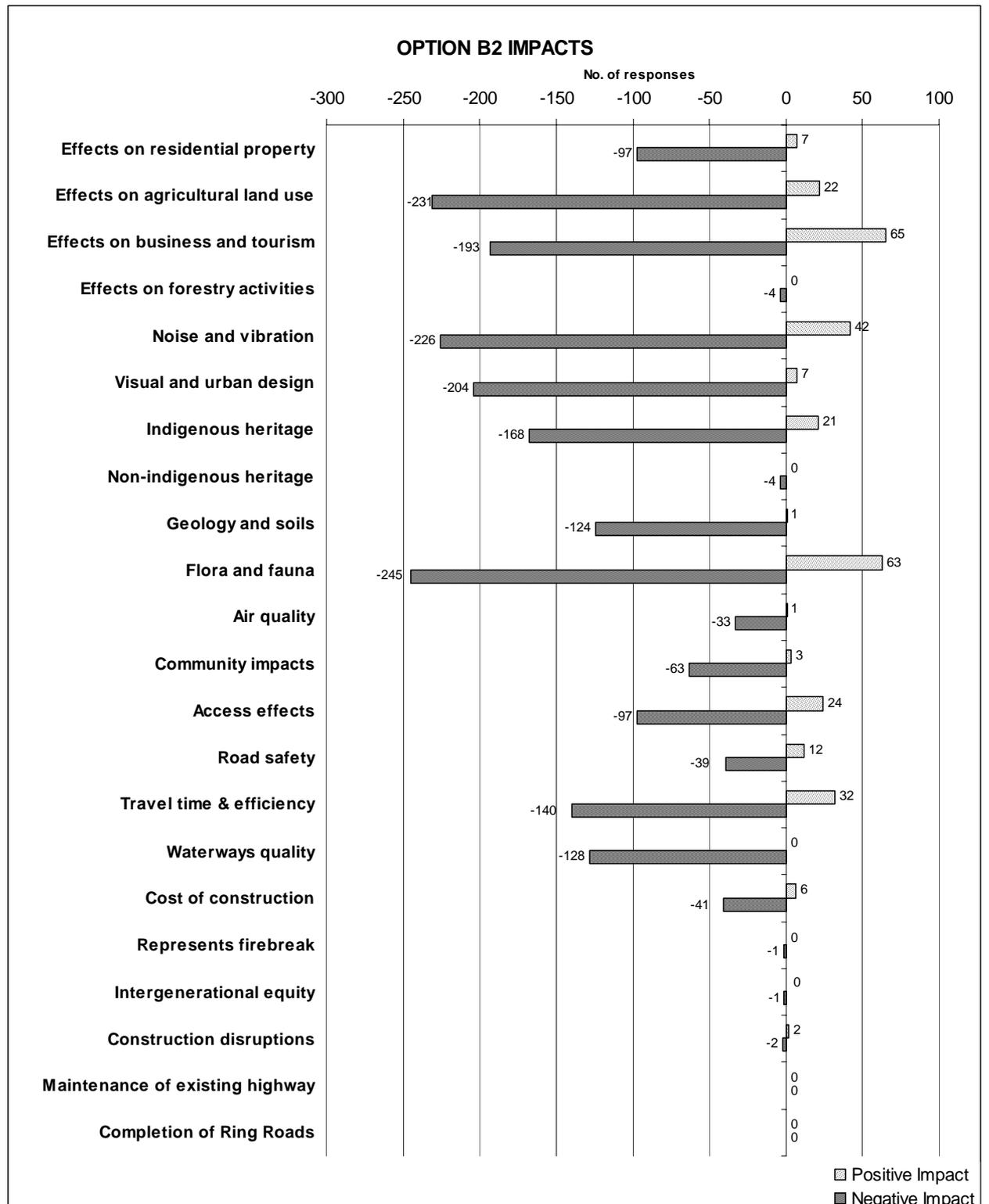


Figure 3F

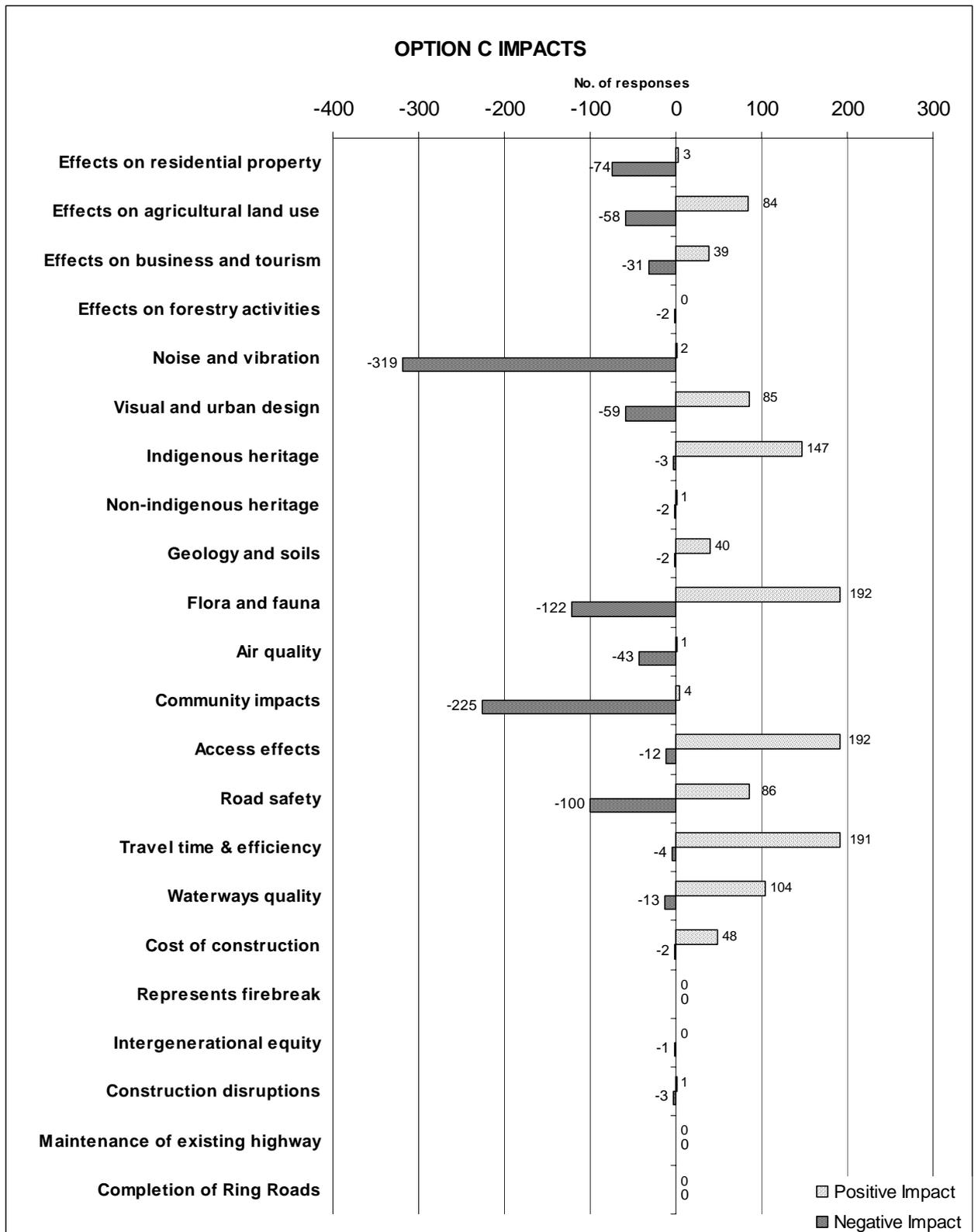


Figure 3G

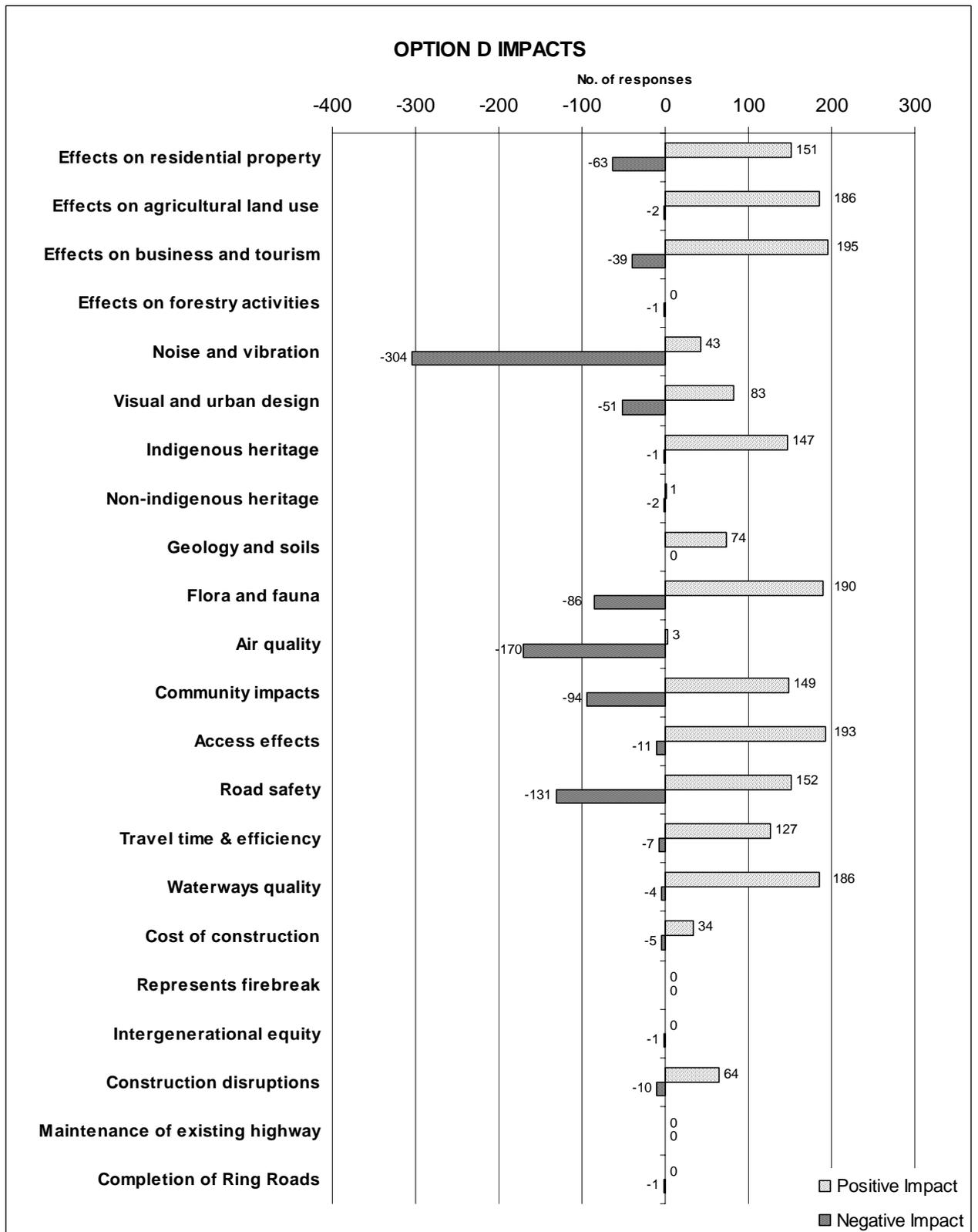


Figure 3H

KEY: GRAPH 1.1

- RE: Effects on residential property
- ALU: Effects on agricultural land use
- BT: Effects on business and tourism
- FE: Effects on forestry activities
- NV: Noise and vibration
- VUD: Visual and urban design
- IH: Indigenous heritage

GRAPH 1.2

- NIH: Non-indigenous heritage
- GS: Geology and soils
- FF: Flora and fauna
- AQ: Air quality
- CI: Community impacts
- AE: Access effects
- RS: Road safety

GRAPH 1.3

- TTE: Travel time & efficiency
- WQ: Waterways quality
- CC: Cost of construction
- FB: Represents firebreak
- IE: Intergenerational equity
- CD: Construction disruptions
- EHM: Maintenance of Existing Highway
- RRC: Completion of Ring Roads

GRAPH 1.1 showing net of positive impacts and negative impacts for all options

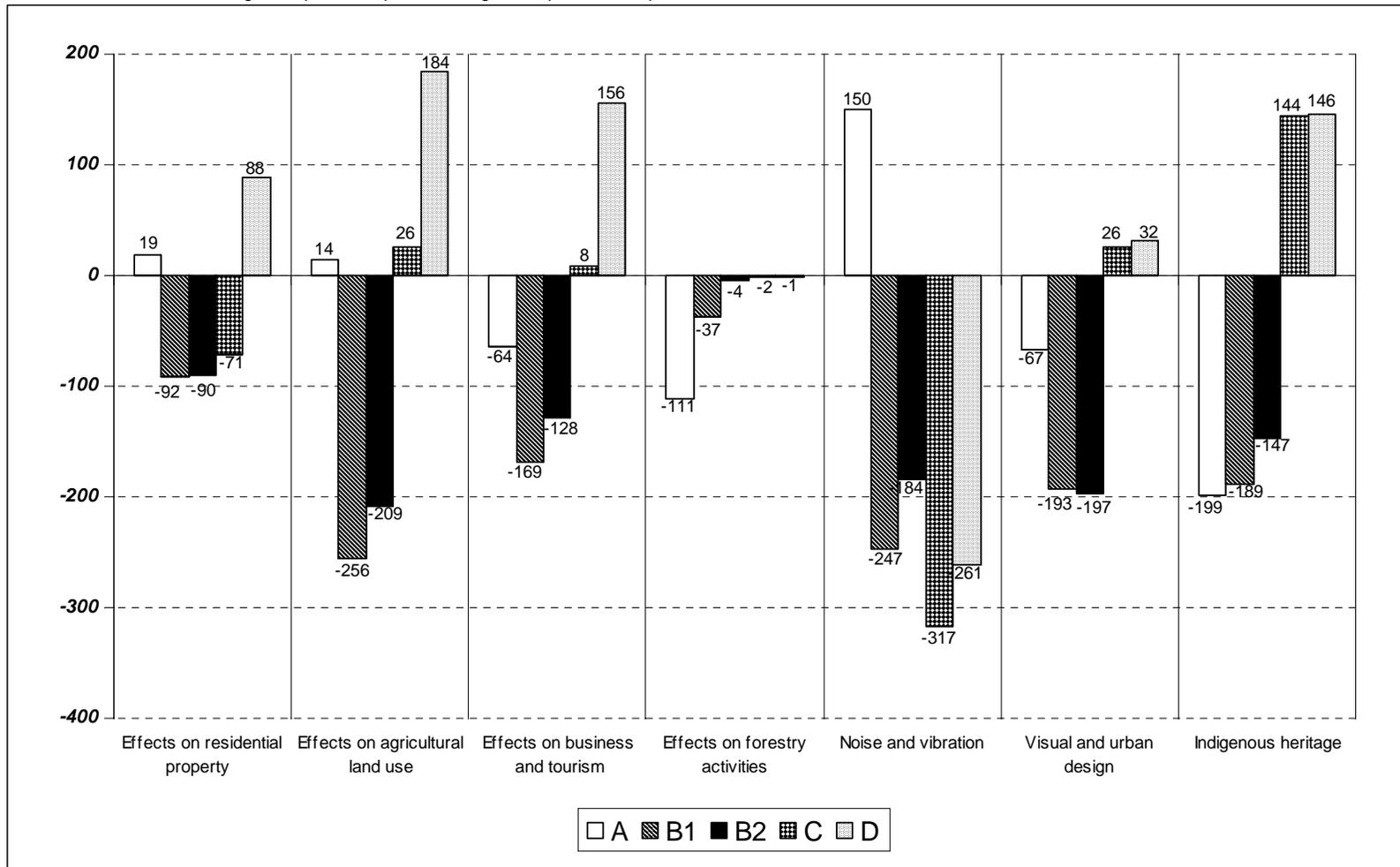


Figure 3I

KEY: GRAPH 1.1

- RE: Effects on residential property
- ALU: Effects on agricultural land use
- BT: Effects on business and tourism
- FE: Effects on forestry activities
- NV: Noise and vibration
- VUD: Visual and urban design
- IH: Indigenous heritage

GRAPH 1.2

- NIH: Non-indigenous heritage
- GS: Geology and soils
- FF: Flora and fauna
- AQ: Air quality
- CI: Community impacts
- AE: Access effects
- RS: Road safety

GRAPH 1.3

- TTE: Travel time & efficiency
- WQ: Waterways quality
- CC: Cost of construction
- FB: Represents firebreak
- IE: Intergenerational equity
- CD: Construction disruptions
- EHM: Maintenance of Existing Highway
- RRC: Completion of Ring Roads

GRAPH 1.2 showing net of positive impacts and negative impacts for all options

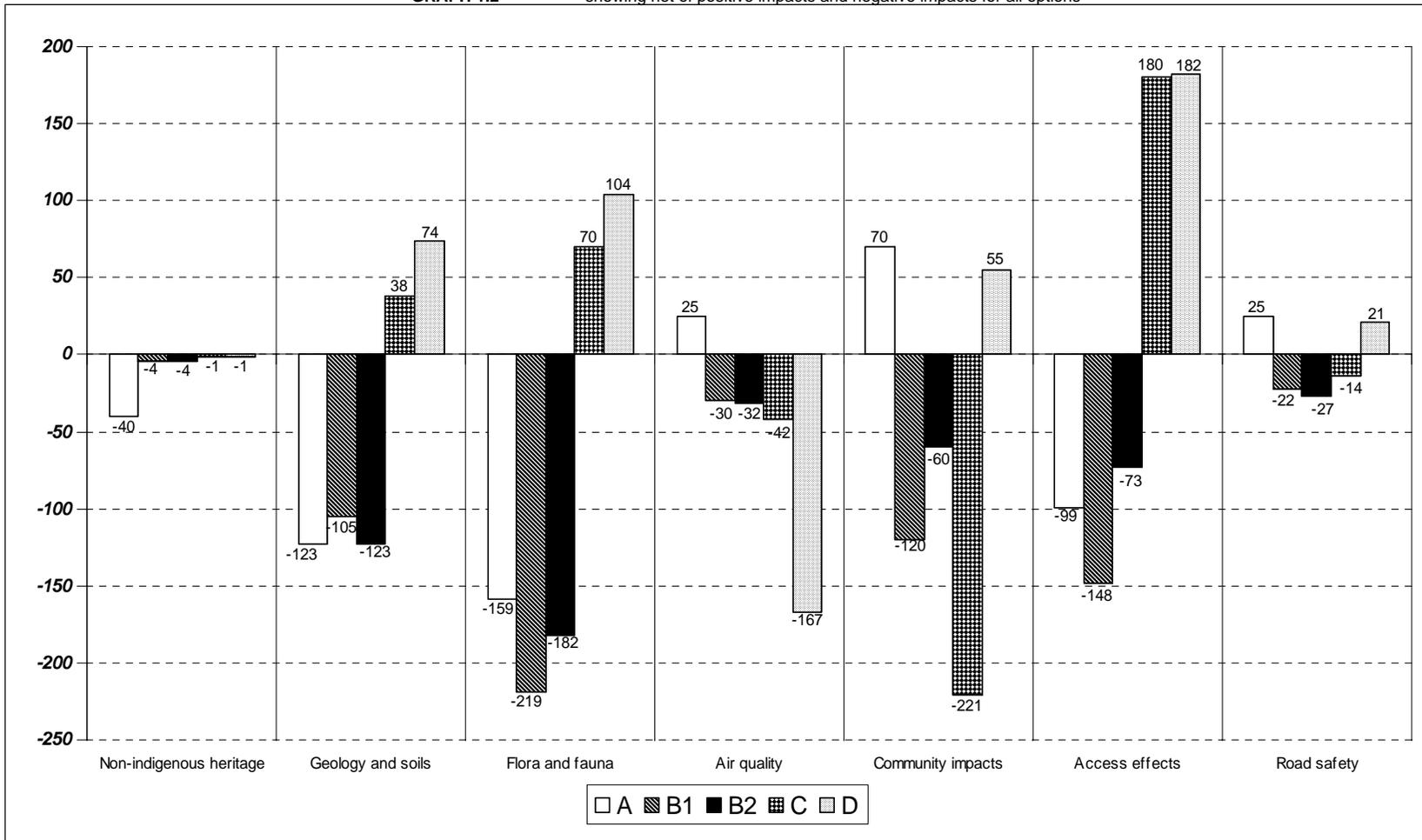


Figure 3J

KEY: GRAPH 1.1

- RE: Effects on residential property
- ALU: Effects on agricultural land use
- BT: Effects on business and tourism
- FE: Effects on forestry activities
- NV: Noise and vibration
- VUD: Visual and urban design
- IH: Indigenous heritage

GRAPH 1.2

- NIH: Non-indigenous heritage
- GS: Geology and soils
- FF: Flora and fauna
- AQ: Air quality
- CI: Community impacts
- AE: Access effects
- RS: Road safety

GRAPH 1.3

- TTE: Travel time & efficiency
- WQ: Waterways quality
- CC: Cost of construction
- FB: Represents firebreak
- IE: Intergenerational equity
- CD: Construction disruptions
- EHM: Maintenance of Existing Highway
- RRC: Completion of Ring Roads

GRAPH 1.3 showing net of positive impacts and negative impacts for all options

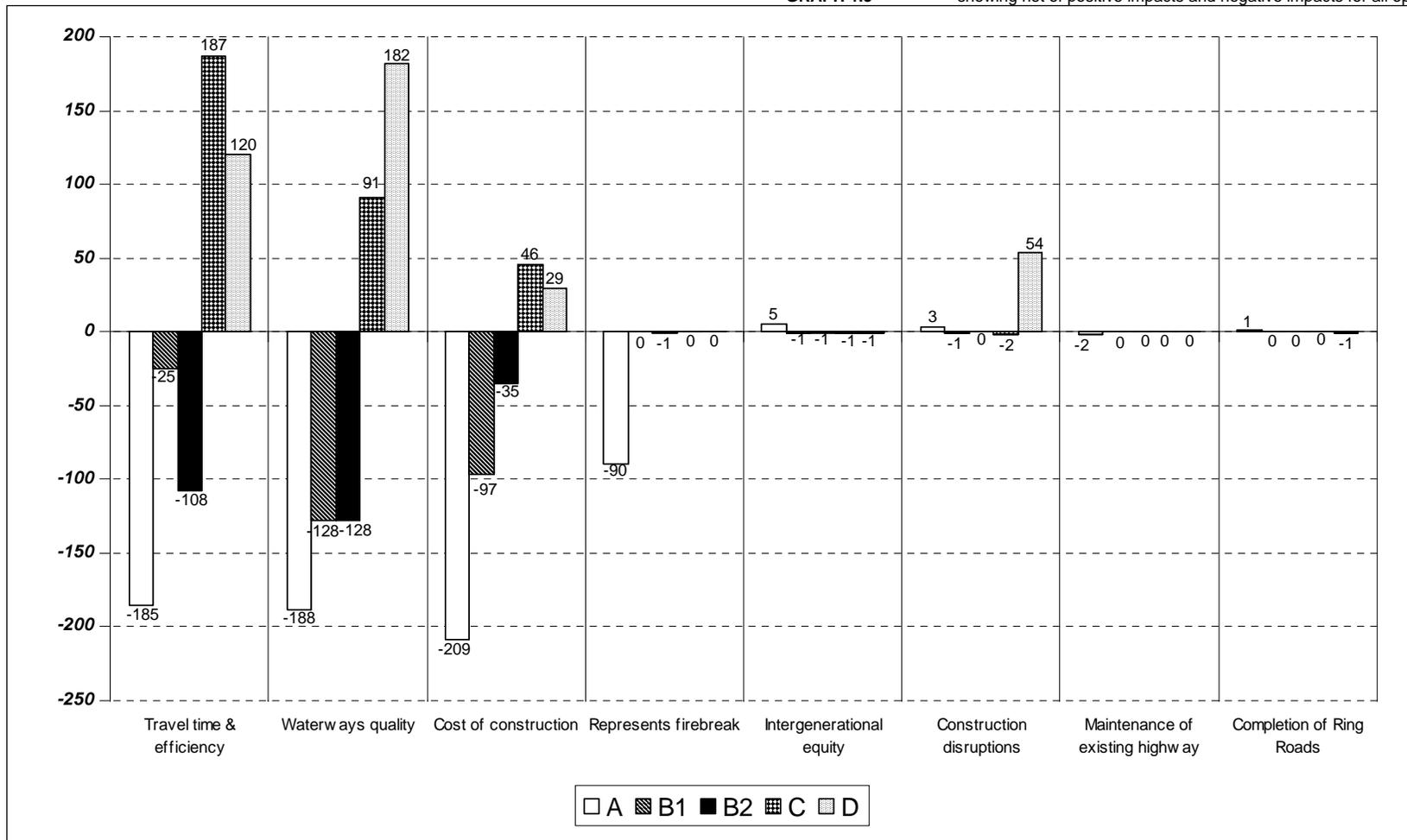


Figure 3K

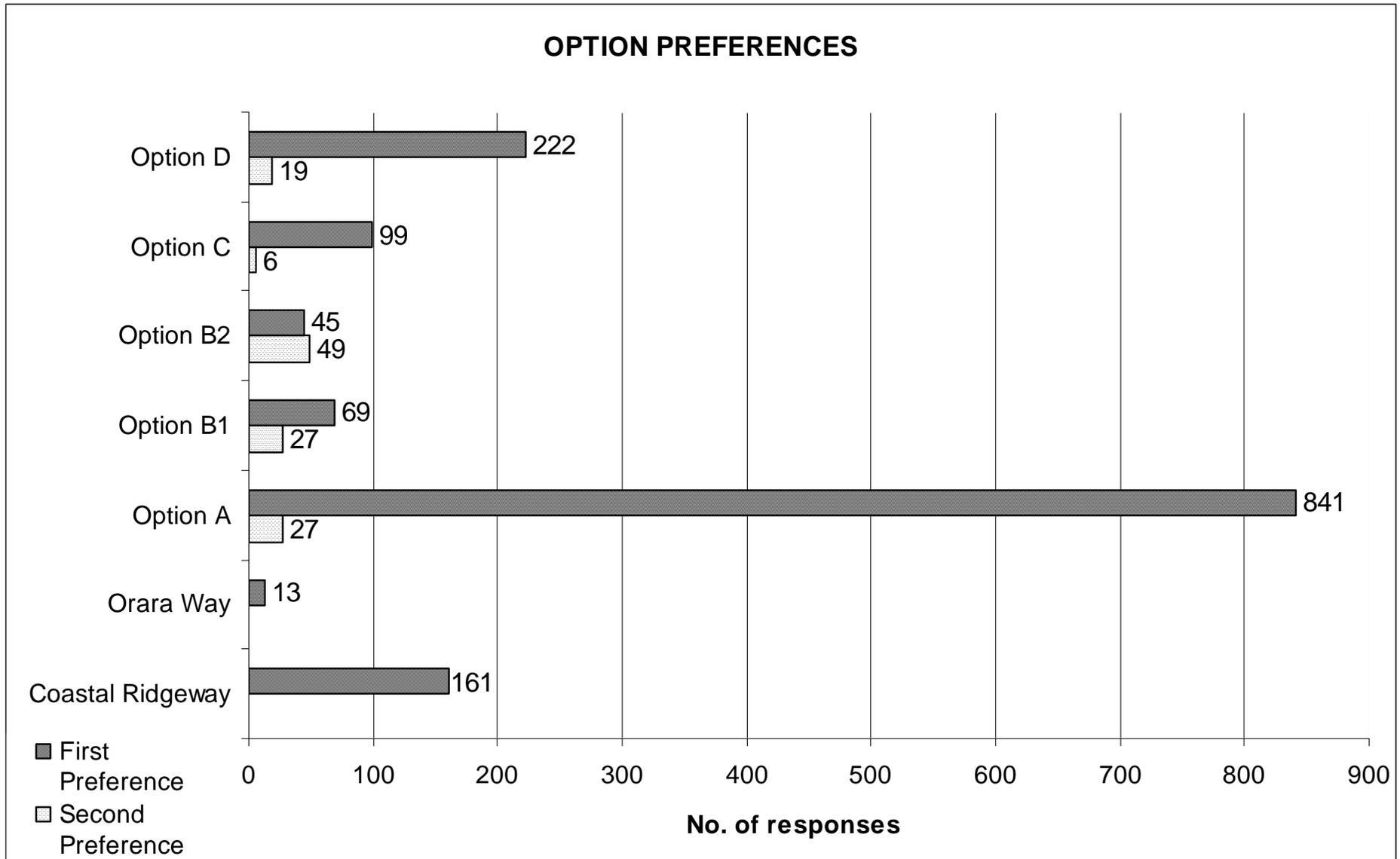
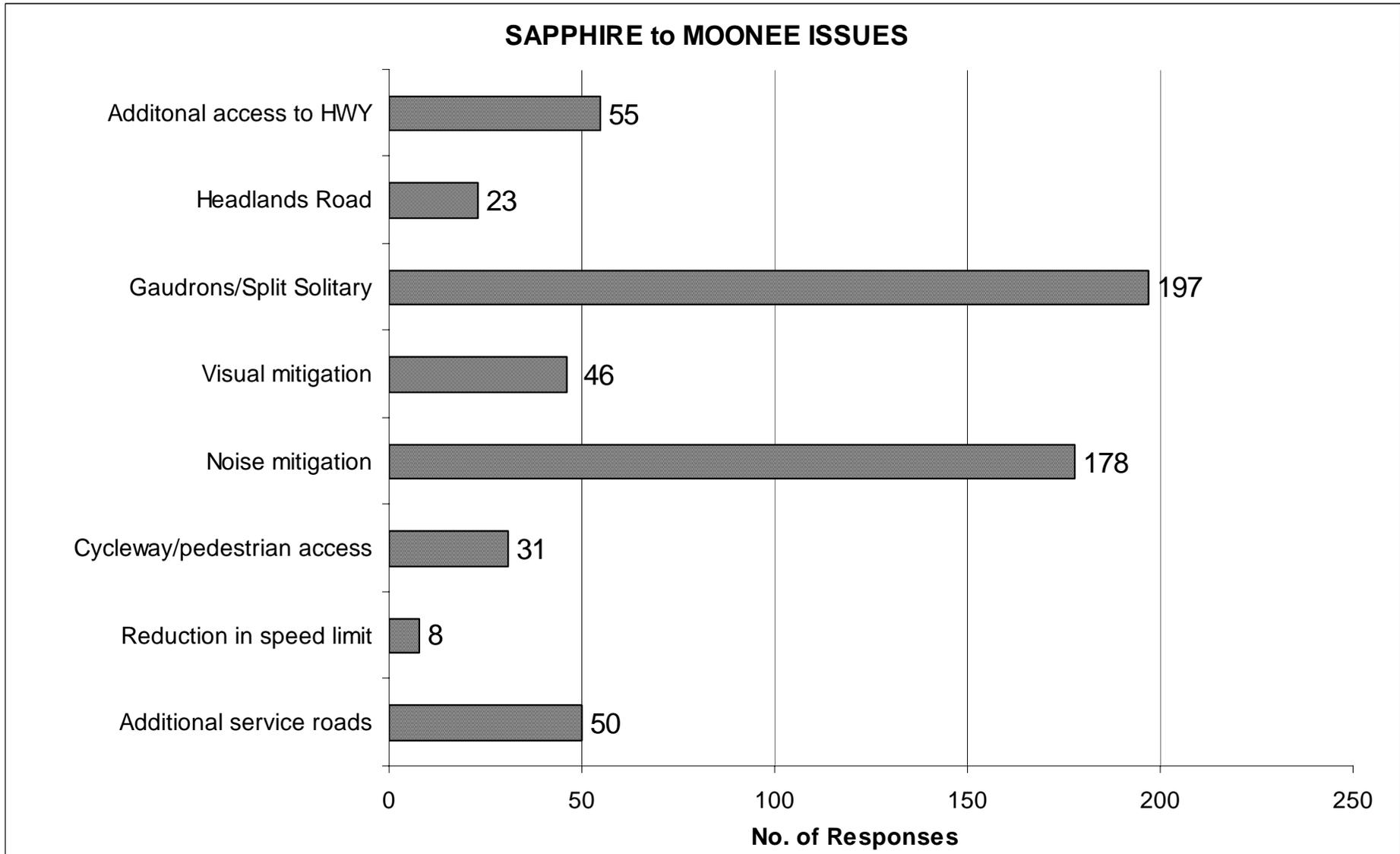


Figure 3L



4. Submissions – other main issues

While most of the main issues raised in the submissions received were the same as those raised in the survey forms, some submissions raised over-arching issues related to the Pacific Highway in general, both sections of the Coffs Harbour Highway Planning Strategy or issues not reflected in the graphic representations presented in Section 3.

The issues and the impacts cited are described below.

4.1 Increase in heavy vehicle movements

Numerous submissions raised issues about an increase in heavy vehicle movements, particularly B-doubles, on the Pacific Highway since the opening of the Yelgun-Chinderah bypass. Many cited personal experiences of being tailgated, forced off the road, forced to take evasive action to avoid an accident or being intimidated by heavy vehicle drivers. Others cited observations of heavy vehicles running red lights in urban areas and a disregard for speed limits.

The main issues raised were:

- The need for investigations into the current increase and future increases expected
- Increased road noise
- Decreased air quality and associated health risks
- Decreased road safety
- Increased damage to road surfaces
- Increased risk of HAZMAT vehicle accidents in urban areas
- Heavy vehicle “convoys”

4.2 Rail freight

A number of submissions called for increased use of railways to freight goods and reduce the dependence on road freight and therefore the number of heavy vehicle movements on the Pacific Highway and through urban areas. Some criticised the State Government for what they saw as allowing the rail system to fall into disrepair and for not providing incentives for industry to freight by rail.

The main issues raised were:

- Downgrading of railways
- Provision of incentives for more freight by rail to reduce road freight and associated risks
- Exploring the potential for localised tourist transport by rail
- Sensitively planning rail links around existing rail corridors and tourist locations
- Promotion of rail as a safer commuter option than motor vehicles
- Promotion of rail transport as being more environmentally friendly

4.3 Design issues – heavy vehicles

A submission was received by a representative of the local transport industry which included feedback from 11 transport and bulk freight operators servicing Coffs Harbour and beyond. The submission did not include transport companies involved in deliveries of such goods as mail, packaging and retail furniture or home removals. The 11 companies are involved in the transportation of general goods, refrigeration, logging and dangerous goods including gas and fuel. The submission indicated that between them, 95 semi trailers, at least 29 B-doubles and a small fleet of rigid vehicles service Coffs Harbour each week. An additional 76 semi trailers and 12 B-doubles pass through or call in to a depot.

The submission also pointed out that the amount of heavy vehicles needed to service Coffs Harbour could more than double during school holidays and long weekends and with the seasonal cartage of produce produced in the Coffs Harbour district.

Representatives of the companies raised a number of planning and design issues concerning the Coffs Harbour Highway Planning Strategy. The issues raised were:

- Fewer traffic lights
- Limited access roads and overpasses
- Minimal inclines and descents
- Transit lane for heavy vehicles through Coffs Harbour
- Dual highway conditions
- B-double access on service roads
- Long merging lanes to allow heavy vehicles to build up speed
- Wider aprons on roads to allow room for cyclists
- Use of appropriate road surfaces to reduce noise levels in dry and wet conditions
- Provision of a bypass viable for dangerous goods vehicles that will allow dangerous goods vehicles to bypass the Coffs Harbour town centre
- Provision of parking bays and facilities that will cater for the increasing number of B-doubles.

The submission noted that the latter was an issue backed by the entire transport industry.

Further factors to consider were also listed. These were:

- Grade of incline where the road will be, such as Option A for the Sapphire to Woolgoolga section
- Long-term (20-25 years) traffic flows
- Interchanges and service roads
- Types of vehicles used in 20 years
- Cost of vehicle and running costs on different options
- Travel times on new routes both to service Coffs Harbour and between capital cities
- Weight limits which could apply to road infrastructure in 20 years' time
- Predicted growth of Coffs Harbour (20 years)
- Overall costs of project
- Funding for the completion of Hogbin Drive to alleviate immediate traffic congestion faced in Coffs Harbour now, especially during holiday periods.

The submission also acknowledged:

- That while tunnels around Sydney and the rest of the world had proven to be beneficial, if dangerous goods vehicles were rejected from using them and directed back through Coffs Harbour, it would defeat the purpose of a bypass
- The need to consider visual, noise, agricultural, community and residential property impacts
- The divergence of views and the importance of consultation in developing and implementing major road infrastructure projects.

4.4 Integrated approach to Coffs Harbour Highway Planning Strategy

A number of submission respondents wrote that they did not believe that an integrated approach was being taken for planning future road infrastructure for the LGA as the planning process had been broken into three separate sections – Coffs Harbour section, Sapphire to Moonee section, and Moonee to Woolgoolga section. By having three separate sections, a whole of shire approach could not be undertaken to the highway upgrade process.

The main issues raised were:

- A whole of shire solution was needed to the highway upgrade
- The LGA was a unique area and therefore any highway upgrade required a unique solution
- Separate investigation sections were causing confusion in the community

4.5 Sapphire to Woolgoolga options only short-term

Many submission respondents commonly questioned why only “short-term” upgrade options were being considered for the Sapphire to Woolgoolga section when planning should be for 20-50 years’ time. Options were seen as “quick-fix”, inappropriate planning and “bandaid” solutions” to long-term traffic generation. It appears that many of these submissions were influenced on the terminology used in information releases concerning the Coffs Harbour Highway Planning Strategy in that the words “short-term” were used relative to the “longer-term” strategic planning for the Coffs Harbour section and that the Sapphire to Woolgoolga Upgrade would proceed to design and construction in the “short-term”.

The main issues raised were

- Bypass options would need to be bypassed again in about 5-10 years
- Planning needed to take account of traffic generation in at least 20 years

4.6 Coffs Harbour bypass a priority

A number of respondents believed that priority should be given to planning and constructing a bypass of Coffs Harbour instead of an upgrade of the highway between Sapphire and Woolgoolga. The respondents wrote that the existing highway between Sapphire and Woolgoolga required no or only minor upgrade to enable it to cope with current and predicted traffic generations for years to come.

The main issues were:

- Delays caused by the number of traffic lights through Coffs Harbour
- Coffs Harbour is the bottleneck of the Pacific Highway between Sydney and Brisbane
- Smaller towns had been bypassed – why did Coffs Harbour, with a population of over 62,000, not require a bypass for another 15-20 years?
- Present traffic volumes and flow in Coffs Harbour were intolerable

4.7 Emergency services and safety provisions

Some submissions raised the need to consider the provision of turning bays, rest stops and emergency telephones in the Sapphire to Woolgoolga Upgrade as well appropriate and timely access for emergency vehicles. Driver fatigue was cited as a major consideration when planning the length of bypasses, particularly in regard to Option A. Respondents wrote that with more and more towns being bypassed, drivers were unwilling to detour into a town for a rest stop and were instead being encouraged to drive longer and further.

The main issues were:

- The ability of emergency services such as Care Flight Helicopters to service accidents and emergencies on Option A considering the height and depths of its cuts and fills
- The extra time involved in ambulance and fire vehicles reaching accidents or fires on or along Option A when access would be via Arrawarra or Moonee
- The need to provide adequate rest stops to prevent driver fatigue

4.8 Project information

A number of submissions raised issues concerning the information provided in Community Update No.3 and the technical working papers regarding the route options.

Most of the issues raised concerning Community Update No.3 related to the amount of detail provided in the document which was broadly distributed throughout the community. For example, a criticism was that noise was reported as being an issue of most concern to the community but the impacts were not discussed in the Update but rather in the Noise and Vibration Assessment which was one of 10 Working Papers available on the project website or by phoning the Freecall number. Other criticisms of the document related to "out-of-date" or what was perceived as incorrect zoning information on maps.

Representations by the community related to technical investigations in the development of the route options and the content of the route options publications were addressed by the project team and discussed with some of the respondents. Some of these representations will be the subject of further investigations.

The response of the project team to issues raised in representations by the community related to technical investigations in the development of the route options and the content of the route options publications is contained in Appendix A.

The response of the project team to design issues raised in representations by the community is contained in Appendix B.

A number of respondents also took issue with media campaigns and "misinformation" provided at unofficial displays by certain groups who lobbied for or against particular options. These submissions wanted their objections recorded regarding such activities which they said obtained "uninformed support" for particular options. The respondents sought assurances that all options would be considered on their merits and not on the numerical support for or against them.

5. Interim Submissions

A total of 109 submissions and seven survey forms were received between close of receipt of submissions for Stage 2 – Corridor Options on May 10, 2002, and the announcement of Stage 3 Route Options for the Sapphire to Woolgoolga section of the Coffs Harbour Highway Planning Strategy on December 6, 2002.

Most of the submissions received related to Information Sheet No.2 which was released in March 2002. The Information Sheet advised that three bypass corridor options had been identified for the Sapphire to Woolgoolga section as well as an upgrade of the existing highway corridor. It also advised that, of the four corridor options originally identified for the Coffs Harbour section, the options had been reduced to the inner corridor to be compared with an upgrade of the existing highway. A Far Western Bypass running through the Orara Valley to Halfway Creek or Grafton also had been investigated in response to public submissions and found to not be feasible.

A Community Update was released in September 2002. It advised that Coffs Harbour City Council had resolved to commission an independent peer review of the planning process for the Coffs Harbour section. As a result, further work on the southern section had been deferred until the results of the peer review were considered. It also advised that refined options for the Sapphire to Woolgoolga section were being developed and would be exhibited for public comment later that year.

Table 5.1 sets out the section of the Coffs Harbour Highway Planning Strategy referred to in the submissions, the number of submissions which raised the same issue, the issue and the benefits/impacts cited.

Most of the submissions received were regarding the Coffs Harbour section. Of the 109 submissions, 39 were pro-forma submissions developed by the Western Alliance asking respondents to tick whether they supported/did not support the People's Choice Bypass, the inner corridor or an upgrade of the existing highway. A number of submissions referred to the People's Choice Bypass or the revised version of it, the Coastal Ridge Way. For the purposes of assessment, these submissions have been considered to be referring to the same bypass option.

The design considerations raised in five interim submissions for the Sapphire to Woolgoolga section were either:

- Included in the development of the route options
- Included in the assessment of design issues raised in current submissions at the Value Engineering Workshop or
- Will be included as part of the overall visual and acoustic assessment during the Environmental Impact stage.

The seven interim survey forms received included a list of 14 typical road planning issues. Stakeholders were invited to rank the issues in terms of their importance from very important, important, and less important to not important. The stakeholder responses mostly corresponded to those tabled in Community Involvement Summary Report (Corridor Options Stage) (*Pramax August 2002*) in that the issues considered very important or important were impact on the natural environment, traffic noise, landscape disturbance and visual impact, air quality impacts, flooding and drainage changes, community disruption and severance, tourism impacts, local access changes, and improved road safety and travel conditions. The issue considered less important or not important was project cost. The exceptions were changes to the local economy, impact on businesses, property effects and impacts on heritage sites which were ranked less important than previous respondents.

Table 5.1: Interim submissions – May 10, 2002 – December 6, 2002

Section	No.	Issue Identified	Benefits/Impacts Cited
Coffs Harbour section	54	Support for People's Choice/Coastal Ridge Way and opposition to inner corridor or an upgrade of the existing highway	<ul style="list-style-type: none"> • Noise and vibration • Effects on residential property • Air quality • Community impacts • Flora and fauna • Travel time and efficiency • Visual and urban design • Road safety • Effects on business and tourism • Effects on agricultural land use • Firebreak • Should be constructed in short-term
	5	Opposition to inner corridor	<ul style="list-style-type: none"> • Community impacts • Effects on residential property • Visual and urban design • Air quality • Noise and vibration
	5	Opposition to Coastal Ridge Way/People's Choice	<ul style="list-style-type: none"> • Flora and fauna • Effects on residential property • Effects on forestry activities • Air quality • Noise and vibration • Fire hazard • Road safety • Effects on business and tourism • Community impacts • Visual impacts • Cost of construction • Construction difficulties • Effects on agricultural land use
	2	Support for upgrade of existing highway	
	1	Lighting on any bypass	<ul style="list-style-type: none"> • Provide efficient, economic and environmentally-sensitive light fixtures

Table 5.1 Cont'd: Interim submissions – May 10, 2002 – December 6, 2002

Section	No.	Issue Identified	Benefits/Impacts Cited
Sapphire to Woolgoolga section	7	Support for Option A and opposition to Options B, C or D	<ul style="list-style-type: none"> • Noise and vibration • Air quality • Cost of construction • Effects on business and tourism • Visual and urban design • Community impacts • Effects on residential property • Road safety • Flora and fauna • Firebreak • Effects on agricultural land use
	5	Design considerations	<ul style="list-style-type: none"> • Noise mitigation • Visual mitigation • Access arrangements
	5	Opposition to Option C	<ul style="list-style-type: none"> • Waterways quality • Flora and fauna • Visual and urban design • Road safety • Effects on business and tourism • Waterways quality • Community impacts
	1	Opposition to widening of highway at Sandy Beach	<ul style="list-style-type: none"> • Noise and vibration • Community impacts
	1	Opposition to all proposed bypasses of Woolgoolga	<ul style="list-style-type: none"> • Effects on residential property • Flora and fauna • Community impacts • Effects on agricultural land use • Road safety
Both sections	5	Increase in heavy vehicle movements on Pacific Highway	<ul style="list-style-type: none"> • Road safety • Travel time and efficiency • Noise and vibration • Air quality
	18	Support for Far Western Bypass to Halfway Creek or Grafton or beyond	<ul style="list-style-type: none"> • Effects on residential property • Noise and vibration • Road safety • Cost of construction • Air quality • Effects on business and tourism • Waterways quality • Flora and fauna • Travel time and efficiency • Visual and urban design

6. Conclusion

A range of views was expressed in the survey forms and submissions received on the merits of the bypass options from north of Moonee as well as the upgrade of the existing highway between Sapphire and Moonee.

The issues raised by respondents will be taken into account as part of the process to select a preferred route. Other inputs will include various reports produced by the project team, workshops with key stakeholders and comments from State Government agencies.

Each option will be compared to identify the route that achieves the best balance between functional, ecological and socio-economic factors while providing for the future needs of road users and local communities.

A decision on a preferred route is expected to be announced mid-2003.

APPENDIX A

Coffs Harbour Highway Planning Strategy Report

May 2003

Sapphire to Woolgoolga Upgrade

Community Submission Issues (Table of issues and responses by Proponent)

(Route Options Stage)

Prepared by:



For Coffs Harbour City Council, PlanningNSW, and the Roads and Traffic Authority

Contents

1. Background	P1
2. Purpose	P1
3. Sapphire to Moonee section	P2
4. Moonee to Woolgoolga section	P6

1. Background

As part of the Pacific Highway Upgrading Program, the NSW Roads and Traffic Authority (RTA) is developing plans to upgrade a section of the Pacific Highway north of Coffs Harbour by widening, duplication and/or deviation. The section of highway extends from Sapphire to north of Woolgoolga. The project development work includes route selection and concept development to assess the project in terms of a range of functional, environmental and socio-economic criteria in accordance with the statutory requirements of the *Environmental Planning and Assessment Act 1979* (as amended).

Upgrading of the Sapphire to Woolgoolga section forms part of the Coffs Harbour Highway Planning Strategy, which is being developed to meet the future traffic needs of the Pacific Highway through the Coffs Harbour Local Government Area (LGA). The strategy is being overseen by a Steering Committee which includes representatives of the RTA, PlanningNSW and Coffs Harbour City Council.

2. Purpose

A number of submissions and Comment Forms received since the Route Options announcement on December 6, 2002 raised issues in relation to what respondents saw as the inaccuracy or incompleteness of investigations and assessments documented in Community Update 3, the Draft Route Options Development Report (DRODR) and the Working Papers for this Stage. This Community Submission Issues and Responses Report (Route Options Stage) has been prepared to document these issues and the Project Teams' response to them. The report includes the submissions and Comment Forms received since the Route Options announcement on December 6, 2002, until close of their receipt on February 28, 2002. Allowance also was made for late deliveries to the Reply Paid PO Box. Submissions and survey forms cleared from the PO Box until close of business on March 3, 2002, were included, as were representations made to the Minister for Roads, other Government Members and representatives of the three Steering Committee partners which were pre-dated March 1, 2002, but forwarded for assessment after this date. One community group also had pre-arranged the inclusion in this assessment of a submission that was compiled following a meeting held on March 19, 2002.

For the purpose of this report, the issues raised have been divided into those concerning the section of existing highway from Sapphire to Moonee, and those regarding the bypass and upgrade options from north of Moonee to north of Woolgoolga.

Direct statements from submissions and Comment Forms have been used where necessary to retain the original intent of the respondent and each issue can be sourced back to the respondent/s. Where there are doubts regarding submission statements, these have been included for assessment by the project team. Where a number of issues have been raised by the same respondent, these are listed consecutively.

1. Sapphire to Moonee section

RESPONDENT IDENTIFICATION No.	ISSUES RAISED	RESPONSE
1.1	<p>Traffic figures</p> <p>Traffic figures misleading. Roads and Traffic Authority's (RTA's) statement that 90% of traffic is local is contradicted by other RTA documentation showing that only 42% is local.</p>	<p>Future traffic growth on the Pacific Highway has 3 sources (CHHPS WP2, 3/02, p.8):-</p> <ul style="list-style-type: none"> • <i>Population-driven growth</i>: Traffic growth associated with population increases along the North Coast and in the major centres (including Sydney and Brisbane), • <i>Diverted traffic</i>: As the Pacific Highway is improved, traffic is expected to divert from other routes, principally the New England Highway, • <i>Induced traffic</i>: Improvements to the Pacific Highway are expected to reduce the cost of travel to the point where people are encouraged to travel more. <p>Estimated increase in traffic volumes north of Headland Road (2001 to 2021) is 22,897 veh/day (38,653 – 15,756) (S2W WP8, Tables 2.1 & 4.2)</p> <p>Estimated 2022 volumes of diverted and induced traffic are 1,500 to 2,500 (approx.) and 1,000 to 1,800 (approx.) veh/day respectively (Draft Strategic Assessment WP14, Tables 5.4 and 5.5). Therefore estimated 2022 volume of diverted and induced traffic is 2,500 to 4,300 (approx.) veh/day.</p> <p>Consequently, % of diverted and induced traffic growth is between 11% and 19% [(2,500 to 4,300)/22,897]. And % of population-driven growth is between 89% and 81%.</p>

Predicted development on Northern Beaches	
<p>Many of the assumptions about development, including that development on the Northern Beaches will double traffic volumes over the next 20 years, are flawed. Some respondents unconvinced that thousands of new homes will be built around Moonee and Sandy Beach over the next 10-12 years. An upgrade may in fact deter people from wanting to live in those areas.</p>	<p>The volume of traffic predicted to be generated by proposed developments on the Northern Beaches is based on Coffs Harbour City Council's planning for future development of the area and the <i>RTA Guide to Traffic Generating Developments</i>. The number of dwellings / lots expected to be created in these new developments during the 15 year period 2002 to 2017 is 2,473 (S2W WP8 Table 4.1)</p> <p>Based on the above investigations, the increase in traffic volumes north of Headlands Road in the period 2001 to 2021 due to the new urban development is 10,196 veh/day (S2W WP8 Table 5.2).</p> <p>This increase of 10,196 veh/day represents 45% of the total increase in traffic volumes at this location with the other 55% being due to other <i>population-driven growth</i> (both local and through), <i>diverted traffic</i> and <i>induced traffic</i>.</p>

	<p>Urban development main driver of growth in traffic</p> <p>No compelling evidence that urban development is the main driver of growth in traffic. The Traffic and Transport Assessment Working Paper No.8 suggests that less than half the future growth in traffic volume will come from local urban development. The majority (55%) will come from a rise in through traffic.</p>	<p>55% of the increase in traffic volumes north of Headlands Road (12,701 veh/day between 2001 and 2021) is due to <i>population-driven growth</i> (both local traffic from other than new urban developments and through traffic), <i>diverted traffic</i> and <i>induced traffic</i>. 45% of the increase in traffic volumes is due to <i>traffic growth from new urban developments</i>. (S2W WP8 Table 5.2).</p> <p>Based on the Origin – Destination Survey, the volume of through traffic between Opal Cove and Mullaway was approximately 4,000 in 2001 (S2W WP8, Table 2.5). Based on traffic count data the estimated Daily Traffic Volume on the Highway north of Headlands Road in 2001 was 15,756 (S2W WP8 Table 2.1). Consequently, approximately 25% (4,000 / 15,756) of the traffic on the Highway North of Headlands Road in 2001 was through traffic between Opal Cove and Mullaway.</p> <p>Based on the historical rate of growth of traffic on the Highway, a compound growth rate of 3% per annum has been adopted for the traffic analysis in conjunction with a separate analysis of the traffic generated from the future land use developments. (S2W WP8, Section 2.3). Based on this growth rate the volume of through traffic between Opal Cove and Mullaway is predicted to increase from approximately 4,000 veh/day in 2001 to 7,224 veh/day in 2021.</p> <p>Traffic volumes north of Headland Road are estimated to increase from 15,756 veh/day in 2001 to 38,653 veh/day in 2021. (S2W WP8, Tables 2.1 & 4.2)</p>
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	Urban development main driver of growth in traffic (cont.)	
		<p>Consequently, approximately 19% of the traffic north of Headlands Road in 2021 is estimated to be through traffic $(7,224 / 38,653 = 19\%)$. Also, approximately 14% of the increase in traffic volumes north of Headland Road between 2001 and 2021 is estimated to be through traffic between Opal Cove and Mullaway $[(7,224 - 4,000) / (38,653 - 15,756)]$ with the remaining 86% of the increase being local traffic.</p> <p>A high proportion of the through traffic between Opal Cove and Mullaway (7,224 veh/day in 2021) would either have their origin or destination in Coffs Harbour or would stop in Coffs Harbour on their way through. The Coffs Harbour Highway Planning Strategy estimated that 1,000 to 2,000 veh/day would use the Central Corridor north between Coramba Road and Bucca Road (CHHPS WP2 Fig.4.3). As the Central Corridor is functionally similar to the Coastal Ridge Way (CRW) proposal, the maximum number of vehicles the CRW is likely to attract away from the existing Highway at Sapphire is 2,000 / day – leaving 36,653 veh/day on the existing Highway at Sapphire. This number of vehicles (36,653 veh/day) is over twice the existing number of vehicles on the Highway (15,756) (S2W WP8 Table 2.10). As the Level of Service (LOS) of the existing Highway is already poor (LOS E) (S2W WP8 Table 2.10), the Highway would need to be duplicated to cater for the anticipated volume of traffic remaining on it with the Coastal Ridge Way in operation in 2021.</p>

2. Moonee to Woolgoolga section

RESPONDENT IDENTIFICATION No.	ISSUES RAISED	RESPONSE
2.1	Ecological Assessment	
	General criticisms of amount of ecological detail available on Option A as compared to other options. Calls for field studies on other options before Preferred Option is announced.	A more detailed study is beyond the scope of this current study. The data currently available is adequate and appropriate for a comparative assessment of the options. However, a more detailed survey will be undertaken of the Preferred Option during the preparation of the EIS.
	Criticisms that Option A is mostly open eucalypt forest that has been previously logged or is designated for future logging and, while it has some areas of significance, largely lacks environmental significance.	The comment that Option A has been logged or is to be logged is an over simplification. State Forests are obliged to manage timber production alongside the conservation of threatened species. Wedding Bells State Forest contains a number of management zones. These zones include Forestry Management Zone 2 (Special Management: management and protection of natural and cultural conservation values - informal reserves) and Forestry Management Zone 3 (Special Prescription: management for conservation of identified values and forest ecosystems and their natural processes). Forestry Management Zones 2 and 3 were noted to constitute an informal reserve system within the State Forests estate.

	<p>Because the area is so large, there is plenty of habitat for impacted fauna to retreat to and taking some will not have the same overall effect as on other Options which have smaller and therefore more valuable habitat.</p>	<p>The assertion that large areas of habitat allow plenty of room for fauna to move is at odds with the ecology of many native species. Impacted fauna cannot simply move to other habitats, when considering factors such as differences in habitat, territoriality, and carrying capacity. It should be acknowledged that in terms of conservation planning, larger areas of habitat are more desirable than smaller areas, as they are more robust, are more capable of carrying larger and thus more viable populations and as such are more likely to survive catastrophic events such as fire. Smaller areas are more vulnerable to catastrophic events, and may have a limited carrying capacity due to size. The assertion that smaller areas of habitat are more valuable is difficult to justify on a simplistic basis; they have to provide unique resources for native species. It should be noted that provision is not simply a matter of presence or absence, it requires that the resources are of a quality and quantity sufficient to support the presence of a threatened species.</p>
	<p>Detailed studies are required taking into account seasonal changes and migratory habits of wildlife. The approach taken during the studies to observe flora and fauna from roadsides is unacceptable.</p>	<p>A more detailed study is beyond the scope of this current study. The data currently available is adequate and appropriate for a comparative assessment of the options. However, a more detailed survey will be undertaken of the Preferred Option during the preparation of the EIS.</p>

	Socio-Economic Assessment	
	<p>The proposed highway corridors east of the coastal ranges will have a significant negative impact on eco-tourism... This conflicts with the findings that Effects on Tourism are predicted to be "low moderate beneficial" for B1, B2, C and D and do not validate the report. The evidence suggests that the impact to tourism by these route options will be "Moderate Adverse" especially since all reports note that the coastal village atmosphere and peaceful natural scenic surrounding countryside is the area's main attraction.</p>	<p>In assessing the effects on tourism, the Socio-Economic Assessment Working Paper focused on the coast and headlands where the majority of tourist services are located. It is acknowledged that there are other tourist attractions established in the hinterland areas, including eco-tourism businesses. One of the most important principles in social impact assessment is that of seeing the whole economy. At the options comparison stage of the project in particular, it is necessary to look at the broader picture rather than specific property/business impacts. It is also important that access and connectivity is factored into the overall assessment as car transport for visiting tourists is particularly relevant. These factors formed part of the overall assessment in the working paper.</p>
	<p>Neither the update or the more detailed working papers cost estimated the social economic factors related to community segregation, noise or visual impacts, access and movement, land use, property, business and tourism values.</p>	<p>Measurement of social impacts rely on a number of techniques such as cost-benefit analysis, cost-effectiveness analysis, social indicators, social auditing, multi-criteria analysis, impact display table, participatory computer modelling, etc. The most appropriate technique depends on constraints such as timeframe, available funds and expertise. Valuation of social impacts in dollar terms would require a high level of data requirements and corresponding high cost and timeframe. As the options development stage of a project relies on comparative assessment rather than absolute measurement, valuation of social impacts in dollar terms would be unlikely to significantly impact on the selection of the preferred option and would not warrant the time and cost required to collect the data and evaluate the options.</p>
	Mapping	
	<p>There is no magnified aerial photographs with route overlay for critical areas of Options A, B1 or B2.</p>	<p>Large scale maps were available at the display locations.</p>

Noise and Vibration Assessment	
Some facts that should be discussed but not reported in the project's publications are that the composition and speed of traffic have a major influence on road noise. Currently the highway passing through Woolgoolga is speed restricted to 60km/h. An upgrade of the existing highway or bypass route option C will raise the speed of traffic to 80km/h and the bypass A and B route options will be designed for 110km/h traffic. According to studies reported by the US Department of Transportation, traffic at 105km/h sounds twice as loud as traffic at 50km/h. One truck traveling at 88km/h sounds as loud as 28 cars at 88km/h. The community has a right to know what exactly the levels of these impacts will be and limitations of noise abatement.	The traffic modelling allows for the anticipated changes in composition and speed of traffic, i.e. the modelling allows for the differences in noise levels between light and heavy vehicles and for the differences in noise levels resulting from changes in traffic speeds.
Cost Estimates and Economic Analysis	
Property devaluation: Lost opportunity cost for real estate development has not been included in any of the project cost estimates.	In accordance with NSW Treasury requirements and RTA Guidelines, only direct costs as opposed to opportunity costs have been included in the economic analysis.
Indigenous and Non-Indigenous Heritage Assessments	
Aboriginal (former campsites) and non-Aboriginal (former gold mine) exist in the direct path of the central corridor but are not mentioned in Community Update 3.	Former campsites are detailed in the Aboriginal Heritage Assessment Working Paper (confidential). Acknowledged that a former gold mine was not identified – it is not a listed heritage item on any of the heritage registers. A more detailed investigation of the Preferred Option will take place at EIS stage.

	<p>Traffic and Transport Assessment</p>	
	<p>If the angle, length and number of grades in Option A were adjusted, it would have a profound effect on travel speed for heavy vehicles and the need to provide for passing lanes at extra cost. The extra earth works to reduce gradients would increase the cost of construction but the reduced travel time and operating cost for heavy vehicles would offset the additional cost and viability for heavy vehicles. The components of the equation for the BCR needs to be re-examined as if the outer route option A and/or Coastal Ridge Way were the preferred option driven by all other factors.</p>	<p>Minor adjustments to the angle, length and number of grades in Option A as suggested would make only a small difference to travel time analysis but could significantly alter the quantities of earthworks, the depths of cuttings and the height of fill embankments.</p> <p>The benefits of any reductions in travel times and vehicle operating costs would be offset by increased construction costs and the relativities between the options in terms of economic performance would not alter.</p> <p>Vertical alignment of Option A would be finetuned if it was selected as the Preferred Option.</p>
	<p>Community Update 3</p>	
	<p>Newsletter fails to note that route Options C and D have a moderate to high adverse impact to community cohesion and interaction. However the diagrams showing the upgrade of the existing highway clearly show that with highway restrictions and additional service roads there will be major community severance with Options C and D.</p>	<p>Assessment of community cohesion is described in Working Paper No. 7. Community Update 3 is only a summary to detail key issues.</p> <p>Both the Route Options Development Report and Working Paper No.7 identified that Option C would have “moderate adverse” and that Option D would have “high adverse” effects on community cohesion.</p>

<p>2.2</p>	<p>Socio-Economic Assessment</p>	
	<p>The study area defined in this section of the report is at variance with that noted in section 2.2.7.</p> <p>Section 2.2.7 of this report introduces Indigenous communities at Red Rock, Corindi etc, which are not areas included in the study area defined in section 1.2.</p> <p>Section 2.4 on Business Activity – the figures do not appear to be consistent eg. If wholesale/retail is 17.2% of economic activity and is worth \$344m, then the total economic activity of Woolgoolga is \$2 billion. If bananas are \$25m and worth 2.1%. the economic value is \$1.2 billion.</p>	<p>Section 2.2.7 states that indigenous communities are focused at Corindi and Red Rock. It is important to note that Aboriginal communities, boundaries of tribal lands and representation for different areas does not necessarily correspond to local government boundaries. Within the study area, the Aboriginal community is represented by the Coffs Harbour Local Aboriginal Land Council, the Yarrowarra Aboriginal Corporation, the Garby Elders and the Gumbala Julipi Elders.</p> <p>The 17.2% relates to the most common employment types – note that the four employment types do not add up to 100%. It is incorrect to relate this 17.2% to the \$344 million. Similarly, the figure of \$25 million was reported to Wilkie Fleming by the Banana Growers Association as an estimate only and cannot be correlated to the figure of 2.1% reported by CHCC.</p>

<p>Noise and Vibration Assessment</p>	
	<p>This report contains a number of assumptions which need to be justified. The assumption of reduced traffic on the existing highway for all options except Option D does not consider the growth in traffic with development of the area. The Traffic and Transport Assessment working paper predicts traffic of around 35,000 AADT compared with about 17,000 AADT in 2001.</p> <p>The assumption of shielding of sensitive receivers beyond the first two rows might not be valid on the steeper terrain in Woolgoolga, where the slope of the land would limit shielding effectiveness.</p> <p>Existing noise levels and validation of noise model - it appears only four actual measurements have been made, with a bias towards the southern end of the project. These locations are not identified on Figure 1.</p> <p>Why were noise measurements not taken in Woolgoolga urban area? Why are "15 minute measurements" used to predict all the traffic model results for most of the Highway route.</p> <p>The traffic volumes used for the noise predictions in the Noise and Vibration Working Paper were derived from the traffic modelling outlined in the Traffic and Transport Assessment Working Paper. Consequently, the traffic volumes used for the noise predictions allow for the growth in traffic with development of the area.</p> <p>The Noise and Vibration Working Paper has generally considered the first two rows of residences in order to provide a reasonable comparison between the options. In some situations, topography may mean that residences set further back may be subjected to relatively high levels of traffic noise. However, these levels are likely to be below the EPA criterion and at this stage of the project have not been included. The omission of 10-20 or even 50 residences is unlikely to influence the identification of the Preferred Option.</p> <p>The validation process at the route selection phase is intended to ensure that noise levels are of the correct order of magnitude, not to validate the model or provide noise levels along the whole alignment. The use of a permanent noise logger for several days and a few satellite locations is therefore considered adequate and appropriate. The purpose of the assessment is to undertake a comparison between different options and therefore absolute noise levels are less critical.</p> <p>Measurements were conducted at a few random satellite locations along the alignment. The taking of noise measurements in the urban area of Woolgoolga was not considered to be necessary to provide any additional information. As part of the EIS process, noise monitoring would be conducted at significantly more locations - including the urban area of Woolgoolga.</p>

	<p>Figure 3.1 shows the noise contours for the existing highway for daytime only. The model appears to be incomplete in Woolgoolga on the east side of the Highway, through the urban area, also at Emerald Beach (only one contour shown). Are these "model" values ie predictions, not measurements.</p> <p>For flat country, such as Gun Club, Heritage Park etc the noise contours could be expected to be equi-distant from the Highway. This does not appear to be mapped as such.</p> <p>No noise contours for nighttime is given. Nighttime on a short, easy graded bypass around Woolgoolga town centre?</p> <p>The traffic projections for the area around Emerald Heights appears somewhat odd eg for option D, night heavy traffic 2002 = 347 vehicles but night time heavy traffic 2016 = 376 vehicles, hence over 14 years the amount of heavy trucks will increase less than 30 vehicles?</p>	<p>The noise contours presented in the report were meant to provide an indication of the existing noise levels in the area with respect to distance. These contours were generated based on the position of actual receivers or noise catchment areas. For this reason, in areas of no residences, it has not been possible to present contours at all, and in some areas with only a few residences, the contouring algorithms may produce some spurious results. This may explain the non-equi-distance contours in the vicinity of the Gun Club.</p> <p>The contour plot is not intended to be used for determining actual noise levels at a particular location, but rather to present a general trend in noise levels versus distance along the existing alignment.</p> <p>Noise contours were only presented for the daytime scenario. No contours were calculated for the nighttime. At this stage, it was considered noise contours at nighttime were not required.</p> <p>The 2002 night time Heavy Vehicle (HV) count on the existing Highway shows a heavy bias towards northbound vehicles, e.g. north of Fiddaman Road 347 HV northbound and 236 HV southbound giving a total in both directions of 583 HV. However, for the 2016 predictions it was assumed that there would be an equal number of HV northbound and southbound, e.g. north of Fiddaman Road 376 HV northbound and southbound giving a total in both directions of 752 HV. Consequently, the total increase in night time HV north of Fiddaman Road between 2001 and 2016 is 169 (752 – 583) or 29%.</p>
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	<p>At Pullen Street the increase in nighttime heavy traffic is only 16 vehicles over the 14 year period?</p> <p>Table 4.1: the table heading suggests the table gives traffic volumes on different route options. How can option C only attract 19 trucks at night time on a short, easy graded bypass around Woolgoolga town centre?</p>	<p>As outlined above, the 2002 night time Heavy Vehicle (HV) count on the existing Highway shows a heavy bias towards northbound vehicles and the 2016 predictions assumed that there would be an equal number of HV northbound and southbound. The HV numbers north of Pullen Street are:- 2002 - 350 northbound and 239 southbound giving a total in both directions of 589, and 2016 - 366 northbound and southbound giving a total in both directions of 732. Consequently, the total increase in night time HV north of Pullen Street between 2001 and 2016 is 143 (732 – 589) or 24%.</p> <p>Table 4-1 has been incorrectly interpreted. The correct interpretation of the table is that in 2016 694 heavy vehicles use Option C at night time (347 in each direction) and 38 heavy vehicles use that section of the Highway bypassed by Option C (19 in each direction).</p>
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Indigenous and Non-Indigenous Heritage Assessments	
<p>The Non-Indigenous Heritage working paper notes that no fieldwork has been undertaken at this time. This does seem to be an inadequate basis for assessment of a major highway project.</p> <p>Option A – the assessment fails to provide any evidence for the assessment of “no direct effects and indirect effects are expected to be negligible for 18 Split Solitary Road. The distance between the upgraded highway and the heritage site should be included so that a reader can consider the assessment. (This comment is common for all options)</p> <p>No mention is made of the Woolgoolga Jetty and its role in the development of Woolgoolga. This may be relevant, as an old tramline (of which some evidence remains) would have traversed the existing highway site, in the vicinity of the roundabout.</p> <p>The presence of an old tramline to Woolgoolga Jetty is quite likely to be encountered in the project, should option D be selected. Refer to Deposited Plan DP6081 for the tramline location. The relics provisions will most likely come into effect for this and it needs further investigation by the consultants.</p>	<p>The route options assessment stage is primarily concerned with direct impacts of route options on non-indigenous heritage and does not constitute a full heritage study of the whole study area. A site inspection was carried out of the only listed heritage item in the vicinity of any of the route options – No 18 Split Solitary Road which is over 100m from the Pacific Highway road reserve and approximately 50m from any new roadworks. Impact on heritage items is usually prescribed in environmental planning instruments and in most cases comprises direct impact on the item, or its close proximity to the item.</p> <p>Further detailed investigation of heritage issues associated with the Preferred Option will occur at the EIS stage and this will include research into the location and significance of non-indigenous heritage items (e.g. the old tramline route) and any relics.</p>
<p>Option D – Justification of the “no direct effects” on the Sikh Temple should be provided. Does “no direct effects” mean it won’t be bulldozed to make room for the upgrade should option D be selected, yet the maps in other working papers suggest access roads etc may well pass by the Temple or might even require some property adjustment. Certainly noise and traffic vibration should be noted as potential impacts on the religious site.</p>	<p>“No direct effects” means no acquisition of the whole or part of the property. The Pacific Highway currently passes alongside the Sikh temple.</p>

Statutory and Strategic Planning Issues Assessment	
<p>Table 2.1 appears to concentrate on bypass options and ignores the Sapphire-Moonee section. There is no tabulation of the zonings traversed by that section of the proposal.</p>	<p>Acknowledged. Relevant zonings were shown in Figure 2.1. However, Table 2.1 should be amended as follows :-</p> <ul style="list-style-type: none"> • include an 'X' in the Option D column against the Rural 1A Agricultural Zone which is traversed by the Sapphire to Moonee section, and • Insert a row for the 'Business 3G Mixed Use Zone' and an 'X' included in the Option D column against that zone as the Sapphire to Moonee section of Option D passes adjacent to that zone at Moonee.
<p>The Koala Plan of Management is not mentioned or considered under local instruments.</p>	<p>Acknowledged – the Koala Plan of Management was not specifically referenced in either the Statutory and Strategic Planning Working Paper or the Ecological Assessment Working Paper. The former concerns planning issues and controls and the Koala POM is not relevant. It should have been specifically mentioned in the Ecological Working Paper. However, p.59 of the Ecological Assessment considers the probability of occurrence and significance of impact as with other mammals. In addition, CH LEP provides for the protection of koalas and their habitat in Cause 12 in relation to consent provisions ensuring that development is in accordance with the Koala Plan of Management.</p>
<p>Do Options C and D have any impact on wetland number 318. The existing highway is less than 200 metres from the wetland. Other wetlands exist at Mullaway, Woolgoolga and Sapphire.</p>	<p>Acknowledged that wetland 318 is less than 200m from existing highway. Southbound carriageway of Option D is on existing carriageway, so there is no direct impact on this wetland. Similarly, wetlands Nos 316 to 319 (Sapphire to Woolgoolga) all lie east of the existing highway and Option D proposed alignment.</p>
<p>Does the State Government Coastal Policy SEPP 71 have any potential impact on the project, especially options C & D and the Sapphire section of the project?</p>	<p>SEPP 71 does not apply to development where the Minister or the Director-General is the consent authority. It would only apply to any part of the project which requires development consent from CHCC</p>

	<p>Table 3.2 allows for 40 dwellings from Sandy Beach (East). There is capacity for up to 400 lots at the "Pacific Pearl" site immediately north of Sandy Beach, and preliminary investigations have commenced for a potential developer regarding this site.</p>	<p>The assessment of future development was based on what is likely to occur rather than what could potentially occur. Pacific Pearl site was not identified by CHCC as a feasible urban expansion site. This site is zoned Tourist 2E and is flood liable.</p>
	<p>Geotechnical Investigations</p> <p>Drawing 5 shows a long section of option D. In the vicinity of Graham Drive (South) the new road is close (within 0.3m) to existing highway grade. It was understood that the intersection was proposed to be reconstructed with a substantial lowering of the road south of the intersection, although the long section does not show this. Previous submissions by the Emerald Heights community have identified concerns with the intersection, however the long section drawing does not take into account matters previously raised.</p>	<p>There appear to be errors in the longitudinal section for Option D in the Geotechnical Report in the vicinity of Graham Drive South.</p> <p>Regardless of what is shown in the Geotechnical Report, the proposal (under Option D) is to substantially lower the crest immediately south of Graham Drive for sight distance / safety improvement reasons.</p>

<p>2.3</p>	<p>Ecological Assessment</p> <p>Two dams, which provide habitat for bats and aquatic birds, are attributed as being affected by Option D but are actually on Option C. Respondent believes more detailed studies of vulnerable species on Option C along its Woolgoolga Creek crossing required since a recent inspection by a Coffs Harbour botanist found species that couldn't even be named.</p> <p>Paperbark and Booyong-Red Bean vegetation associations to be found in Option C but not identified. Option C therefore has a total of six associations of very high to high conservation status.</p> <p>Lowland Sub-tropical Rainforest on Floodplain, which is schedule 1 endangered, is also located within 60m of Option C.</p>	<p>The identified location of the dams may be an error, and will be rectified.</p> <p>The existing NPWS CRAFT1 mapping was used for the study. The identified threatened species were documented in the Working Paper. It is acknowledged that the presence of some threatened species, and eucalypt and rainforest species on any of the options may not have been identified. The presence of these unidentified species is of particular concern along Option A, due to the large tracts of rainforest vegetation which would be cleared as a result of this Option. Nevertheless, the studies undertaken are adequate and appropriate for the purposes of this investigation and provide a sound basis for comparison of the options.</p> <p>With respect to the location of an undescribed species, such a specimen should be lodged with a recognised herbarium, and a second qualified botanist should attempt to identify the specimen. This will enable its identity (or lack thereof) to be confirmed, and its conservation status formally acknowledged.</p> <p>The Paperbark and Booyong-Red Bean communities were described as Lowland Subtropical Rainforest on floodplain, which is an endangered ecological community listed under the <i>Threatened Species Conservation Act 1995</i>.</p> <p>The Lowland Subtropical Rainforest on Floodplain (an endangered ecological community under the TSC Act) was identified in Working Paper No. 5. Details of floristics, structure, condition etc are provided on p.16 of Andrew Benwell's report which is in Appendix B of WP5.</p>
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	<p>The ground separating the Lowland Sub-tropical Rainforest on Floodplain community from Option C is not cleared as stated in assessment working paper but eucalypt and fringe rainforest species which contain an endangered species, a vulnerable species and a limit of distribution species.</p>	<p>Andrew Benwell's report describes the distribution of the rainforest community as "Distribution: Woolgoolga Ck on or adjoining Corridor C." The rainforest on the western side of Corridor C merges to the east into Brush Box-rainforest about where Corridor C is shown. There is a thin corridor of vegetation left all along Woolgoolga Ck, widening in places such as where the patch of floodplain rainforest occurs. This corridor was not shown on Coffs Harbour Council's vegetation mapping.</p>
	<p>Statement that Option D runs through Rainforest Complex is incorrect.</p>	<p>This relates back to the mapping. The existing NPWS CRAFTI mapping was used for the study. As vegetation mapping has been conducted over both State Forests and private property, this is a limitation that applies to all Options. Nevertheless, the studies undertaken are adequate and appropriate for the purposes of this investigation and provide a sound basis for comparison of the options.</p>

<p>2.4</p>	<p>Ecological Assessment</p> <p>Voluntary Conservation Areas (VCAs) on 131 and 139 Johnsons Rd – inconsistencies and inaccuracies in the categorising of the vegetation in the VCA and adjoining areas. Vegetation is moist eucalypt and rainforest with a number of rare species including Rusty Plum. Habitat value is understated – Giant Barred Frog species present although WP No.5 states that the frog is unlikely to live on the Option B2 route. Koalas also known to use this area and believed that the threatened species list in Table 1 of Appendix A of Working Paper No.5 is therefore incomplete. The VCA and adjacent forest should be coded on the habitat and corridors map as “key”.</p> <p>Documents supporting the VCAs were not provided by NPWS. Further information will be sought from NPWS if necessary at the next stage of the project.</p> <p>The presence of the Rusty Plum was acknowledged.</p> <p>The presence of the Giant Barred Frog was not acknowledged on Option B, as this habitat was thought to be unsuitable for this species due to the proximity of disturbances. The provision of information regarding the source and an accurate location of this species would be a valuable input into future studies (if required).</p> <p>In Working Paper 5 (Table 12, main document), the Koala was noted as having a 'high likelihood of occurring' along Option B, and a significant impact on this species was considered likely if Option B was chosen. Table 1 in Appendix A of Working Paper No.5 identified the koala as a threatened fauna species in the proximity of the proposed Woolgoolga By-pass route.</p> <p>"Key Habitats" were derived from NPWS maps. The NPWS maps do not identify Key Habitats being present where Option B crosses Johnsons Road. The NPWS maps did not provide coverage of State Forests, and were seen to miss some important ecological features, possibly due to the level of the study being more regional than local. To address this, 'Important Habitats' were defined by this study, and are described in more detail in Working Paper No.5. 'Important Habitats' should not be assumed to have a lesser conservation significance than 'Key Habitats'. The lands in question on Option B were identified as 'Important Habitats'.</p>
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<p>2.5</p>	<p>Ecological Assessment</p> <p>Voluntary Conservation Areas (VCAs) on 131 and 139 Johnsons Rd – inconsistencies and inaccuracies in the categorising of the vegetation in the VCA and adjoining areas. Vegetation is moist eucalypt and rainforest with a number of rare species including Rusty Plum. Habitat value is understated – Giant Barred Frog species present although WP No.5 states that the frog is unlikely to live on the Option B2 route. Koalas also known to use this area and believed that the threatened species list in Table 1 of Appendix A of Working Paper No.5 is therefore incomplete. The VCA and adjacent forest should be coded on the habitat and corridors map as “key”.</p>	<p>Documents supporting the VCAs were not provided by NPWS. Further information will be sought from NPWS if necessary at the next stage of the project.</p> <p>The presence of the Rusty Plum was acknowledged.</p> <p>The presence of the Giant Barred Frog was not acknowledged on Option B, as this habitat was thought to be unsuitable for this species due to the proximity of disturbances. The provision of information regarding the source and an accurate location of this species would be a valuable input into future studies (if required).</p> <p>In Working Paper 5 (Table 12, main document), the Koala was noted as having a 'high likelihood of occurring' along Option B, and a significant impact on this species was considered likely if Option B was chosen. Table 1 in Appendix A of Working Paper No.5 identified the koala as a threatened fauna species in the proximity of the proposed Woolgoolga By-pass route.</p> <p>"Key Habitats" were derived from NPWS maps. The NPWS maps do not identify Key Habitats being present where Option B crosses Johnsons Road. The NPWS maps did not provide coverage of State Forests, and were seen to miss some important ecological features, possibly due to the level of the study being more regional than local. To address this, 'Important Habitats' were defined by this study, and are described in more detail in Working Paper No.5. 'Important Habitats' should not be assumed to have a lesser conservation significance than 'Key Habitats'. The lands in question on Option B were identified as 'Important Habitats'.</p>
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	Mapping	
	Location of Moonee Creek incorrect on maps.	Figure 10 in Community Update 3 is the only map with Moonee Creek annotated. The location of the creek was obtained from the 1:25,000 topographical map produced by the Central Mapping Authority of NSW (CMA).
2.6	Ecological Assessment	
	Ecological Assessment of Option A omits important species eg Typhonium sp. Aff. Brownii, listed as Endangered under the NSW TSCA and understates the likelihood of occurrence (eg Marsdenia longiloba) or conservation value (eg Sarcochilus fitzgeraldii) of others. The adverse ecological impact of Option A is thus also understated. Respondent estimates that a more accurate assessment would add about 100-150 points to the rare species impact indicator score for Option A.	The comments are noted. The omission of <i>Typhonium sp. Aff. Brownii</i> was an oversight. The provision of information to support the comments would help with future studies (if required). The respondent identifies a number of data gaps on Option A, which indicate that it is highly likely that there are data gaps for all Options, including Option A, due to the uneven distribution of surveys over the study area. Further, the respondent's statements relating to the conservation significance of bushland due to the presence of a threatened species should bear in mind that other Options may also be similarly affected.
2.7	Mapping	
	Land use zoning on maps for Option B should be rural residential not agricultural.	Mapping and zoning data was provided by CHCC. Advice from CHCC is that it is common practice for all Councils in NSW to rate rural properties for dwelling purposes. Very few are primary producers and, historically, smaller lots have evolved over time for various reasons such as concessional lots, or provisions for banana growers to subdivide to smaller lots, etc.

2.8	Mapping	
	Land use zoning on maps for Option B should be rural residential not agricultural.	Mapping and zoning data was provided by CHCC. Advice from CHCC is that it is common practice for all Councils in NSW to rate rural properties for dwelling purposes. Very few are primary producers and, historically, smaller lots have evolved over time for various reasons such as concessional lots, or provisions for banana growers to subdivide to smaller lots, etc.
	Exhibition of Route Options	
	Residents not given enough time to respond. Staffed displays were only held at the end of the exhibition period.	The refined route options were on display for 12 weeks from Monday 9 December 2002 to Friday 28 February 2003. Staffed displays were held at Park Beach Plaza, Coffs Harbour on Monday and Tuesday 9 and 10 December 2002 and in Woolgoolga on Thursday, Friday and Saturday 12, 13 and 14 December 2002 and Monday and Tuesday 24 and 25 February 2003.
2.9	Noise and Vibration Assessment	
	Noise catchment area for Emerald Beach is a joke and appears grossly inaccurate.	The noise contours presented in the report were meant to provide an indication of the existing noise levels in the area with respect to distance. The contour plot is not intended to be used for determining actual noise levels at a particular location, but rather to present a general trend in noise levels versus distance along the existing alignment.
	Mapping	
	Topography map seems poor correlation to contour maps.	It is acknowledged that correlation may be poor in some areas as topographical information is based on cell-based data set (raster), where a cell could be 10 or 20 metres. This methodology tends to give more jagged lines as lines are connecting cells rather than points.
	Community Update 3	
	Longitudinal section in Community Update 3 needs to be true to scale.	It is standard practice to use different scales for the vertical and horizontal axes of longitudinal sections to improve the clarity of the drawing.

<p>2.10</p>	<p>Cost Estimates and Economic Analysis</p>	
	<p>There is bias towards Option D in the comparative costings between Option A and the existing highway upgrade. There are too many grade separated interchanges allocated for Option A for what are essentially forest roads compared to at grade separations for the existing highway upgrade.</p>	<p>The estimate for Option A allows for 2 grade separated interchanges (one at each end of the bypass) and for bridges to enable existing forestry tracks to pass over or under the bypass.</p>
<p>2.11</p>	<p>Cost Estimates and Economic Analysis</p>	
	<p>The negative costing aspects of Option A are understated. Heavy vehicles will continue to use the existing highway and there must be a means of estimating that percentage and adjusting the figures accordingly. Option A's BCR of 1.18 is hardly marginal and if figures were adjusted according to heavy vehicle use, it would therefore become unviable. If the considerable costs of the essential upgrading of the bypassed section of the highway were to be estimated and factored into the total cost and BCR of Option A, it would rule out Option A.</p>	<p>The traffic modelling assumed that all bypassable traffic would use the available bypasses. The modelling did not attempt to identify the number of vehicles that may not use the available bypasses due to increased travel times and/or vehicle operating costs. As identified in the submission, this assumption could over-estimate the number of vehicles that would use Option A and consequently also over-estimate the economic viability (BCR) of this option. However, this assumption is unlikely to affect the selection of the Preferred Option.</p>
<p>2.12</p>	<p>Indigenous and Non-Indigenous Heritage Assessments</p>	
	<p>Value of Mary's Waterhole to the Indigenous community is understated.</p>	<p>Both the Route Options Development Report and the Aboriginal Heritage Assessment Working Paper (confidential) identified Mary's Waterhole as a natural sacred site with high Aboriginal social significance.</p>

<p>2.13</p>	<p>Traffic and Transport Assessment</p>	
	<p>RTA tried to tell us only 7200 vehicles a day used the highway and that 10% of them – 720 – on average are through traffic. This is laughable and so out of touch with reality. WAR count showed an average of 15,200 movements a day. This has been further swelled by the extra 500 B-doubles and semi-trailers that have the highway since August 2002. So using RTA’s percentages, at least 1570 vehicles a day are going up/down the highway each day.</p>	<p>The source of the reference to 7,200 veh/day cannot be identified. Table 2.6 of the Traffic and Transport Working Paper identified that in 2001 heavy vehicles (HV) accounted for 10% of the traffic south of Campbell Close (1,534 HV/day) and 15% of the traffic north of Mullaway Drive (1,092 HV/day). Data collected by the RTA indicates that heavy vehicle numbers increased by about 250 (150 B-doubles and 100 semi-trailers) following the opening of the Yelgun to Chinderah project in August 2002. Consequently, it is estimated that the number of heavy vehicles on the Highway in early 2003 is approximately 1,800/day south of Campbell Close and 1,350/day north of Mullaway Drive.</p>
<p>2.14</p>	<p>Community Update 3</p>	
	<p>Mention of 8 rural residential lots “directly affected in the Sapphire to Moonee section” by Option A shows bias as these properties are affected in the case of all options.</p>	<p>The number of rural residential properties identified as being directly affected by each of the options includes the 8 rural residential properties in the Sapphire to Moonee section.</p>

2.15	<p>Community Update 3</p>
	<p>Under the heading, Use of Route Options by Heavy vehicles, there is also a table. By including the length of each route the speed and VOC per km in this table, it is believed a better comparison of the routes is obtained. The extra travel time on Option A is largely due to the extra distance, but is also due to the assumption that truck speeds would be slower. This is not the case on the steep grades of the Bulahdelah to Coolongolook Freeway – trucks travel at maximum speed limits. Sharp bends slow down trucks rather than steep grades. Travelling time on Option A would reduce if speeds were the same as on the other options. For example, at 97.92km/h, it would take 12.5 minutes to travel Option A. When you break Vehicle Operating Costs down to cost per kilometre, Option A is the cheapest.</p> <p>The effect of grade on the speed of heavy vehicles was calculated using a formula developed by Austroads. This analysis shows that grades do affect the speeds of heavy vehicles. The RTA Economic Analysis Manual provides rates for estimating Vehicle Operating Costs (VOC). This data shows that grades do affect the VOC of heavy vehicles.</p> <p>VOC per kilometre for each of the options is as follows:-</p> <ul style="list-style-type: none"> • Option A – 78.8 cents/km (\$16.00 / 20.3 km) • Option B1 – 80.5 cents/km (\$13.60 / 16.9 km) • Option B2 – 80.1 cents/km (\$14.10 / 17.6 km) • Option C – 79.0 cents/km (\$14.30 / 18.1 km) • Option D – 79.6 cents/km (\$14.00 / 17.6 km). <p>Consequently, although the VOC/km for Option A is slightly lower than for the other options, the total VOC for the trip between Moonee and Arrawarra Creek is significantly higher than for the other options due to the additional length of Option A.</p>

APPENDIX B

Coffs Harbour Highway Planning Strategy Report

May 2003

Sapphire to Woolgoolga Upgrade

Submission Design Issues and Responses (Table of issues and responses by Proponent)

(Route Options Stage)

Prepared by:



For Coffs Harbour City Council, PlanningNSW, and the Roads and Traffic Authority

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1. Background

As part of the Pacific Highway Upgrading Program, the NSW Roads and Traffic Authority (RTA) is developing plans to upgrade a section of the Pacific Highway north of Coffs Harbour by widening, duplication and/or deviation. The section of highway extends from Sapphire to north of Woolgoolga. The project development work includes route selection and concept development to assess the project in terms of a range of functional, environmental and socio-economic criteria in accordance with the statutory requirements of the *Environmental Planning and Assessment Act 1979* (as amended).

Upgrading of the Sapphire to Woolgoolga section forms part of the Coffs Harbour Highway Planning Strategy, which is being developed to meet the future traffic needs of the Pacific Highway through the Coffs Harbour Local Government Area (LGA). The strategy is being overseen by a Steering Committee which includes representatives of the RTA, PlanningNSW and Coffs Harbour City Council.

2. Purpose

This Submissions Design Issues and Responses Report (Route Options Stage) has been prepared to document the design issues raised in submissions and Comment Forms received since the Route Options announcement on December 6, 2002, until close of their receipt on February 28, 2002. Allowance also was made for late deliveries to the Reply Paid PO Box. Submissions and survey forms cleared from the PO Box until close of business on March 3, 2002, were included, as were representations made to the Minister for Roads, other Government Members and representatives of the three Steering Committee partners which were pre-dated March 1, 2002, but forwarded for assessment after this date. One community group also had pre-arranged the inclusion in this assessment of a submission that was compiled following a meeting held on March 19, 2002. Interim submissions and survey forms received between close of receipt of submissions for Stage 2 – Corridor Options on May 10, 2002, and the announcement of Stage 3 Route Options for the Sapphire to Woolgoolga section of the Coffs Harbour Highway Planning Strategy on December 6, 2002 also were assessed.

For the purpose of this report, the design issues raised have been divided into those concerning the section of existing highway from Sapphire to Moonee, and those regarding the bypass and upgrade options from north of Moonee to north of Woolgoolga.

Direct statements from submissions and Comment Forms have been used where necessary to retain the original intent of the respondent and each design issue can be sourced back to the respondent/s.

1. Sapphire to Moonee section

RESPONDENT/S IDENTIFICATION No.	ISSUES RAISED	RESPONSE
1.1	Wakelands Road:	
	Request for seagull intersection.	Request for seagull intersection to be considered at Value Engineering Workshop and during selection of Preferred Option.
1.2	Wakelands Road:	
	Request for seagull intersection	Request for seagull intersection to be considered at Value Engineering Workshop and during selection of Preferred Option.
1.3	Wakelands Road:	
	Request for seagull intersection	Request for seagull intersection to be considered at Value Engineering Workshop and during selection of Preferred Option.
1.4	Sugarmill Road:	
	Request for seagull intersection.	Request for seagull intersection to be considered at Value Engineering Workshop and during selection of Preferred Option.
1.5	Gaudrons Road:	
	If Headlands Road interchange option chosen, request for seagull intersection.	Request for seagull intersection to be considered at Value Engineering Workshop and during selection of Preferred Option.

<p>1.6</p>	<p>Sapphire Beachfront Apartments:</p>	
	<p>Many requests for:</p> <ul style="list-style-type: none"> • Two new lanes to be developed to the west of the existing highway leaving a portion of the old highway as a two-way access service road with a pedestrian/cycle lane on the eastern side. • Service road to run from entrance to Pelican/Nautilus Resorts north past the Shell Service Station to the proposed interchange at Gaudrons Rd. • Access to northern end of service road to be at proposed interchange. • Access at the southern end to be from a merge lane and access from the highway to the service road for northbound traffic to be an underpass fed with a left-hand exit lane located near the Pelican/Nautilus Resorts entrance. • Noise mitigation measures also to be implemented. • Refer Appendix A diagram. 	<p>Provision of Service Road to be considered at Value Engineering Workshop and during selection of Preferred Option.</p> <p>Noise mitigation measures will be considered as part of overall acoustic assessment.</p> <p>Appendix A diagram shows underpass south of Nautilus – likely to be very difficult to build under traffic and thus expensive.</p>
<p>1.7</p>	<p>Proposed interchange at Headland Road:</p>	
	<p>Request for Coffs Harbour City Council tree preservation order on land at Headland Road interchange zoned Koala Habitat area to be taken into account.</p>	<p>Extent of koala habitat will be identified and feasibility of refining Concept Design to reduce impact on koala habitat will be investigated.</p>
<p>1.8</p>	<p>Sapphire Corner Store:</p>	
	<p>Request for input into local roads issues that would impact on access to the corner store. Request to have access maintained to the private garage attached to the dwelling and the two units behind the store's dwelling. Access is currently off the existing access road off the Pacific Highway.</p>	<p>Arrangements for access to Sapphire Corner Store, private garage attached to the dwelling and the two units behind the store's dwelling to be determined in consultation with respondent.</p>
<p>1.9</p>	<p>Pelican Beach Resort:</p>	
	<p>Request for seagull intersection as minimum access for the resort.</p>	<p>Existing seagull intersection for Pelican Beach / Nautilus Resort is proposed to be retained.</p>

1.10	<p>The Mountain Way:</p> <p>Many requests for: If Headlands Road interchange option is chosen, concerns that residents in Gaudrons Road area would use The Mountain Way, a private carriageway, as a shortcut to travel south instead of travelling to Moonee interchange. This would increase road safety concerns on this narrow road.</p>	<p>Potential for increased traffic on The Mountain Way will be an input into the consideration of the Headlands Road, Split Solitary / Gaudrons Road interchange options at the Value Engineering Workshop and during selection of Preferred Option.</p> <p>Formal status of The Mountain Way to be confirmed with Council.</p>
	<p>Service road on western side of highway</p> <p>If interchange is to be located at Gaudrons Road/Split Solitary Road, the cost of the realignment (property acquisition and road works) of the Gaudrons Rd access for left in/left out only would be better directed at providing a two-way access road between Gaudrons Rd and Old Coast Rd and this would allow closure of Gaudrons Rd access to the highway. This would then remove the short distance issue between the proposed Gaudrons Rd left in/left out only and the Sugarmill Rd left in/left out only. The provision of a two-way service road on the western side of the highway would also provide a safe pedestrian access from all this western side to the beach or shop. School bus stops need to be provided at the interchanges and the bus stops need to be accessible from both sides of the highway so this again indicates the need for a two-way service road on the western side to access these stops on foot. The Mountain Way needs to be tied into the proposals either via Old Coast Road or direct into the interchange if it is at Headland Road. A two-way service road is a must between Gaudrons Road and Old Coast Road no matter which site has the interchange.</p>	<p>Provision of a service road on the western side of the Highway will be further investigated and considered at the Value Engineering Workshop and during selection of Preferred Option.</p>
1.11	<p>Sapphire:</p> <p>Requests to move the seagull intersection about 200m north of proposed position in Community Update #3, Figure 7, to in front of the Sapphire Service Station together with the elimination of a left-turning lane and roundabout.</p>	<p>Request for relocation and reorganisation of Sapphire access points will be further investigated and considered at the Value Engineering Workshop and during selection of Preferred Option.</p>

1.12	<p>Sapphire: Alternative design suggested for access to Sapphire Service Station. (Refer Appendix B1 and B2 diagrams – B2 diagram is most recent of design issues raised.)</p>	As above
1.13	<p>Sapphire: Additional access road on western side of highway to Sapphire Crescent and Service Station (Refer Appendix D diagram)</p> <p>Request from property owner to always have access into the back of her property from the service road, large boundary trees on the property to be left as a noise buffer, service road to be constructed as far from her boundary as possible and noise barrier of earth and planting to be placed if possible across what is now the opening from Sapphire Crescent to the highway.</p>	<p>As above</p> <p>To be investigated during refinement of Concept design following selection of Preferred Option.</p>
1.14	<p>Sapphire: Many requests for: Residents of Sapphire Crescent and the owners of the service station and Aqualuna Resort to have direct access off the highway via a seagull intersection located close to the service road. The Headland Road option could be moved the appropriate distance north connecting into the road leading to the Crystal Waters subdivision. This would satisfy the required distances between highway turnoffs. The road behind residence number 10 could be used as an access road for Sapphire Crescent residents to connect to the highway via a safer seagull intersection in front of or near to the service station. Only slow moving private vehicles in vastly reduced numbers would be using the road behind number 10 Sapphire Crescent. The option to close off Sapphire Crescent to direct access to the highway is a good one.</p>	Request for relocation and reorganisation of Sapphire access points will be further investigated and considered at the Value Engineering Workshop and during selection of Preferred Option.

1.15	Sapphire: Extend the proposed two-way service road south to Sapphire from the proposed interchange to Nautilus/Pelican Resorts and (possibly further south to Korora) with a simple underpass so that as many junction and seagull turns as possible are eliminated. (Refer Appendix C diagram)	Provision of Service Road to be considered at Value Engineering Workshop and during selection of Preferred Option. Provision of underpass likely to be very difficult to build under traffic and thus expensive.
	Requests for underpass next to the existing culvert for Hayes Creek at Sapphire. (Refer Appendix C diagram.)	Provision of underpass likely to be very difficult to build under traffic and thus expensive.
1.16	Sapphire: Extend the proposed two-way service road south to Sapphire from the proposed interchange to Nautilus/Pelican Resorts and (possibly further south to Korora) with a simple underpass so that as many junction and seagull turns as possible are eliminated. (Refer Appendix C diagram)	As above
	Requests for underpass next to the existing culvert for Hayes Creek at Sapphire. (Refer Appendix C diagram.)	As above
1.17	Sapphire: Additional access road on eastern side of highway to Sapphire Crescent and Service Station (Refer Appendix D diagram)	Provision of Service Road to be considered at Value Engineering Workshop and during selection of Preferred Option.
1.18	Sapphire: Noise and visual mitigation measures for Sapphire Crescent (Refer Appendix E diagram)	Proposal for existing Sapphire Crescent intersection to be closed and mounded to be investigated in conjunction with alternative intersection proposals and interchange deliberations.
1.19	Claim that respondent's property will have no access when travelling from the north.	Issue of access to respondent's property to be investigated. However, in some instances, vehicles will not be able to turn right into individual properties and will need to go to the next interchange / intersection, do a U-turn and come back.
	Respondent supports Headlands Road interchange but with an underpass at Hayes Creek. Respondent says property, which is isolated from the Old Coast Road, could gain access to an underpass at Hayes Creek, giving much safer highway access.	Provision of underpass likely to be very difficult to build under traffic and thus expensive.

1.20	Flooding issues:	
	Respondent says two properties susceptible to flooding. Road design taking drainage into account therefore will be important.	Flooding issues will be investigated during refinement of Concept Design.
1.21	Service road on western side of highway:	
	Request for two-way service road between Old Coast Rd and Wakelands Rd - whatever interchange option is decided.	Provision of a service road on the western side of the Highway will be further investigated and considered at the Value Engineering Workshop and during selection of Preferred Option.
1.22	Service road on western side of highway:	
	Request for two-way service road between Old Coast Rd and Wakelands Rd - whatever interchange option is decided.	As above.
1.23	Maccues Road:	
	<p>Request to leave present entrance at respondent's property intact. Opposition to proposed altered location of the entrance to Maccues Road from the highway and the encroachment on the property. Request that if proposed new entrance is insisted upon, then a vertical retaining wall be constructed beside the highway which would then allow Maccues Road to fit between the highway and the present boundary of the property, without resuming any land.</p> <p>Further submission requesting further noise reduction measures and consideration of the placement of a noise barrier in front of residence as a result of the realignment of Maccues Road.</p>	<p>The eastern end of Maccues Road is required to be realigned as proposed to provide adequate separation between the Maccues Road / Pacific Highway intersection and the northbound exit ramp for the Moonee Beach interchange. Modifications to Maccues Road will be investigated during refinement of Concept Design.</p> <p>Noise mitigation measures will be considered as part of overall acoustic assessment.</p>

2. Moonee to Woolgoolga section

RESPONDENT/S IDENTIFICATION No.	ISSUES RAISED	RESPONSE
2.1	<p>Tiki Road, Moonee:</p> <p>Many requests for a seagull intersection at Tiki Rd or a u-turn bay at the Coffs Harbour Zoo or an overhead bridge just north of the Coffs Harbour Zoo and a service road on both sides of the highway for Heritage Park Estate, Lake Russell Estate, the Zoo and Tiki Rd.</p>	<p>Request for a u-turn bay at the Coffs Harbour Zoo to be investigated. The location for a future grade-separated interchange between Bucca road and Smiths Road will also be investigated.</p> <p>The provision of a connecting road between Heritage Park Estate and Lake Russell Estate will be investigated in consultation with Council if Options B, C or D are selected as the Preferred Option.</p>
2.2	<p>Option A:</p> <p>Option could be routed to the eastern side of Mary's Waterhole – i.e. Boyds Road to Slaters Crossing. This would straighten the line and give gentle slope to the southern approach of that ridge line.</p>	<p>The terrain to the east of Mary's Waterhole is not suitable for a high standard dual carriageway highway.</p>
2.3	<p>Option A:</p> <p>Decrease gradients by 0.5% to reduce travel time and costs for heavy vehicles.</p> <p>Provide for a connecting road back to Woolgoolga, preferably a connection near Bucca Road.</p>	<p>Decreasing gradients by 0.5% in Option A as suggested would make only a small difference to travel times and costs for heavy vehicles but could significantly increase construction costs due to increased quantities of earthworks as a result of deeper cuttings and higher fill embankments.</p> <p>The benefits of any reductions in travel times and vehicle operating costs would be offset by increased construction costs and the relativities between the options in terms of economic performance would not alter significantly.</p> <p>Vertical alignment of Option A would be finetuned if it was selected as the Preferred Option.</p> <p>Connecting road back to Woolgoolga not considered viable due to limited demand.</p>

	<p>Provision for traffic at the northern connection of Option A to turn south onto the bypass ie so that local traffic south of Mullaway won't have to use the existing highway to head south but will be able to drive north to the bypass and then turn onto it to head south.</p>	<p>The provision of a southbound on-ramp at the northern connection of Option A was not considered previously due to limited demand and the good standard of the existing highway south of Mullaway.</p> <p>The warrant for this facility will be further considered during refinement of the Concept Design if Option A is selected as the Preferred Option.</p>
	<p>Provision for traffic at the southern connection of Option A to turn north onto the bypass ie so that local traffic north of Moonee won't have to use the existing highway to head north but will be able to drive south to the bypass and then turn Provision of rest area along bypass.</p>	<p>The provision of a northbound on-ramp at the southern connection of Option A was not considered previously due to limited demand and the good standard of the existing highway north of Moonee.</p> <p>The warrant for this facility will be further considered during refinement of the Concept Design if Option A is selected as the Preferred Option.</p>
<p>Options B1 and B2:</p>		
	<p>Provide for a connecting road back to Woolgoolga.</p>	<p>Connecting road back to Woolgoolga not considered viable due to limited demand.</p>
	<p>Provision for traffic at the northern connection of Options B1 and B2 to turn south onto the bypass ie so that local traffic south of Mullaway won't have to use the existing highway to head south but will be able to drive north to the bypass and then turn onto it to head south.</p>	<p>The provision of a southbound on-ramp at the northern connection of Options B1 and B2 was not considered previously due to limited demand and the good standard of the existing highway south of Mullaway.</p> <p>The warrant for this facility will be further considered during refinement of the Concept Design if Option B1 or B2 are selected as the Preferred Option.</p>
	<p>Provision for traffic at the southern connection of Options B1 and B2 to turn north onto the bypass ie so that local traffic north of the Gun Club won't have to use the existing highway to head north but will be able to drive south to the bypass and then turn onto it to head north.</p>	<p>The provision of a northbound on-ramp at the northern connection of Options B1 and B2 was not considered previously due to limited demand and the good standard of the existing highway north of Moonee.</p> <p>The warrant for this facility will be further considered during refinement of the Concept Design if Option B1 or B2 are selected as the Preferred Option.</p>

	Option C:	
	Provide for a connecting road back to Woolgoolga.	Connecting road back to Woolgoolga not considered viable due to limited demand.
	If a single interchange were built for Emerald Beach and Emerald Heights/Sandy Beach in a location near the Shell Service Station or near the Gun Club, with service roads from the interchange to Graham Drive south and to Fiddamans Road, this would be better than an intersection or flyover bridge at Graham Drive south and at Fiddaman Rd.	The provision of a single grade-separated interchange to service Emerald Beach and Emerald Heights / Sandy Beach will be considered during refinement of the Concept Design if Options C or D are selected as the Preferred Option.
Support for a new back road from Lake Russell to Heritage Park to Bucca Road and close off highway access to Lake Russell and Heritage Park.	<p>The provision of a connecting road between Heritage Park Estate, Lake Russell Estate and Bucca Road will be investigated in consultation with Council if Options B, C or D are selected as the Preferred Option.</p> <p>The location for a future grade-separated interchange between Bucca road and Smiths Road will also be investigated if Options B, C or D are selected as the Preferred Option.</p>	

<p>2.4</p>	<p>Option D:</p> <ul style="list-style-type: none"> Alternative marked up map for Option A using the colour shaded topographical height maps provided. These are much easier to read than contour maps and (show) the commonsense, obvious routes which, based on the information provided to date, may significantly improve Option A's cost-effectiveness. Some routes may involve a very short tunnel but if tunnelling is \$70-80 million dollars per km as quoted, then a 200m long tunnel to get through the peak of some of the highest spots may only be \$14-16 million dollars and appears affordable in the overall cost of the project. (Refer Appendix F1 and F2 diagrams) 	<p>Option A was developed around a community based alignment suggestion. The original route as provided in topographic map format was used as a seed for the Quantm software, which produced numerous alignments that were used to establish the original corridor for Option A.</p> <p>Other alignments outside this corridor were rejected on the basis that they were not cost effective or were not practical from an engineering / road design perspective.</p> <p>In the case of Options E and F as suggested, Option E is a longer and more costly version of the Option B alternatives with higher environmental impact, as it traverses the face of the high country escarpment over its full length. The two alignments nominated for Option F are either a combination of Options A and B (easterly sub-deviation) or a longer version (westerly sub-deviation) of those within the original corridor.</p> <p>In relation to tunnelling, it is improbable that any alignment through this very high / rugged terrain would allow a short tunnel (viz. 200 metres) to substantially reduce earthworks and improve cost effectiveness. All alignments for Option A feature multiple (up to 12) cuttings, typically 30 metres deep and 300 metres long.</p>
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<p>2.5</p>	<p>Option D:</p> <p>Proposed an alternative scheme for Option D through Woolgoolga. The main features of the proposal are:-</p> <ul style="list-style-type: none"> • The erection of two overpasses north and south of Woolgoolga outside the residential areas, i.e. to the south of Bosworth Road and to the north of the Woolgoolga High School. • Lowering of the existing Highway between Arkan Avenue and Clarence / Pullen Streets • Closing of the Highway intersection at Clarence / Pullen Streets. • Erection of a cycleway and footbridge overpass at Clarence / Pullen Streets intersection with the Pacific Highway. • Provision of a two way service road on the eastern side of the highway joining River Street and Bosworth Rd. • Extension of the road proposed by the RTA from Barkhut Estate crossing Woolgoolga Creek to Pullen Street south to the proposed overpass near Bosworth Road. • Provision of a two way service road, on the western side of the Highway, from Newmans Road north to the proposed high school overpass. • Provision of a two way service road, on the eastern side of the Highway, from to the proposed high school overpass south to Clarence Street. • Left turn only into and out of Clarence and Pullen Streets. • North bound left turn only at Newmans Road. • Utilisation of the old Pacific Highway to provide a service road connecting Bark Hut Road to the proposed high school overpass. • Safety Beach to access Woolgoolga via a service road on the eastern side of the Highway to the Woolgoolga High School then south to Clarence Street. 	<p>The proposal will be investigated during the refinement of the Concept Design if Option D is selected as the Preferred Option.</p>
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	Erection of a highway overpass 600 metres south of Fiddamans Road to access Emerald Beach and Emerald Heights via roads west and east respectively.	The provision of a single grade-separated interchange to service Emerald Beach and Emerald Heights / Sandy Beach will be considered during refinement of the Concept Design if Options C or D are selected as the Preferred Option.
	The closing of both the north and south Sandy Beach turns (Graham Drive) and the purchase of suitable land in the vicinity of the existing Diamond Head Drive overbridge for the construction of on/off north/south access for the Highway.	The provision of a grade-separated interchange at the Diamond Head Drive overbridge was investigated and abandoned due to the impact on adjacent residential properties.
2.6	Sandy Beach: Close Graham Drive North and South. Construct on and off ramps at overhead bridge on Diamond Head Drive, similar to Sawtell Road exits on Lyons to Englands Rd Upgrade. Seagull intersection not a safe option when accessing Sandy Beach.	The provision of a grade-separated interchange at the Diamond Head Drive overbridge was investigated and abandoned due to the impact on adjacent residential properties.
2.7	Sandy Beach: <ul style="list-style-type: none"> Remove the northbound off-ramp and the southbound on-ramp and Hearnese Lake access road away from Hearnese Lane and eastern side of existing highway. Move it all to the southbound off-ramp area with service roads parallel to the highway for Hearnese Lane and Graham Drive North. (Refer Appendix G diagram) 	The interchange arrangements for Option C would be optimised in conjunction with the Preliminary Design in the event that Option C is adopted as the preferred option. The suggestion nominated has some merit and would be further investigated if Option C is preferred. However, conflicts between the western service road (2-way) and the northbound off ramp as shown would need to be addressed.

<p>2.8</p>	<p>Option D: No study has been carried out on the effect on by-roads if Option D is chosen. In the Woolgoolga Reference Scheme, Newmans Road is closed to the highway but is used by 16 other streets at present – Bennetts Road, Strawberry Close, Plunket Place, Vista Close, McIntosh Crescent, Cedar Tree Court, Sassafras Close, Gresham Drive, Wolstenholme Drive, Shearer Drive, Nagle Drive, Norman Close, Palmer Road, Newton Close, St Andrews Drive, Crampton Close. Suggestion for a bridge over Woolgoolga Creek to connect Newmans Road to Nash Street. If an upgrade of the existing highway is the Preferred Option, open Newmans Road to the highway, close Dalgety and Knox Streets. These streets can still go their normal way around Moore Street and go out Pullen Street, past McKay Street.</p>	<p>Access into, out of and throughout the township was a major consideration during the preparation of the schemes for Woolgoolga.</p> <p>Newmans Road is closed at the Highway in the Woolgoolga Reference Scheme due to safety issues associated with the restricted sight distance to the south. Dalgety and Knox Streets are both closed at the Highway in the Reference Scheme.</p> <p>However, with the alternate scheme, access is provided at the intersection of Newmans Road and the service road on the western side of the Highway as the lower speed limit on this service road will enable adequate sight distance to be provided at the intersection. Under the alternate scheme, access is provided onto the service road at both Dalgety and Knox Streets.</p>
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APPENDICES

APPENDIX A

← To Moonce →

← Coff's Harbour



Pacific Highway 2x2



Sound Barrier

Service Road (Two-way)

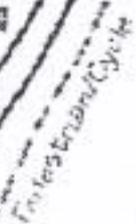
→ To Interchange



Pelican/Nautilus

Sapphire Apts.

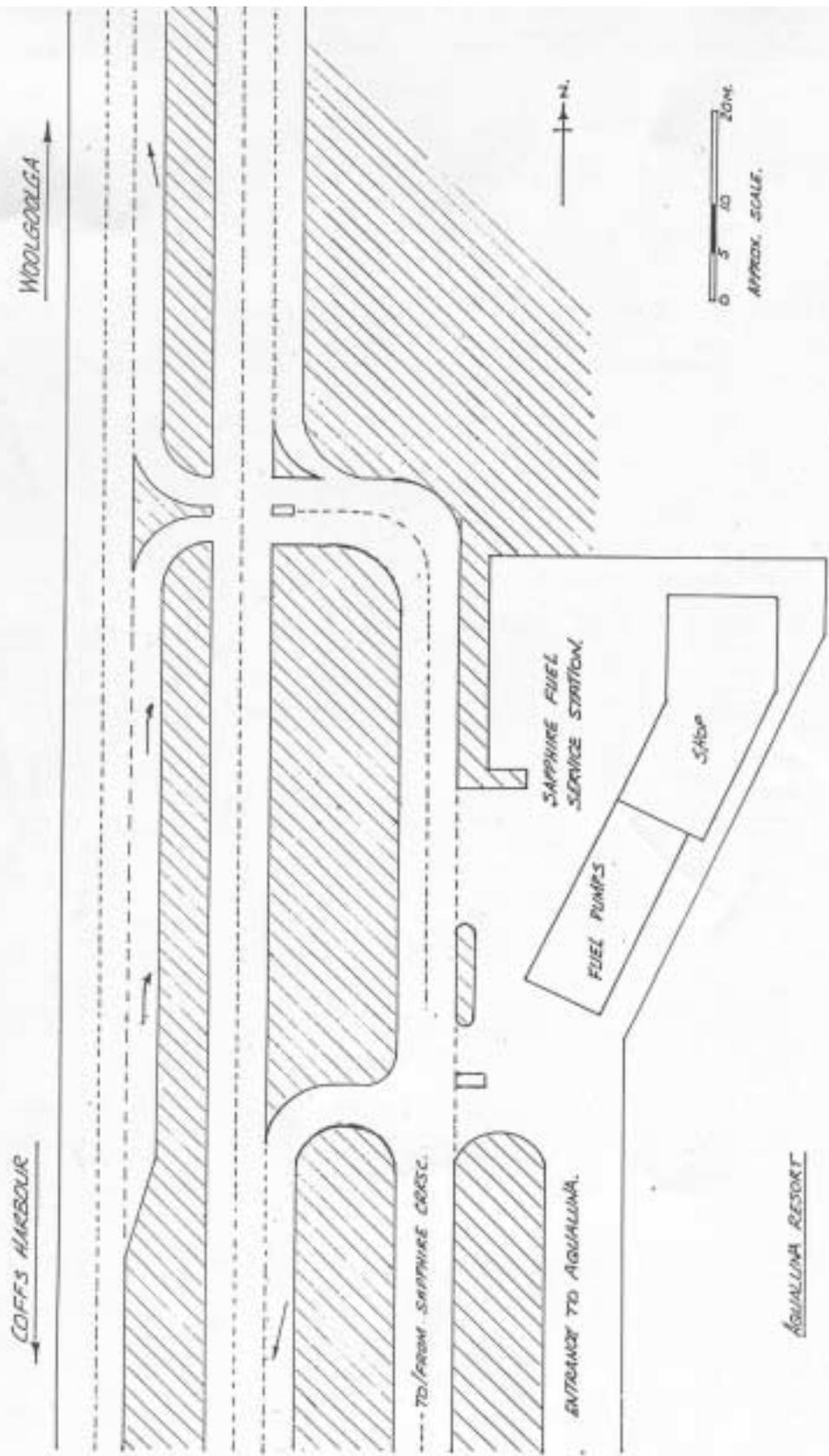
Shell S. Stn.



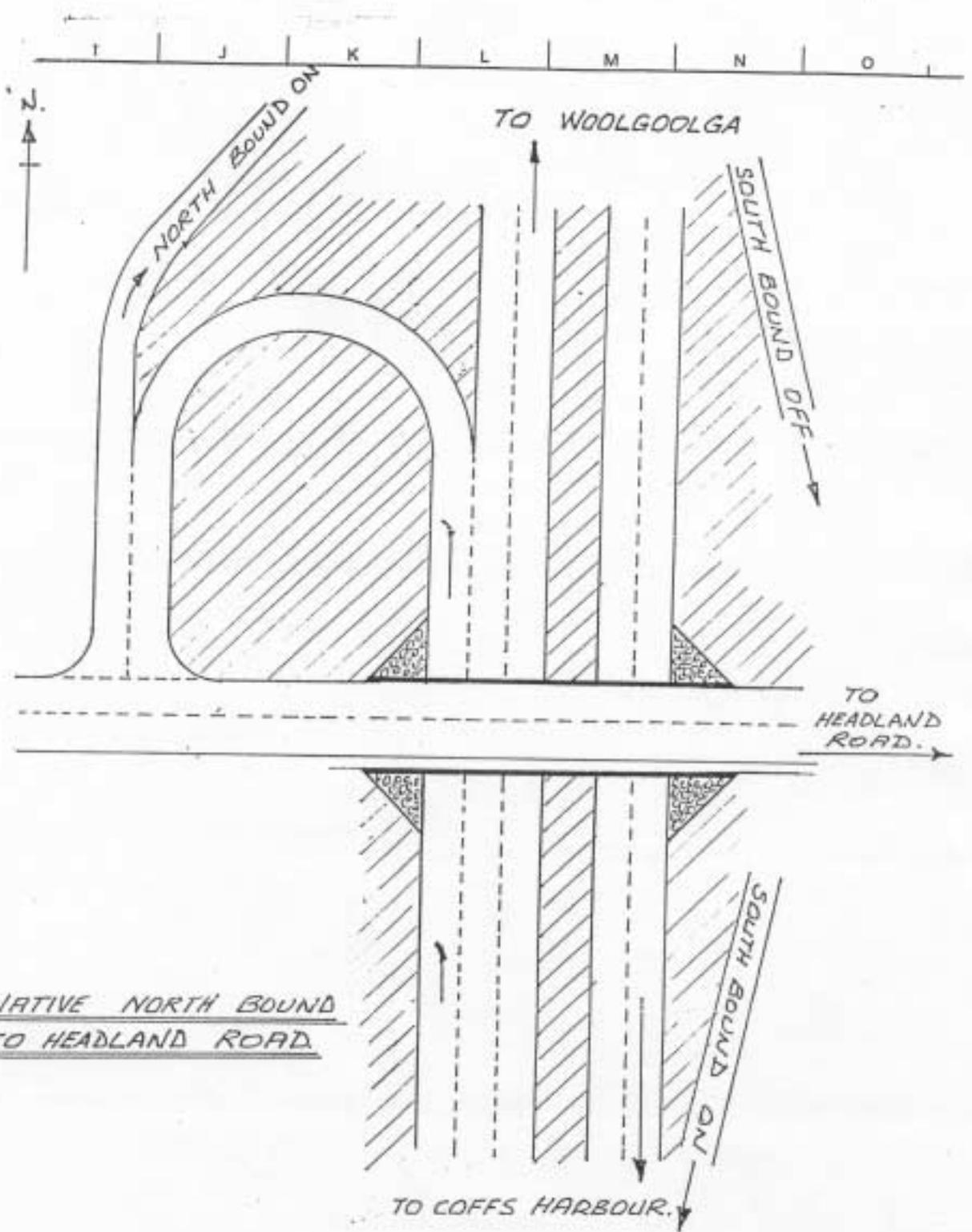
Footbridge

APPENDIX B1 & B2

ALTERNATIVE ACCESS AT SAPPHIRE SOUTH



DATE	PROJECT	NO. 1241	REVISION	DATE
DESIGNED BY	CHECKED BY	APPROVED BY	DATE	SCALE
1	2	3	4	5
SHEET NO.			SHEET TOTAL	
PROJECT NO.			SHEET TOTAL	
DRAWING TITLE			SHEET TOTAL	
DRAWN BY			SHEET TOTAL	
CHECKED BY			SHEET TOTAL	
APPROVED BY			SHEET TOTAL	
DATE			SHEET TOTAL	

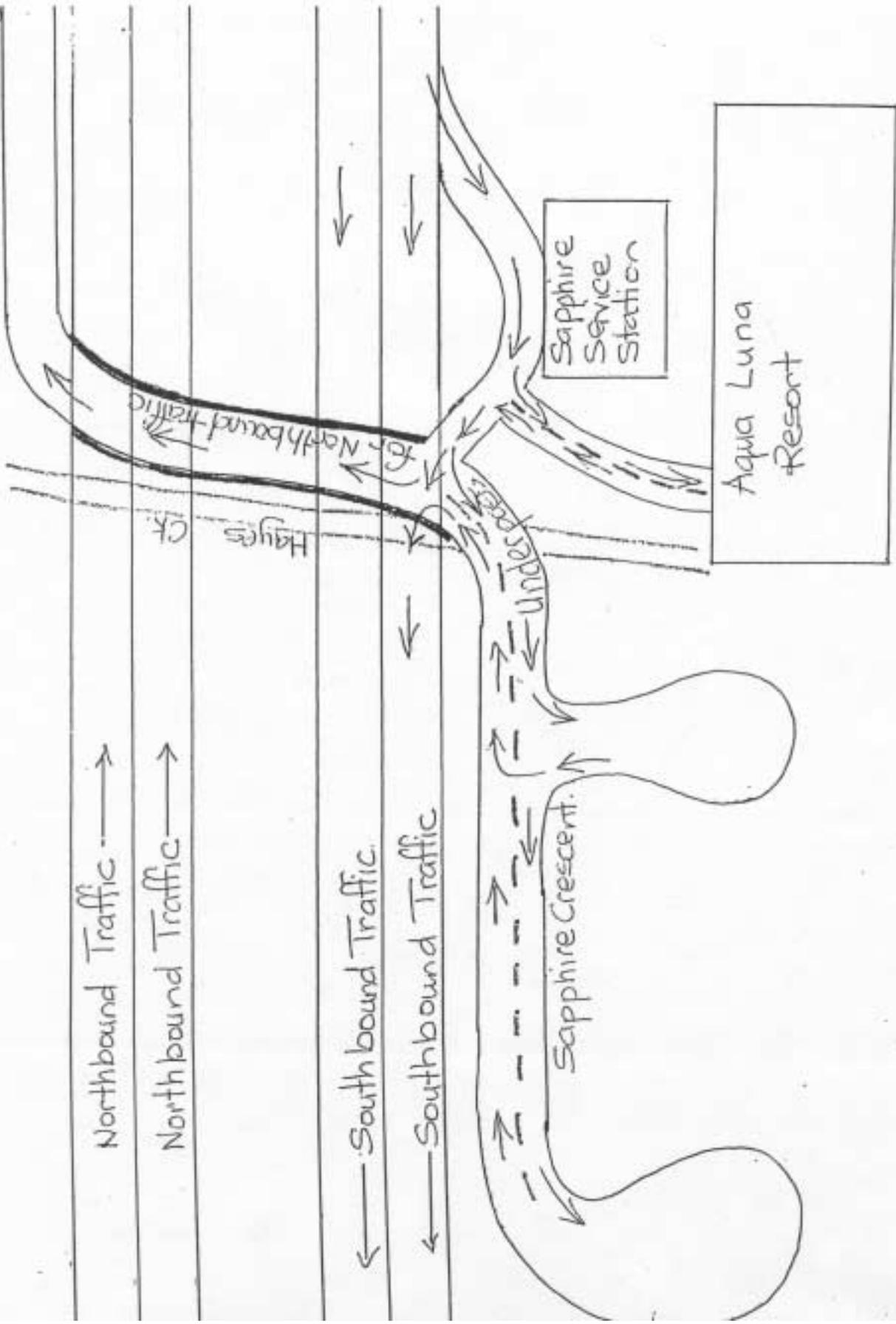


ALTERNATIVE NORTH BOUND
EXIT TO HEADLAND ROAD

SCALE	DRAWN	DATE	ENGINEER	Put	Revision	Drawn/Out
CHECKED		CHECKED				Distortion No.
						Size
						A3

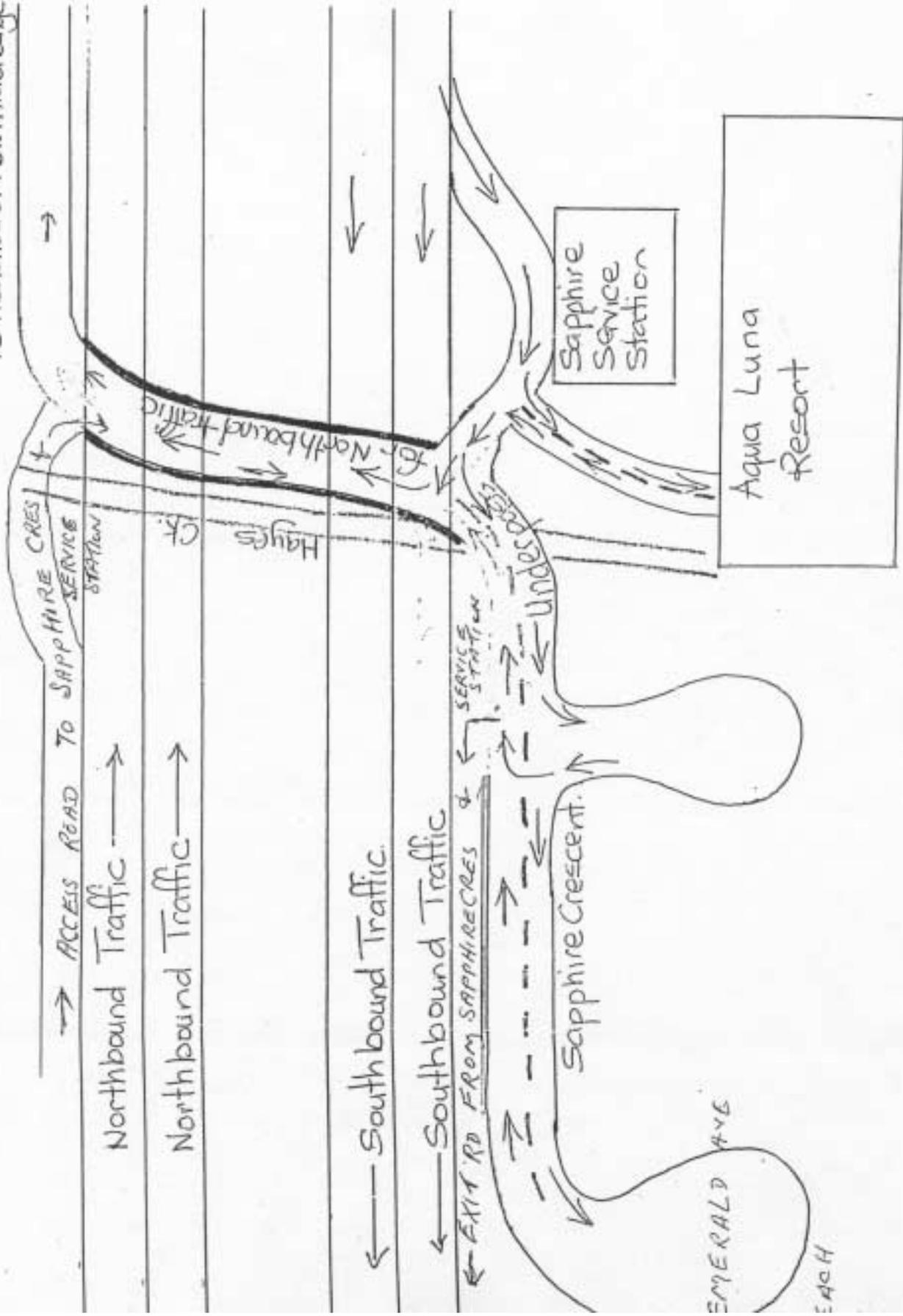
APPENDIX C

10 HEADLAND Rd. INTERCHANGE



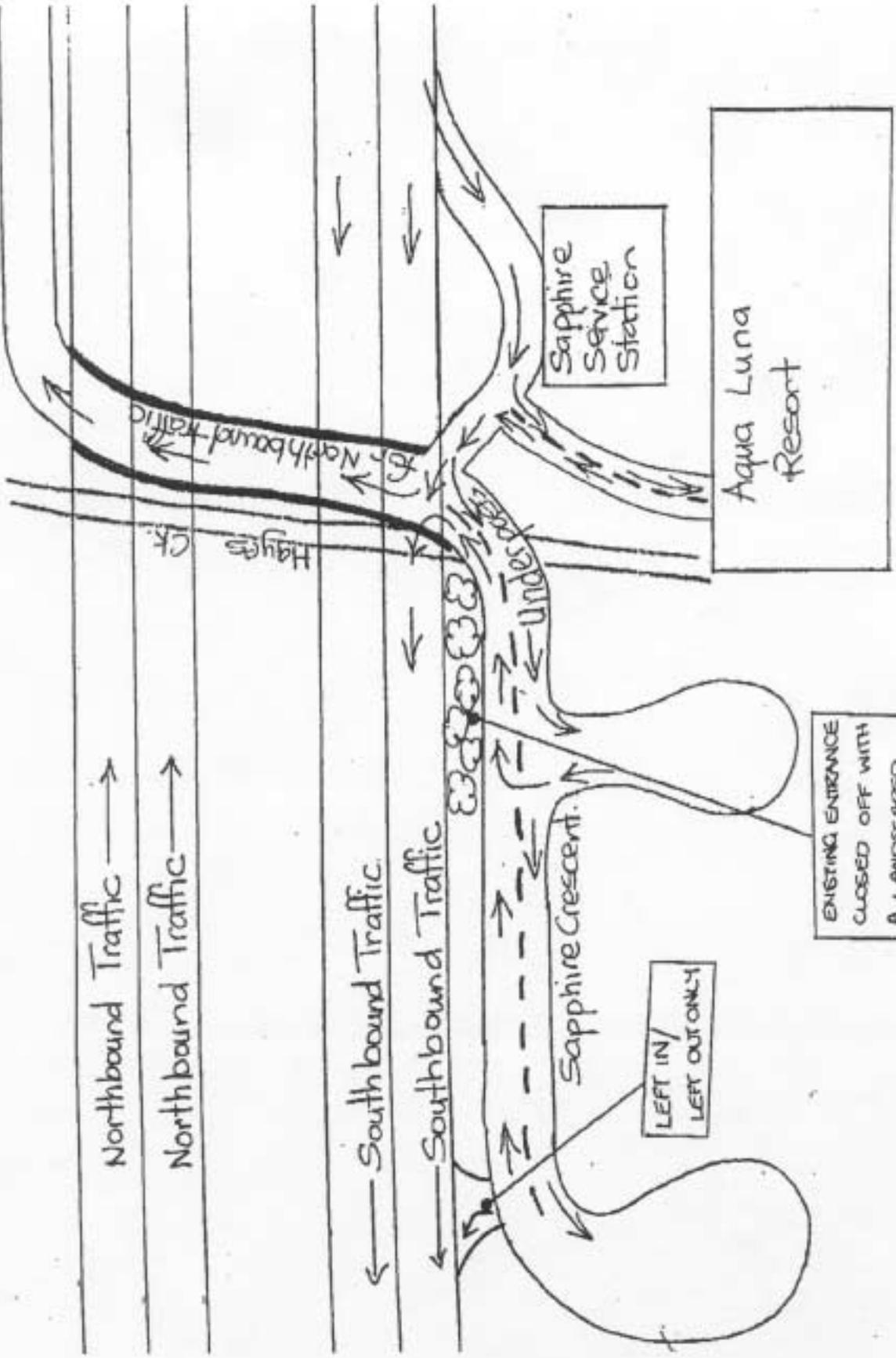
APPENDIX D

To Headland Kd. Interchange



APPENDIX E

To Headland Rd. Interchange



Northbound Traffic →

Northbound Traffic →

← Southbound Traffic

← Southbound Traffic

Underpass

Sapphire Crescent

LEFT IN/
LEFT OUT ONLY

EXISTING ENTRANCE
CLOSED OFF WITH
A LANDSCAPED
MOUND.

Sapphire
Service
Station

Aqua Luna
Resort

Hayes
Ck.

APPENDIX F1 & F2



FIGURE 4.6
GROUND ELEVATION MAP



APPENDIX G

OPTION C

