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# Table of contents

**Executive summary**
- Background
- Workshop purpose and objectives
- Workshop activities
- Workshop outcomes
- The Gerringong access workshop stream:
- The Berry access workshop stream:

1.0 **Introduction**
- 1.1 Workshop background
- 1.2 Workshop purpose and objectives
- 1.3 Workshop methodology
- 1.4 Workshop report

2.0 **Common project information and analysis**
- 2.1 Strategic context presentation
- 2.2 Project background and overview presentation
- 2.3 Kiama Municipal Council perspective
- 2.4 Shoalhaven City Council perspective
- 2.5 Community participation overview
- 2.6 The ‘problem situation’
- 2.7 Access objectives for Gerringong and Berry
- 2.8 Givens and assumptions we are working within

3.0 **Gerringong access assessment**
- 3.1 Weighting of assessment criteria
- 3.2 Access option description presentation
- 3.3 Additional options to be considered as a result of community feedback
- 3.4 Access option impacts on businesses presentation
- 3.5 Access options for evaluation
- 3.6 Assessment of the access options
- 3.7 Strategic relative cost estimates
- 3.8 Summary of option assessment rankings and relative cost estimates
- 3.9 Recommending a direction
- 3.10 Recommendation of the workshop group
- 3.11 Suggested improvements
- 3.12 Conclusion drawn
- 3.13 Where to from here?

4.0 **Berry access assessment**
- 4.1 Weighting of assessment criteria
- 4.2 Access option description presentation
- 4.3 Southbound combination options
- 4.4 Northbound combination options
- 4.5 Southbound combination access options for evaluation
- 4.6 Assessment of the southbound access options
- 4.7 Northbound combination access options for evaluation
- 4.8 Assessment of the northbound access options
- 4.9 Strategic relative cost estimates
- 4.10 Summary of option assessment rankings and relative cost estimates
- 4.11 Checking the logic of the combinations, ranking and costs
- 4.12 Suggested improvements
- 4.13 Recommendation of the workshop group
- 4.14 Conclusion drawn
- 4.15 Where to from here?
Appendix A  Participants list  A-1
Appendix B  Gerringong access options  B-1
Appendix C  Berry access options  C-1

List of Tables
Table 3-1  Gerringong weightings for the assessment criteria  14
Table 3-2  Workings for relative assessment criteria  14
Table 3-3  Accident statistics  16
Table 3-4  Evaluation matrix – qualitative evaluation of the access options at Gerringong against the assessment criteria  30
Table 3-5  Gerringong options relative construction costs  31
Table 3-6  Value matrix  31
Table 4-1  Berry weightings for the assessment criteria  36
Table 4-2  Workings for relative assessment criteria  36
Table 4-3  Evaluation matrix - qualitative evaluation of the southbound combination access options at Berry against the assessment criteria  50
Table 4-4  Evaluation matrix - qualitative evaluation of the northbound combination access options at Berry against the assessment criteria  52
Table 4-5  Berry options relative construction costs  53
Table 4-6  Value matrix  54
Table 4-7  Combination rankings and costs  55

Table of Figures
Figure 2.1  Study process  4
Executive summary

Background

Due to the significant changes in land-use and population in the region and a review of current planning, traffic and safety conditions, the NSW Roads and Traffic Authority (RTA) is planning a program to upgrade the Princes Highway between Gerringong and Bomaderry. A route options public display took place from 26 November 2007 to 29 February 2008 and a value management workshop was held in May 2008 as part of the process for selecting a preferred option. Consequently a preferred option was announced by the NSW Government on 13 October 2008.

During the route options display and selection process, community feedback highlighted the importance of the access arrangements for Berry and Gerringong townships to the community.

As a result, a consultation process for access arrangements was announced and commenced concurrently with the release of the preferred option on 13 October 2008. A number of access arrangement options for both towns were put on public display for community comment.

An option assessment workshop using a value management approach was seen as the appropriate tool to bring together a range of stakeholders including community participants, Councils, various agencies and organisations as well as the project team and the RTA to review the access options for the two towns and making recommendations to progress the project planning and investigations.

The Australian Centre for Value Management (ACVM) was commissioned to facilitate and report on the workshop which was held in Nowra on 18 and 19 November 2008.

The option assessment workshop recommendations for the access arrangements to Gerringong and Berry are one of the inputs into the process for determining the preferred access options for Gerringong and Berry.

Workshop purpose and objectives

The purpose of the workshop was to obtain a common understanding of the project and its objectives, review the work undertaken to date and to make recommendations to progress planning for the access options for Gerringong and Berry to the next stage of development.

The objectives of the workshop were:

- To obtain a common understanding of the short-listed access arrangements to both Gerringong and Berry as part of the Gerringong to Bomaderry Princes Highway upgrade.
- To examine how the access options meet the access objectives and, if appropriate, make recommendations regarding access option(s) and/or appropriate areas for further investigation.

This report has been compiled by ACVM and seeks to provide an objective overview of the project aspects discussed in the workshop and the outcomes formulated by the two workshop streams who worked through the access arrangements for Gerringong and Berry.
**Workshop activities**

The workshop process builds on the perspectives as well as the detailed and specialist knowledge of the workshop participants then structures the analysis and access option review from a functional base (ie what must the project achieve with regards to access to be successful and then assess the options against these as well as the project costs).

Initially, the whole workshop group was presented with background information including the context of the overall project, access arrangements, planning undertaken to date and overall community feedback in relation to access arrangements to Gerringong and Berry.

The ‘problem situation’ for the two towns with regards to access was discussed and the access objectives (ie what the project must achieve with regards to access to be successful) were developed and agreed. The project facts (givens and assumptions) within which the project is being planned were identified, shared and challenged from various perspectives.

Using this information as prompts, assessment criteria were developed, amended, added to and finally agreed to by the whole workshop group.

At this stage, the workshop group divided into two streams for the remainder of the workshop. One stream focussed on the Gerringong access arrangements and a second stream focussed on the Berry access arrangements.

For each of the two streams, participants weighted the previously developed assessment criteria, reviewed the developed access arrangement options and discussed opportunities and considerations.

The two streams then qualitatively evaluated the access options against the developed assessment criteria as well as the strategic cost estimates.

The workshop discussions led the group to conclusions, outcomes and issues to be addressed as outlined below.

**Workshop outcomes**

By the end of the workshop, the participants had:

**As a whole the group**

- **Agreed** the access objectives for Gerringong and Berry (ie what the project must do with regards to access to Gerringong and Berry to be successful). They are listed below:

Access objectives:
- Provide safer use for all users of the network (including pedestrians and cyclists).
- Complement local movement patterns and the social network.
- Improve access during flooding.
- Consider the flow and use of local roads for all.
- Provide appropriate emergency services access.
- Cater for general access vehicles (ie vehicles that are legally able to use the road including heavy vehicles, legally sized vehicles, etc).
- Minimise visual intrusion (to and from) the towns.
- Facilitate tourism by providing easy access.
- Provide easily legible and intuitive access for all users.
- Facilitate business and employment opportunities.
- Mitigate environmental impacts including noise, flora, fauna, dust, etc.
- Provide access amenity (including for tourists) to at least the current or a better level of service.
- Be planned right the first time.
- Accommodate interim traffic flow during construction.
- Consider impacts of climate change.
- Blend / complement environment and amenity of the location (of the town).
- Minimise the impact on heritage elements (both Indigenous and European).
- Minimise the need for U-turns on the highway.
- Minimise the impact on social amenity (cohesion).
- Provide value for money (including minimum ongoing maintenance).
- Provide sufficient access for the surrounding community.
- Allow the objectives of the highway upgrade to be maintained.

- **Reflected** on the ‘givens’ and assumptions within which the project is being planned and challenged, and amended and added to these where necessary.

- **Identified** qualitative assessment criteria which reflected the access objectives and could be used to differentiate and evaluate the options. The assessment criteria are listed below:
  - Provide safer use for all users of the network (including pedestrians and cyclists).
  - Complement local movement patterns and the social network.
  - Improve access during flooding.
  - Provide appropriate emergency services access.
  - Cater for general access vehicles (ie vehicles that are legally able to use the road including heavy vehicles, legally sized vehicles, etc).
  - Minimise visual intrusion (to and from) the towns.
  - Provide easily legible and intuitive access for all users.
  - Facilitate business and employment opportunities.
  - Mitigate environmental impacts including noise, flora, fauna, dust, etc.
  - Provide access amenity (including for tourists) to at least the current or a better level of service.
  - Accommodate interim traffic flow during construction.
  - Minimise the impact on heritage elements (both Indigenous and European).
The Gerringong access workshop stream (refer to Appendix B for Gerringong access sketches)

- **Weighted** the qualitative assessment criteria which reflected the access objectives and could be used to differentiate and evaluate the options to reflect the importance of various criteria to Gerringong. (This would be different to the importance placed on them by the Berry access workshop stream).

- **Reviewed** the access options developed by the project team, options G1, G2 and G3 and discussed their opportunities and considerations. Also reviewed options developed as a result of RTA review and community feedback, options G2/6, G2/8 and G3/5 and again discussed their opportunities and considerations.

- **Agreed** that some of the options reviewed were significantly inferior to other options available, did not warrant further assessment and should be discarded. The options discarded by the group were:
  - Option G2 as it would bring heavy vehicle traffic into Gerringong via Fern Street requiring an upgrade of Fern Street (for pavement strengthening) and would introduce undesirable safety, noise and amenity issues to the north side of town. Further, the variations developed by the study team in response to community feedback (ie option G2/6 and option G2/8) perform better than option G2 while maintaining its benefits.
  - Option G3 as it would bring heavy vehicle traffic into Gerringong via Fern Street requiring an upgrade of Fern Street (for pavement strengthening) and would introduce undesirable safety, noise and amenity issues to the north side of town. Further, the variation developed by the study team in response to community feedback (ie option G3/5) performs better than option G3 while maintaining its benefits.

- **Evaluated** the four access options being options G1, G2/6, G2/8 and G3/5 qualitatively against the assessment criteria and then compared their rankings with the relative strategic cost estimates.

- **Recommended** that option G2/8 move forward to the next stage of project development. This was based on the qualitative assessment of criteria which reflected the access objectives of the area (that the project must achieve to be successful) and its relative strategic cost estimates compared to the other options.

- **Highlighted** reasons for recommending Option G2/8 as it:
  - Best met the values / assessment criteria and best met the highest weighted value being ‘safety’.
  - Best met the balance of social, economic, environmental and functional considerations.
  - Provides the best value for money.
  - Best meets the needs of the community and is the best match with community support (ie retains two access points and maintains the cohesion of the town movements).
  - Maintains the business viability of the town.
  - Addresses access to Sims, Willowvale and Rose Valley roads.

However the recommendation was subject to satisfactory resolution of issues identified in the workshop as listed below:

- Confirming the feasibility of the option through development of concept design.
- Determining the constructability requirements (northern and southern end of town) and highlighting the potential temporary closure of Fern Street during construction as being an important issue for the town.
- Being able to adequately address the environmental and heritage constraints of the option (ie Renfrew Park, significant trees, Omega Flat, etc).
- Resolving the loop or ramp options at the Belinda Street end.
- Undertaking further cultural and archaeological assessment (Indigenous and European).
- Reviewing the cost of the option taking into account the issues raised.
- Communicating the workshop outcomes and rationale. This needs to be a priority and presented to the community to demonstrate transparency.
- Explaining clearly to the community the next steps in the process and how the community will be involved and contribute.

- **Identified** suggested improvements to be considered as planning proceeds.
- **Drew** further conclusions at the end of the workshop such as:
  - Community feedback to the original access options has been instrumental in the development of the extra options assessed and in determining direction(s) for further development.
  - The workshop process has been collaborative, involved all participants and has been transparent in its approach. Everyone has contributed and participants were satisfied with the workshop process and the outcomes.
  - It was felt that the process was culturally representative and the outcomes met the needs of the stakeholders. Everyone worked together to achieve the outcomes.
  - Community participation and consultation works to provide better outcomes.
  - Follow up communication to the broader community through the project team should be a priority to support the process and the outcomes reached.
  - The background information provided by the project team and the community feedback was professionally handled and well presented.

- **Presented** an outline of the process and direction for the project to move forward from here including the need to:
  - Acknowledge the agreement and acceptance of the assessment criteria.
  - Acknowledge acceptance of the findings and conclusions of the workshop.
  - Communicate the findings to the wider community through community participant nominees, project website, media release and e-mail to registered stakeholders.
  - Prepare and publish the workshop report.
  - Immediately notify potential landowners directly affected.
  - Further consider the southern interchange alternative arrangements on option G2/8.
  - Further consider environment and heritage impacts of the northern interchange arrangement on option G2/8.
  - Communicate to the community that additional options were introduced to the assessment process because of RTA review and community feedback and confirm the next steps and timing of the project’s development.
  - Consider further community consultation in relation to the direction(s) for further development.
The Berry access workshop stream:

- **Weighted** the qualitative assessment criteria which reflected the access objectives and could be used to differentiate and evaluate the options to reflect the importance of various criteria to Berry. (This would be different to the importance placed on them by the Gerringong access workshop stream).

- **Reviewed** the access options developed by the project team and **discussed** their opportunities and considerations being:
  - southbound combination options B9/B4, B8/B4, B9/B5 and B8/B5.

- **Agreed** that some of the options reviewed were significantly inferior to other options available and did not warrant further assessment and should be discarded. The options discarded by the group were both from the northbound combination options being any option combined with option B3 because:
  - option B3 route is indirect and overly intrusive into the residential areas.
  - option B2 provides the same function with less impact.
  - option B3 impacts a greater number of properties.
  - Very strong community feedback and resistance to option B3 was received.

- **Evaluated** the four southbound combination access options being options B9/B4, B8/B4, B9/B5 and B8/B5 qualitatively against the assessment criteria and then compared their rankings with the relative strategic cost estimates.

- **Evaluated** the remaining four northbound combination access options being Options B1/B6, B2/B6, B1/B7 and B2/B7 qualitatively against the assessment criteria and then compared their rankings with the relative strategic cost estimates.

- **Recommended** that combination option B2/B7 with B5/B8 and combination option B2/B6 with B5/B8 should be moved forward for further investigation to progress the project. This was based on the qualitative assessment of criteria considered important which reflected the access objectives of the area (that the project must achieve to be successful) and its relative strategic cost estimates compared to the other options. However the recommendation was subject to satisfactory resolution of the issues identified in the workshop. The access combination option B2/B6 with B4/B8 and combination option B2/B7 with B4/B8 should only be considered further if after more detailed investigation, the recommended combinations are found to have fatal flaws. No other displayed combination of access options should be considered further.

- **Identified** suggested improvements to be considered as planning proceeds.

- **Drew** further conclusions at the end of the workshop. These are listed below.
  - All participants of the Berry access stream of the workshop gained a good understanding of the access options for Berry.
  - Berry will be a more attractive destination after the bypass is in place with any of the access options recommended.
  - The impact on Mark Radium Park remains a sensitive community issue.
  - The recommended access option(s) were those closest to the existing driving situations (in terms of location).
  - Some issues such as flooding and heritage were not resolved completely and need further investigation and measures to address them (to refine and progress the recommended option(s)).
  - A strong trend in community feedback reflected support to maintain the existing east-west traffic flow arrangement, utilising the existing highway and minimising changes to local traffic patterns and impacts to residential areas. However, support was expressed for further consideration of a northbound on-ramp at Kangaroo Valley Road to improve access during
flooding and to improve northbound access for residents west of the current Princes Highway.

- Safety was the major consideration in the assessment but was not a significant differentiator for Berry’s southbound access options.

- The second most significant consideration was the impacts to business, tourism, amenity and functionality of the town (ie the way changes of access points and the movement paths that result from these positions influence the movement of people and traffic through the town, their impact on the businesses as well as the social structures and lives of residents).

- Further investigate the following suggestions as planning proceeds:
  - A northbound on-load ramp at Kangaroo Valley Road.
  - Flood immunity at the north end of the town (ie costs, alternatives and trade-offs).
  - Modifications to option B8 that preserves the utility on Mark Radium Park (eg commence the southbound on-load ramp further to the south than presently shown).
  - Check the relative safety of the recommended options (ie access points, structures and implications of resultant travel paths and conflict points, etc).
  - Refining the ramps on options B5 and B7 to reduce impacts (eg visual and land-take).

- Presented an outline of the process and direction for the project to move forward from here. This included:
  - It is clear that as a result of consultation with the community and this workshop which enabled other stakeholders to contribute, that much of the local community does not desire changes to existing access points and traffic patterns for Berry.
  - The project team has yet to fully address flooding and heritage, and final solutions need to address these aspects.
  - Two combinations of northbound and southbound option combinations have been recommended to move forward as the combinations recommended for further detailed investigation and design development. These are combination option B2/B7 with B5/B8 and combination option B2/B6 with B5/B8.
  - Two further combinations options (being combination option B2/B6 with B4/B8 and combination option B2/B7 with B4/B8) are a fall back position only if further consideration of the recommended combination options are found to have fatal flaws; or the cost savings in the refinement of option B5 and option B7 do not achieve the extent of savings expected and the cost differentials demand one or either of these be reconsidered.
  - All remaining access options and combinations are removed from further consideration.
  - The timeline for the project will see the recommendations for access options presented for display to the community by mid 2009.
1.0 Introduction

1.1 Workshop background

Due to the significant changes in land-use and population in the region and a review of current planning, traffic and safety conditions, the NSW Roads and Traffic Authority (RTA) is planning a program to upgrade the Princes Highway from Gerringong to Bomaderry. A route options public display took place from 26 November 2007 to 29 February 2008 and a value management workshop was held in May 2008 as part of the process for selecting a preferred option.

Consequently a preferred option was announced by the NSW Government on 13 October 2008. However, the community feedback received during the display, highlighted the importance of the access arrangements for Berry and Gerringong townships to the community. As a result, the project team has developed and displayed a number of access arrangement options for Gerringong and Berry for consideration and assessment.

An option assessment workshop using a value management approach was seen as the appropriate tool to bring together a range of stakeholders including community participants, Council, various agencies and organisations as well as the project study team and the RTA to review the access options for the two towns and make recommendations to progress the project planning and investigations.

The Australian Centre for Value Management (ACVM) was commissioned to facilitate and report on the workshop which was held in Nowra on 18 and 19 November 2008. A list of participants who attended the workshop can be found in Appendix A.

The option assessment workshop recommendations for the access arrangements to Gerringong and Berry are one of the inputs into the process for determining the preferred access options for Gerringong and Berry.

1.2 Workshop purpose and objectives

The purpose of the workshop, as presented to the participants, was to obtain a common understanding of the project and its objectives, review the work undertaken to date and, if appropriate, to make recommendations to progress planning for the access options for Gerringong and Berry to the next stage of development.

The objectives of the workshop to achieve this were outlined as:

- To obtain a common understanding of the short-listed access arrangements to both Gerringong and Berry as part of the Gerringong to Bomaderry Princes Highway upgrade.
- To examine how the access options meet the access objectives and make recommendations regarding access option(s) and/or appropriate areas for further investigation.

1.3 Workshop methodology

The workshop process builds on the perspectives, as well as the detailed and specialist knowledge which resides with the workshop participants, then structures the analysis and access option review from a functional base (ie what must the project achieve with regards to access to be successful and then assesses the options against these as well as project costs).
Initially, the whole workshop group was presented with background information such as the context of the overall project, access arrangements, planning undertaken to date and overall community feedback in relation to access arrangements to Gerringong and Berry. (Further details are included in Chapter 2).

The “problem situation” for the two towns with regards to access was discussed and the access objectives (i.e., what the project must achieve with regards to access to be successful) were developed and agreed. The project facts (givens and assumptions) within which the project is being planned were identified, shared and challenged from various perspectives.

Using this information as prompts, assessment criteria were developed, amended, added to and finally agreed to by the whole workshop group. (Further details are included in Chapter 2).

At this stage, the workshop group divided into two streams for the remainder of the workshop: one stream focused on the Gerringong access arrangements and a second stream focused on the Berry access arrangements. Participants who contributed to each stream are recorded in Appendix A.

For each of the two streams, participants weighted the previously developed assessment criteria, reviewed the developed access arrangement options for their town and discussed their opportunities and considerations (information presented and supplemented by each workshop stream can be found in Chapter 3 for Gerringong and Chapter 4 for Berry).

The two streams then qualitatively evaluated the access options against the developed assessment criteria as well as the strategic cost estimates. The workshop discussions led the two groups to conclusions, outcomes and issues to be addressed as outlined at the end of Chapters 3 and 4.

1.4 Workshop report

This report has been compiled by ACVM and seeks to provide an objective overview of the project aspects discussed in the workshop and the outcomes formulated by the end of the workshop by the two workshop streams.
2.0 Common project information and analysis

The information presented in this Chapter is a consolidation of the general outputs and perceptions by the overall workshop group as they shared information about the requirements for access to the townships of Gerringong and Berry as part of the Gerringong to Bomaderry Princes Highway upgrade. This allowed participants to later make comparisons of access arrangement options based on the analysis of what the project is required to achieve with regards to access to Gerringong and Berry.

2.1 Strategic context presentation

In order to allow the participants to obtain a common understanding of the strategic context of the overall project and the access arrangements to Gerringong and Berry, Dr Graham Brisbane, RTA Project Director provided a brief overview. Key points included:

- The upgrade of the Princes Highway between Wollongong and Jervis Bay has had a very long history.
- The NSW Government has been working towards delivering a four lane highway (two lanes in each direction) for some time. With the upgrade of the North Kiama section of highway, the Oaks Flat to Dunmore and the South Nowra projects to be completed, the Gerringong to Bomaderry section of the highway will be the ‘missing link’.
- The RTA wishes to complete the project planning to be in a position to move forward into construction when funds become available. Experience suggests that the allocation of funds will come with timeline constraints. The NSW Government has made a submission to Infrastructure Australia for funding assistance for this project. So we need to be in a position to take advantage of the funding if and when it is approved.
- A preferred option has been determined and is currently being refined with further detailed investigations in certain areas. The preferred option bypasses Gerringong and Berry.
- This workshop is to focus on the access options for each of the two bypassed townships. We have to consider the displayed access options and come to agreement, as far as possible, on what the access needs to achieve for Gerringong and Berry into the future.
- This indicates that we need to consider how the towns will work with the new bypasses in operation and how the access arrangements can assist in keeping the best features and maintain the viability of the current towns and communities into the future.

2.2 Project background and overview presentation

Ron de Rooy, RTA Project Manager, outlined an overview of the Gerringong project and the accesses to Gerringong and Berry as part of the upgrade. Key points raised in his presentation included:

- How did we get to where we are now?
  - In the late 1960s a North Street corridor was considered as a bypass for Berry.
  - In 1991, a Gerringong to Berry route selection study was undertaken, but not progressed.
  - In 1998, North Street became the preferred option for a Berry bypass, but not progressed.
  - In 2004/2005 a Quantm corridor study was undertaken from Kiama to Nowra.
  - Preparations for this study commenced in February 2006.
  - Consultancy awarded to Maunsell AECOM in December 2006.
  - A short-list of route options was displayed from November 2007 to February 2008.
  - The preferred option was announced on 13 October 2008.
- Access options for Gerringong and Berry were displayed from 13 October to 7 November 2008.

- Drivers for the overall Princes Highway upgrade have been:
  - Savings in road trauma and crash costs by:
    - Upgrading existing roads.
    - Higher safety standards in new road construction (ie improving road alignment, enhancing the separation of opposing traffic and improving roadside environment safety).
  - The project objectives are to:
    - Improve road safety.
    - Improve traffic efficiency on the Princes Highway between Gerringong and Bomaderry.
    - Support regional and local economic development.
    - Provide value for money.
    - Enhance potential beneficial environmental effects and manage potential adverse environmental impacts.
    - Optimise the benefits and minimise adverse impacts on the local social environment.

- The planning team have been following an overall study process which includes:

  ![Study process diagram](image)

  - Now that the preferred option which bypasses both Gerringong and Berry has been determined, what is the best way for traffic to access and leave both towns or how can we provide safe and efficient access to each town in a way that caters for the current needs and future plans of these communities?
Considerations include:
- Gerringong and Berry have an opportunity to review the access arrangements to each town.
- Travel time on the upgraded highway will be less than the ‘Sandtrack’ route.
- When this occurs up to 90 per cent of through traffic on the ‘Sandtrack’ is predicted to move to the upgraded highway.
- This change in travel path, in combination with the access arrangement chosen, is likely to affect the socio-economic conditions of Gerringong.
- The upgrade will bypass Berry removing most through traffic from the town.
- The increased traffic bypassing Berry, in combination with the access arrangement chosen, is likely to affect the socio-economic conditions of Berry.

Assumptions and givens we are working to include:

**Functional**
- 20 year traffic volume predictions indicate Gerringong and Berry will need one ramp for each direction (ie northbound exit and entry and southbound exit and entry).
- Access between the towns and the highway is required in times of flooding or emergency.

**Social and environment**
- The amenity and context of each town should be protected.
- The access arrangements should support the communities’ ‘long-term’ goals for development.
- Adverse environmental and social impacts should be minimised and beneficial impacts enhanced.

**Value**
- The project is publicly funded and needs to represent value for money spent.
- Engineering risks and future maintenance and operating costs should be minimised.

**Funding**
- Funding for completion of the study is being maintained.
- The first construction project resulting from this study is scheduled to commence after provision of four lanes at Oak Flats to Dunmore and after the South Nowra projects are completed. At that time, Gerringong to Bomaderry will be the missing link in the four lanes from Sydney to Jervis Bay Road strategy.

The next steps in the process are:
- Complete access value management workshop – November 2008.
- Begin concept design of the preferred option – November 2008.
- Announce either the Pink or Green alternative of the preferred option as well as the preferred access options to Gerringong and Berry by June 2009.
- Display concept design and Environmental Assessment – late 2009.
- Begin the property acquisition process (following concept design and dependent on approved funding) – early 2010.
- Commence detailed design process – early 2010.
- Earliest start of first construction project expected to be 2010 / 2011.
2.3 Kiama Municipal Council perspective

A Kiama Municipal Council perspective was presented to the workshop by Bryan Whittaker, Director of Engineering and Works, Kiama Municipal Council. Key points raised in his presentation included:

**Background**

- Gerringong has always maintained two access points to the Princes Highway.
- Belinda Street is a classified Main Road (571) and provides for all turning movements. It is flood affected at times. It has a height restriction of 4.5 metres at the railway overbridge.
- Fern Street restricts the right-hand turn, northbound from the Princes Highway, and is often flood affected on Omega Flat. Fern Street is impaired by a railway level crossing which has experienced problems with queuing. Fern Street at Omega Flat is subject to a five tonne load limit.
- Both intersections are at grade and have a poor crash history, including fatal crashes.
- Traffic volumes in Fern Street have traditionally been similar to those on the Princes Highway due to the use of the ‘Sandtrack’ route to Nowra as an alternative to the highway. Traffic figures indicate that the split of access to Gerringong from the highway is approximately 60 per cent at Belinda Street and 40 per cent at Fern Street. The ‘Sandtrack’ carries around 8,800 vehicles per day.

**Future planning at Gerringong**

- A new draft Kiama Local Environmental Plan 2008 is with the Department of Planning for approval to exhibit. A draft urban strategy has been developed for Gerringong which will be exhibited with the draft Kiama Local Environmental Plan. Provision will be made for 200-300 lots over 15 years.
- Council’s Elambra Estate subdivision has two more stages of development (Stages 6 and 7) on an additional 66 lots of the total 252 dwellings proposed.
- Council’s position is that there will be no development west of the highway at Gerringong.
- Council believe that provision of two north and two south ramps are required with flood free access for at least one north and one south access ramp.
- There should be a focus on preserving agricultural land and enhancing support for dairying and agricultural diversification.

**Council perspective**

- Two access points need to be maintained with both intersections accommodating all turning movements.
- Both intersections should be grade separated to ensure safe and convenient access for the public and emergency services.
- At least one flood free opportunity should be provided for all turning movements to ensure safe and convenient access for the public and emergency services.
- All options must consider the local road and residents impacts and provide adequate traffic management infrastructure to respond.
- Detailed traffic modelling of all options will be necessary to determine these impacts.
- The options as far as possible should provide for both a northern and southern entry to Gerringong / Werri Beach.
- The access links from local roads and driveways west of the Princes Highway to Gerringong must be satisfactorily accommodated.
- Resident impacts will require traffic management inclusions.
• The emergency services (Rural Fire Service, Ambulance Service and Police) all support Council’s perspective.

• Whilst the anticipated reduction in traffic volume through Fern Street and Gerringong is 70 per cent (ie 10,000 vehicles per day to 3000 vehicles per day) upon completion of the Princes Highway upgrade, additional traffic will be expected during construction. This could be for an extended period subject to funding and the finally selected option. Local traffic arrangements must be in place to accommodate the additional traffic during this period.

• It will be necessary to consider the accommodations of excess traffic movements when construction activities will see traffic movements by those familiar with the area diverting to the ‘Sandtrack’ and alternative routes through Gerringong rather than suffer the delays on the highway.

2.4 Shoalhaven City Council perspective

A Shoalhaven City Council perspective was presented to the workshop by John Gould, General Manager, Shoalhaven City Council. Key points raised in his presentation included:

Background

• The layout of the Berry township is based on a grid pattern which allows for good accessibility around town. The Central Business District is rectilinear with good access from both ends of town. It has pedestrian accessibility along the ‘spine’ road.

• Residential dwellings within the town were 663 houses in 1996 to 714 houses in 2006.

• Berry provides a service centre for the surrounding rural areas.

• Berry has a higher than average age profile (which leads to greater car reliance).

• Main features of Berry include the Berry markets (once per month), which is a significant external traffic generator.

• It has a proud heritage and rural character.

• It has a small industrial area (not expected to grow).

• Its higher level services are external to the town and its people need to travel out of town for high school, hospitals, etc.

• It has poor public transport options.

• Generally the community desires include maintaining current ambience and Berry’s rural character. Generally the community does not want urban consolidation. However, there will be ongoing infill development including small scale tourist accommodation in Berry.

• Visitation to Berry is expected to increase at a rate higher than general traffic growth.

• There is a strong tourist link from the north (ie Sydney and Wollongong) whilst there is a strong commercial link to Nowra.

• The need for a rest stop at a convenient distance from Sydney has seen the Mark Radium Park achieve a strong link with this community and with travellers to Berry and beyond.

• Some of the main features in Berry include:
  - School of Arts.
  - Major Showground.
  - Small industrial area.
  - Tourist accommodation.
  - Tourist oriented retail and dining businesses.
  - Mark Radium Park, rest stop.
  - Major sporting complexes.
• Planning constraints include:
  - Scenic protection vistas from the town.
  - Prime agricultural land to the north and south.
  - Flooding areas around the town. Flood studies have been completed for Berry and provide data for design development of the upgrade.
  - Main area for growth is limited to the south-west.
  - Berry has a number of heritage features which are valued by the community.

• In terms of rail transport:
  - Used mainly for commuting purposes.
  - Not an alternative for private transport.
  - Not used by tourists.

Council perspective

• Shoalhaven City Council has strong support for the development of four lanes on the highway to at least Jervis Bay Road.

• Council values the current high level of tourism at Berry and the surrounding area, and strongly supports ease of access into and out of Berry.

• Development proposals to the south of Berry have recognised and have been conditioned to account for the township bypass as previously considered with the RTA. It is noted that in Victoria Street there is a 120 bed aged care facility and a 39 unit seniors living development. There is also a 303 lot residential subdivision still to have residences built west of the highway with access via Kangaroo Valley Road.

• Ease of vehicle and pedestrian access to Berry township from the residential areas along Kangaroo Valley Road is required (Kangaroo Valley Road expected to be an overpass bridge over the highway).

• There should be no impact to the sporting complex (Woodhill Mountain Road) in any design.

• There should be minimal impact to the ‘vista’ looking north from Berry township.

• The upgrade should consider the development of Grand Pacific Drive tourist route and its links with Berry.

• Council has preferences on the northbound and southbound access and egress which it will air during the workshop process.

2.5 Community participation overview

An overview of the community feedback on access requirements generally in the study area was presented by Leigh O’Dwyer, Social-economic Workstream Leader. (More detail was provided for access issues specifically for Gerringong and Berry townships later in the workshop). Key points raised in her presentation included:

• Access options were placed on display between 13 October to 31 October 2008.

• A range of information and consultation tools were used including:
  - Staffed displays.
  - Static displays.
  - Aboriginal focus group meeting.
  - Two information sessions (one at Gerringong and one at Berry).
Community members were encouraged to present their views through:
- Interviews.
- Structured feedback.
- Written submissions.

In response to requests by community, the submissions period was extended for an extra week to 13 November. A very high volume of submissions were received.

Each submission was recorded in a custom-built database. All submissions were analysed and categorised as either functional, social, environmental or economic issue / comment raised. A total of 2,580 entries were analysed.

Key priorities for Berry and Gerringong were consistent being:
- Road safety.
- Local traffic management.
- Visual and noise impacts for local residents.

General patterns and trends indicated the following:
- For functional, the main concerns are:
  - Adequate provision of access for north and south bound travel.
  - Impact of traffic changes and traffic flow through residential areas.
  - Provision of local access for homes and farms.
  - Safety for cyclists, pedestrians, vehicles and parking.
- For social, the main concern is:
  - Impact on noise and visual amenity for local residents.
- For environmental, the main concern is:
  - Visual impact on scenery and character of the area.
- For economic, the main concerns are:
  - Impact of redirected traffic to businesses and tourism.
  - Impact on property values.

2.6 The ‘problem situation’

The workshop group reflected on the information presented in the overview presentations and the information in the background paper issued to participants prior to the workshop. The group reviewed and discussed, what is the ‘problem situation’ with regard to access to Gerringong and Berry that is causing the need to consider a solution. Clarification was sought on various points and finally the group agreed that the problem is (to varying degrees) that:

Gerringong

- There are two access points to the Princes Highway (Belinda Street and Fern Street). Both intersections are at grade and have a poor crash history including fatal crashes.
- Belinda Street access provides all turning movements but is flood affected at times and has a height restriction at the railway overbridge. (It was noted that there was no height restriction at the railway overbridge for ‘legal’ height vehicles).
- Fern Street access has no right hand turn northbound off Princes Highway. It is impaired by a railway level crossing leading to queuing problems and is often flood affected on Omega Flat. Fern Street is subject to a five tonne load limit.
Berry

- The Princes Highway currently runs through Berry but in future with the highway upgrade bypassing the town, access to the town will need to provide for community and business activities including residents, tourists, business owners and suppliers.
- The access arrangements selected will need to resolve flooding issues to maintain access to Berry.

2.7 Access objectives for Gerringong and Berry

The workshop group reflected on what was important about the access to Gerringong and Berry (ie what must the project achieve with regards to access to Gerringong and Berry to be successful?). The group believed it must:

- Provide safer use for all users of the network (including pedestrians and cyclists).
- Complement local movement patterns and the social network.
- Improve access during flooding.
- Address the flow and use of local roads for all.
- Provide appropriate emergency services access.
- Cater for general access vehicles (ie vehicles that are legally able to use the road including heavy vehicles, legally sized vehicles, etc).
- Facilitate access to rest stops.
- Minimise visual intrusion (to and from) the towns.
- Facilitate tourism by providing easy access.
- Provide easily legible access and intuitive access for all users.
- Facilitate business and employment opportunities.
- Mitigate environmental impacts including noise, flora, fauna, dust, etc.
- Provide access amenity (including for tourists); at least to current or better level of service.
- Minimise land take.
- Be planned right first time.
- Accommodate interim traffic flow during construction.
- Address impacts of climate change.
- Blend / complement environment and amenity of the location (of the town).
- Minimise impact on heritage elements (both Indigenous and European).
- Maintain or enhance access to public transport.
- Minimise the need for U-turns on the highway.
- Minimise negative impact on property values.
- Minimise impact on social amenity (cohesion).
- Provide value for money (including minimum ongoing maintenance).
- Provide sufficient access for the surrounding community.
- Meet the objectives of the upgrade.
Although all the items above were considered important, the group discussed each statement at length and agreed that the following items were ‘highly desirable’ rather than ‘must do’ items for the access to the towns:

- Facilitate access to rest stops.
- Minimise land take.
- Maintain or enhance access to public transport.
- Minimise negative impact on property values.

Also the group agreed that the following items (although important) would not assist in differentiating between the various access arrangements for the two towns or were covered by another item:

- Address the flow and use of local roads for all.
- Facilitate tourism by providing easy access.
- Be planned right first time.
- Address impacts of climate change.
- Blend / compliment environment and amenity of the location (of the town).
- Minimise the need for U-turns on the highway.
- Minimise impact on social amenity (cohesion).
- Provide sufficient access for surrounding community.
- Meet the objectives of the upgrade.

As a result, the workshop group agreed that the access objectives listed below reflect the values of the area that access must achieve for the project to be successful and that could assist the group in differentiating between the access options for the two towns.

These assessment criteria / values would be weighted by the Gerringong workshop stream and the Berry workshop stream separately and be used in evaluating the access options for the two towns later in the workshop.

It should be noted that costs were not included at this stage but would be used later in the process as a factor to determine which options provided the better ‘value for money’ solutions.

Assessment criteria / values accepted by the whole group to be used to evaluate the access options for Gerringong and Berry were:

- Provide safer use for all users of the network (including pedestrians and cyclists).
- Complement local movement patterns and the social network.
- Improve access during flooding.
- Provide appropriate emergency services access.
- Cater for general access vehicles (ie vehicles that are legally able to use the road including heavy vehicles, legally sized vehicles, etc).
- Minimise visual intrusion (to and from) the towns.
- Provide easily legible access and intuitive access for all users.
- Facilitate business and employment opportunities.
- Mitigate environmental impacts including noise, flora, fauna, dust, etc.
- Provide access amenity (including for tourists); at least to current or better level of service.
• Accommodate interim traffic flow during construction.
• Minimise impact on heritage elements (both Indigenous and European).

2.8 Givens and assumptions we are working within

The group reflected on the ‘givens’ and assumptions within which the project is being planned, as outlined in the background paper. These were reviewed by the group, clarified, amended where necessary and agreed as outlined below. Those questioned or added to by the group are shown in italics.

Functionality

• Based on 20 year traffic volume predictions, Gerringong and Berry will need one ramp for each direction (ie northbound exit and entry and southbound exit and entry).
• There must be an available access between the towns and the highway in times of flooding or in emergency (better or equivalent to now).
• The access arrangements will be grade separated for safety.

Social and environment

• The amenity and context of the towns should be protected.
• The access arrangements should support the two communities’ long-term goals for development.
• Environmental, economic and social impacts should be minimised.

Value

• The project is publicly funded and needs to represent value for the community and be affordable.
• Engineering risks and future maintenance costs should be minimised where possible.

Having built a foundation and common understanding of the issues, the access objectives for the towns, the givens and assumptions and the assessment criteria / values to be used for option evaluation, the group was now in a position to divide into two streams for the remainder of the workshop. One stream focussed on the Gerringong access arrangements and a second stream focussed on the Berry access arrangements.

For each of the two streams, participants would weight the assessment criteria, review the developed access arrangement options for their town, evaluate the options against the criteria and make recommendations regarding access option arrangement or arrangements.
3.0 Gerringong access assessment

The information presented in this Chapter is a consolidation of the general outputs and perceptions of the workshop participants undertaking the Gerringong access arrangement stream. The participants involved in this stream are shown in Appendix A.

Participants would be requested to weight the assessment criteria (developed earlier), review the access arrangement options for Gerringong including the opportunities and considerations for each option. The participants would then qualitatively evaluate the options against the assessment criteria as well as the strategic cost estimates for each option. Finally the workshop participants would draw conclusions and make recommendations on access arrangements to move forward and progress the project.

3.1 Weighting of assessment criteria

The assessment criteria / values accepted by the group to evaluate the access options were:

A. Provide safer use for all users of the network.
B. Complement local movement patterns and the social network.
C. Improve access during flooding.
D. Provide appropriate emergency services access.
E. Cater for general access vehicles.
F. Minimise visual intrusion (to and from) the towns.
G. Provide easily legible access and intuitive access for all users.
H. Facilitate business and employment opportunities.
I. Mitigate environmental impacts including noise, flora, fauna, dust, etc.
J. Provide access amenity at least to current or better level of service.
K. Accommodate interim traffic flow during construction.
L. Minimise impact on heritage elements.

Relative weighting of the assessment criteria was undertaken qualitatively by the whole group using a paired comparison approach. The discussion in undertaking this task was extensive and allowed the group to understand and appreciate the various perspectives represented in the workshop during the weighting process. The final weightings were reached on a consensus basis.

The group’s workings and their weightings of the assessment criteria are provided as Table 3.1.
Table 3-1  Gerringong weightings for the assessment criteria

<table>
<thead>
<tr>
<th>No</th>
<th>Assessment</th>
<th>Raw score</th>
<th>Relative weightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Provide safer use for all users of the network</td>
<td>28</td>
<td>24%</td>
</tr>
<tr>
<td>B</td>
<td>Complement local movement patterns and the social network</td>
<td>12</td>
<td>10%</td>
</tr>
<tr>
<td>C</td>
<td>Improve access during flooding</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>Provide appropriate emergency services access</td>
<td>8.5</td>
<td>7%</td>
</tr>
<tr>
<td>E</td>
<td>Cater for general access vehicles</td>
<td>7</td>
<td>6%</td>
</tr>
<tr>
<td>F</td>
<td>Minimise visual intrusion (to and from) the towns</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>G</td>
<td>Provide easily legible access and intuitive access for all users</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>H</td>
<td>Facilitate business and employment opportunities</td>
<td>9.5</td>
<td>8%</td>
</tr>
<tr>
<td>I</td>
<td>Mitigate environmental impacts including noise, flora, fauna, dust, etc</td>
<td>13</td>
<td>11%</td>
</tr>
<tr>
<td>J</td>
<td>Provide access amenity at least to current or better level of service</td>
<td>12</td>
<td>10%</td>
</tr>
<tr>
<td>K</td>
<td>Accommodate interim traffic flow during construction</td>
<td>1.5</td>
<td>1%</td>
</tr>
<tr>
<td>L</td>
<td>Minimise impact on heritage elements</td>
<td>19.5</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>116</strong></td>
<td>~100%</td>
</tr>
</tbody>
</table>

Scoring matrix

The workings for the relative assessment are shown in **Table 3.2**.

Table 3-2  Workings for relative assessment criteria

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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<td>3A</td>
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<td>3A</td>
<td>3A</td>
</tr>
<tr>
<td>B</td>
<td>3B</td>
<td>B/D</td>
<td>1B</td>
<td>3B</td>
<td>2B</td>
<td>B/H</td>
<td>B/I</td>
<td>B/J</td>
<td>1B</td>
<td>2L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2D</td>
<td>2E</td>
<td>1F</td>
<td>1G</td>
<td>3H</td>
<td>3I</td>
<td>3J</td>
<td>1K</td>
<td>3L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>1D</td>
<td>1D</td>
<td>2D</td>
<td>D/H</td>
<td>1I</td>
<td>D/J</td>
<td>1D</td>
<td>1L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>2E</td>
<td>2E</td>
<td>E/H</td>
<td>1I</td>
<td>1J</td>
<td>E/K</td>
<td>2L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>1G</td>
<td>2H</td>
<td>2I</td>
<td>2J</td>
<td>1F</td>
<td>2L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>1I</td>
<td>1J</td>
<td>1G</td>
<td>2L</td>
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<td></td>
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<td>2H</td>
<td>2L</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>11</td>
<td>2I</td>
<td>1/L</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>2L</td>
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</tbody>
</table>
Summary

The weighting of the assessment criteria using the paired comparison provided the following order of importance (top most important):

- Provide safer use for all users of the network.
- Minimise impact on heritage elements.
- Mitigate environment impacts including noise, flora, fauna, dust etc.
- Complement local movement patterns and the social network.
- Provide access amenity at least to current or better level of service.
- Facilitate business and employment opportunities.
- Provide appropriate emergency services access.
- Cater for general access vehicles.
- Provide easily legible access and intuitive access for all users.
- Minimise visual intrusion (to and from) the towns.
- Accommodate interim traffic flow during construction.

Although important and will need to be considered when undertaking further work on the recommended option, ‘improve access during flooding’ was not considered as important as the other criteria when compared in pairs and scored zero. As a result, it was not used when evaluating the access options.

3.2 Access option description presentation

The project team presented to the workshop group the various access options in order to provide a common understanding and allow the group to add from their various perspectives further opportunities or considerations (advantages or disadvantages). This would allow the group to then evaluate the various options against the assessment criteria.

Overview of current situation

A summary of the current access arrangements are:

- Belinda Street – all movements, at-grade.
- Fern Street – access to Gerringong – southbound only, at-grade; egress from Gerringong – south and northbound, at grade (close to skewed railway level crossing).
- Local roads (Willowvale, Sims and Rose Valley roads) have unrestricted at-grade access.
- Farm access onto the highway and access roads.

A summary of existing traffic conditions are:

- Main accesses to Gerringong:
  - At-grade intersection at Belinda Street with all movements allowed.
  - At-grade intersection at Fern Street with all movements allowed except right turn from the highway.
- 70 per cent of traffic use Fern Street, 30 per cent uses Belinda Street accesses.
- Fern and Belinda streets main collector roads (50km/h).
- Fern and Belinda streets are used to access the ‘Sandtrack’.
- Fern Street carries approximately 700 vehicles per hour during peak periods.
- Belinda Street carries approximately 350 vehicles per hour during peak periods.
- Approximately 10 per cent of heavy vehicles on the highway near Gerringong.
- Rowlins Road and Victoria Street are the main accesses to the industrial area.
- Fern Street, Blackwood Street and Figtree Lane are the main accesses to Gerringong town centre.

- Comments on functionality include:
  - Vertical grade on downhill from Mount Pleasant Lookout promotes high speeds on approach to Fern Street intersection.
  - The highway upgrade will include improvement to existing vertical alignment in the vicinity of Sims Road.
  - The upgrade will include improvement to horizontal existing horizontal alignment in the vicinity of Belinda Street.
  - There is a five tonne load limit on Fern Street.
  - There is a 4.5 metre height limit under the railway bridge on Belinda Street.
  - There are significant geometric constraints existing on various internal roads including Belinda Street, numerous mini-roundabouts and the crest on Fern Street.
  - Although RailCorp have no specific plans to duplicate and/or electrify the South Coast Railway, this possibility needs to be accommodated.

- The accident records of the relevant roads were presented (see Table 3.3):

<table>
<thead>
<tr>
<th>Location</th>
<th>Fatal accidents</th>
<th>Injury accidents</th>
<th>Tow away</th>
<th>Total accidents</th>
<th>Fatalities</th>
<th>Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerringong</td>
<td>4</td>
<td>49</td>
<td>75</td>
<td>128</td>
<td>5</td>
<td>82</td>
</tr>
<tr>
<td>Prices Highway (Mount Pleasant to Willowvale Road)</td>
<td>4</td>
<td>45</td>
<td>43</td>
<td>92</td>
<td>5</td>
<td>73</td>
</tr>
<tr>
<td>Fern Street</td>
<td>0</td>
<td>1</td>
<td>17</td>
<td>18</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Belinda Street</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Bridges Road</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rowlins Road (between October 2002 and September 2007)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- Comments on flooding, drainage and ground conditions include the need to be aware of:
  - Omega Flat.
  - Crooked River floodplain.
  - Acid sulphate soils and soft, compressible soils.

- Comments on heritage include the need to be aware of:
  - Renfrew Park:
    - Locally significant on Kiama LEP (statutory listing).
    - Listed on the National Trust Register.
  - Aboriginal Focus Group identified the wetland area to the east of Fern Street as potentially culturally significant.
  - No other significant Indigenous or non-Indigenous issues in Gerringong in relation to the access options.

- Comments on flora and fauna include the need to be aware of the State Environmental Planning Policy 14 wetland to the east of Fern Street.
Options development

- In general:
  - The only feasible locations for interchanges are:
    - North of Gerringong (Fern Street and/or at Rose Valley Road).
    - Central (Sims / Bridges roads).
    - South of Gerringong (Belinda Street).
  - At-grade intersections for Gerringong were not considered due to road safety concerns.
  - Controlled access (limited) to properties / paddocks would be provided.
  - The existing alignment (horizontal and vertical) of the highway adjacent to Gerringong requires improvement.

- In the north:
  - Access options utilising Fern Street need to consider flooding.
  - The current rail level crossing at Fern Street requires elimination.
  - At Fern Street the railway must be crossed by an overbridge. An underpass is precluded due to the flooding in the area.
  - Any options at Omega Flat would carry significant cost and programming risk.

- In the central:
  - Any central access would result in access to Gerringong through streets currently experiencing little traffic.
  - Accesses in the vicinity of Sims and Bridges roads would have natural flood immunity.

- In the south:
  - Any access utilising Belinda Street would need to consider additional drainage works to alleviate the flooding near the bridge under the railway line.
  - At Belinda Street the existing bridge under the railway line should be retained.

The project team then presented each of the options in terms of key features, traffic information and community feedback. After the presentation of each option, opportunities (advantages) and considerations (disadvantages) as outlined in the background paper were reviewed by the group and amended or added to below. The various options as presented by the project team are shown in Appendix B.
Option G1

- **Key features:**
  - A full central interchange at Sims and Bridges roads, with no access provided at Belinda or Fern streets.
  - Potentially directly affects nine properties.
  - Single access point to and from the highway. Vehicles can leave the highway southbound, enter the shopping area and re-access the highway via Belinda Street and Rowlins Road (a 700 metre backtrack).
  - Would require load limit on Bridges Road and direct heavy vehicles along Rowlins Road.

- **Traffic:**
  - Significant flow increase on Bridges and Rowlins roads.
  - Significant flow reduction on Fern and Belinda streets.
  - Impacts on pedestrian and cycle route along Rowlins Road.
  - Safe crossing required at new connection between interchange and Bridges Road.
  - Safer to cross at Belinda Street (west of Rowlins Road).
  - No significant impacts to public transport operations.
  - Heavy vehicle load limit required on Bridges Road.
  - Heavy vehicles to use Rowlins Road to access the industrial area.

- **Community Feedback:**
  - Opportunities identified by the community include:
    - Overcomes safety and flooding at Belinda and Fern streets.
    - Provides safe, practical and adequate access.
    - Improves local traffic management.
    - Minimal impact on properties.
    - Minimal visual impact.
    - Provides access to industrial area for heavy vehicles.
    - Ease of access for Sims Road residents.
    - Cost effective.
  - Considerations identified by the community include:
    - Traffic flow through residential areas.
    - Traffic changes on community facilities / park.
    - Amenity for Bridges Road residents and impact on local businesses.
    - Bus and pedestrian route for school children on Bridges and Rowlins roads.
    - Availability of alternative access in emergency situations.
    - Safety impacts for cyclists, pedestrians, vehicles and parking.
    - Disruption to daily living, movement patterns and social networks.
    - Current infrastructure not designed for heavy traffic.

- **Opportunities (with amendments and additions by the group shown in italics):**
  - A new overbridge would give Sims Road unrestricted access to Gerringong.
  - The main entry to the town centrally located with relatively direct access to the town centre and all residential areas.
  - The new interchange would use the natural topography to achieve grade separation. The level of the highway would be lower, similar to the railway line.
  - No construction in Omega Flat at Fern Street. This would avoid potential difficult construction over soft soils containing acid sulphate.
Would avoid potential impact to the State Environmental Planning Policy 14 wetland and possible Aboriginal cultural values to the east of Fern Street.
- Elevation of the topography would provide flood immunity.
- Would not impact access for Willowvale and Rose Valley roads (as much as other options).
- Having only one access point would reduce the overall amount of infrastructure required on the project for access.

Considerations (with amendments and additions by the group shown in *italics*):
- Would require additional land on the western side of the highway. The upgraded highway would be moved to the west to make room for the southbound exit and entry ramps.
- Would impact pedestrian and cycle route along Rowlins Road.
- Would introduce through traffic to Bridges and Rowlins roads.
- Noise impact on Bridges and Rowlins roads due changed local traffic conditions.
- The use of Bridges and Rowlins roads would significantly impact on sporting facilities, local school access and bus facilities.
- The option would require extra traffic management facilities on local roads for the network to run smoothly.
- More traffic will go through Blackwood Street and the Elambra Estate.
- Does not provide the opportunity for alternative emergency access to/from the north of town.
- Traffic south of Gerringong will go through town to access the highway.
- Main access to beach will become Bridges Road (which goes through caravan park).
- Would greatly impact on the bellachara Hotel (which sites 17 percent of its bookings as being derived from drive by business).
- Lower capture of passing trade for businesses.
- Impacts on businesses in town (who depend on drive by business) – particularly Belinda Street businesses (eg the hotel and service station).
- A changed Willowvale Road access could impact on the local winery.
- This option requires intersection treatments at Willowvale and Rose Valley roads which have yet to be determined.
- The option will impact on well established social interaction patterns.
- Doesn’t complement local movement patterns and social patterns (safety issue around the park).
- One access point could create safety problems for drivers missing the turn off the highway (possibly looking for U-turn further south).
- Environmental and flooding impacts for Fern Street options around the lagoon area.
Option G2

- **Key features:**
  - Half interchanges provided to the north and south (north facing ramps at Fern Street and south facing ramps at Belinda Street).
  - Potentially directly affects 11 properties.
  - Traffic can leave the highway southbound or northbound, enter the shopping area and re-access the highway without backtracking.
  - Fern Street has a five tonne load limit. This option would require Fern Street to be re-classified subject to a positive structural load check.

- **Traffic:**
  - Similar flow at Fern Street (compared to ‘do-nothing’ option).
  - Flow reduction at Belinda Street (no access to/from north).
  - Flow increase at Bridges and Rowlins roads (no access to/from north).
  - No significant impacts on pedestrian and cycle route along Rowlins Road.
  - Safer to cross at Belinda Street (west of Rowlins Road).
  - No significant impacts to public transport operations.
  - Heavy vehicle entering / exiting Gerringong from north would have to use Fern Street, which has a five tonne load limit.

- **Community feedback:**
  - Opportunities identified by the community include:
    - Maintains existing traffic flow but with improved safety at Belinda and Fern Street junctions.
    - Logical, cost efficient.
    - Limited impact for residential areas and properties on Sims and Bridges roads.
    - Accommodates existing pedestrian routes and cycleway.
    - Minimal impact to property values, tourism and businesses.
    - Minimal noise impact.
  - Considerations identified by the community include:
    - Northbound exit required at Belinda Street for heavy vehicles and Elambra Estate development.
    - Traffic, accessibility, tourism and businesses improved by two movement access arrangement.
    - Safety concerns with increased Fern Street traffic.
    - Amenity for residents on Belinda and Fern streets.
    - Wetland area / flood plain.
    - Visual impact of bridges / overpass.
    - Cost.

- **Opportunities (with amendments and additions by the group shown in italics):**
  - Would utilise existing access points with minimal change to current traffic configurations.
  - Would address inadequate drainage in Belinda Street.
  - Minimal noise impact due to unchanged traffic conditions along Gerringong residential streets (**particularly to Bridges and Rowlins streets**).
  - Minimal visual impact of structures due to the distance between the closest residences at both Fern and Belinda streets (**height of bridge will still be 10-12 metres high**).
  - More efficient freight movement.
- Higher capture of passing through trade for businesses.
- Preserves community safe zone, movement patterns and social network.
- Maintains straightforward emergency service vehicle access southbound.

Considerations (with amendments and additions by the group shown in italics):
- Would have relatively high cost and risk of constructing the elevated roadway along Fern Street.
- Would have risk of adverse environmental impact on wetlands if development to the east of Fern Street.
- Steep incline of southbound on-ramp from the level where Belinda Street passes under the railway line.
- Elevated highway to allow underpass to cross Eastern Gas Pipeline immediately south of Belinda Street.
- Clearance beneath existing railway bridge at Belinda Street is 4.5 metres. This would not provide clearance for ‘over-height’ vehicles while still meeting the minimum clearance. Crash statistics for the period 2003 to 2007 record no crashes with the bridge. (There is no obligation to provide this clearance as it meets legal vehicle limits).
- Heavy vehicles entering / exiting Gerringong would have to travel along Fern Street, which currently is load limited to five tones.
- Would impact access for Willowvale, Sims and Rose Valley roads.
- This option would address Fern Street flooding issue.
- Visual intrusion from the highway (at the Fern Street crossing – high overhead bridge structure).
- Would require upgrade of Fern Street to cater for heavy vehicles. Heavy vehicle, road safety and noise impacts on Fern Street. Traffic management devices in Fern Street will need to be reviewed to cater for heavy vehicles.
- No local alternative access northbound.
- Changed traffic patterns and local movement patterns (ie heavy vehicles) will now go through the village.
- Only one opportunity to enter Gerringong southbound and northbound (for residents, tourists and businesses).
- Potential area of Aboriginal significance around Werri Lagoon and Oaree Creek may be impacted.
- Significant impact on Fern Street during construction.
- Significant impact in Gerringong during Fern Street and Belinda Street reconstruction.
- Southern expansion area will exit north by going through the village.
Option G3

- **Key features:**
  - Half interchange at Sims Road for northbound traffic, with southbound traffic exiting at Fern Street and entering at Belinda Street.
  - Potentially directly affects 14 properties.
  - Traffic can leave the highway southbound, enter the shopping area and re-access the highway without backtracking.
  - Fern Street has a five tonne load limit. This option would require Fern Street to be reclassified subject to a positive structural load check.
  - Would require load limit on Bridges Road and direct heavy vehicles along Rowlins Road.

- **Traffic:**
  - Flow reduction at Fern and Belinda streets.
  - Flow increase at Bridges and Rowlins roads.
  - Traffic distribute between three access points.
  - Impacts on pedestrian and cycle route along Rowlins Road.
  - Safer to cross at Belinda Street (west of Rowlins Road).
  - No significant impacts to public transport operations.
  - Heavy vehicle entering Gerringong from north would have to use Fern Street, which has a five tonne load limit.

- **Community feedback:**
  - Opportunities identified by the community include:
    - Spreads traffic flow.
    - Maintains and enhances current traffic flow and management.
    - Accommodates heavy vehicles.
    - Provides safe access and can accommodate emergency situations.
    - Minimal noise impacts.
    - Minimal impact to local businesses.
  - Considerations identified by the community include:
    - Alters existing traffic flow.
    - One northbound access in emergency or heavy traffic situations.
    - Bus and pedestrian route for school children on Bridges and Rowlins roads.
    - Fern Street prone to flooding.
    - Noise and visual impacts.
    - Impact on residential area, tourists and businesses.
    - Impact on town amenity.

- **Opportunities (with amendments and additions by the group shown in italics):**
  - A new overbridge at Sims and Bridges roads would provide a link to the western side of the highway.
  - Three access points would distribute traffic throughout Gerringong.
  - Would address inadequate drainage in Belinda Street *(as per option G2).*
  - *Accommodates heavy vehicles in northbound direction (not southbound) and provides direct access to the industrial area.*
  - *Minimises impact on local businesses relative to options G1 and G2.*
Considerations (with amendments and additions by the group shown in *italics*):
- Central interchange would require additional land on the western side of the highway. However, this land requirement would be less than for option G1.
- Would impact pedestrian and cycle routes along Rowlins Road.
- Relatively high cost and risk of constructing the elevated roadway along Fern Street.
- Risk of adverse environmental impact on wetlands if development to the east of Fern Street.
- Clearance of existing bridge under railway line at Belinda Street is 4.5 metres. This would not provide clearance for ‘over-height’ vehicles whilestill meeting the minimum clearance. Crash statistics for the period 2003 to 2007 record no crashes with the bridge. *(There is no obligation to provide this clearance as it meets legal vehicle limits).*
- Would introduce a significant visual impact associated with the Fern Street structure.
- Significant visual, safety and noise impacts on Bridges and Rowlins roads and Fern Street due to changed local traffic conditions.
- Would impact access for Willowvale, Sims and Rose Valley roads.
- Lack of alternative access for local traffic in either direction.
- The use of Bridges and Rowlins roads would significantly impact on sporting facilities, local school and bus facilities.
- Doesn’t complement local movement patterns and social patterns (safety issue around the park).
- It does not provide an efficient use of funds to upgrade Fern Street for one extra movement.
- Could be confusing (not a very legible access).
- Potential area of Aboriginal significance around Werri Lagoon and Oaree Creek may be impacted.
- Significant impact on Fern Street during construction.
- Significant impact in Gerringong during Belinda Street reconstruction.
- Environmental and flooding impacts for Fern Street options around lagoon area.

3.3 Additional options to be considered as a result of community feedback

Community feedback received from the displayed options (options G1, G2 and G3) included:

- Full interchange is preferred at both Belinda and Fern streets.
- Consider opportunities to:
  - Minimise traffic build-up.
  - Enhance safety.
  - Address local access for Sims and Rose Valley roads.
  - Minimise impact on tourism and local businesses.
  - Minimise impact on amenity.
- Consider a full interchange at Bridges Road, close Fern Street and provide an additional southbound exit at Belinda Street.

This feedback, along with a review of options G2 and G3 with respect to heavy vehicles using Fern Street, led to the project team developing three more options being option G2/6, option G2/8 and option G3/5 which are presented below.
Option G2/6

Key features:
- A full interchange provided at Belinda Street.
- Half interchange – north facing ramps at Fern Street.
- Potentially directly affects 11 properties.
- Traffic can leave the highway southbound or northbound, enter the shopping area and re-access the highway without backtracking.
- Would utilise existing access points with minimal change to current traffic configurations.
- Would have minimal noise impact because of minimal changes to traffic conditions along Gerringong residential streets.
- Would have minimal visual impact of structures for town residents due to the distance between the closest residences at both Fern and Belinda streets.
- Would provide a ‘second chance’ access to Gerringong for southbound traffic.
- Five tonne load limit would be maintained on Fern Street.

Traffic:
- Slight flow reduction at Fern Street (compared to option G2).
- Similar flow at Belinda Street (all movements allowed).
- Similar flow at Bridges and Rowlins roads (compared to ‘do-nothing’).
- No significant impacts on pedestrian and cycle route along Rowlins Road.
- No significant impacts to public transport operations.
- Heavy vehicle would continue to use Belinda Street to access Gerringong.

Opportunities (with amendments and additions by the group shown in italics):
- Would utilise existing access points with minimal change to current traffic configurations.
- Would address inadequate drainage in Belinda Street.
- Would produce minimal noise impact due to unchanged traffic conditions along Gerringong residential streets (particularly to Bridges and Rowling streets).
- Minimal visual impact of structures for town residents due to the distance between the closest residences at both Fern and Belinda streets (height of bridge will still be 10-12 metres high).
- Heavy vehicles would continue to access / exit Gerringong via Belinda Street.
- More efficient freight movement.
- Higher capture of passing through trade for businesses.
- Preserves community safe zone, movement patterns and social network.
- Maintains straightforward emergency service vehicle access southbound.
- Would remove the need for heavy vehicles to use Fern Street and does not require Fern Street upgrade (costly).
- Second chance access available for traffic from the north.

Considerations (with amendments and additions by the group shown in italics):
- Difficult construction of railway overbridge in Omega Flat.
- Would provide a steep incline of southbound on-ramp from the level where Belinda Street passes under the railway line.
- Would require an elevated highway to allow underpass to cross Eastern Gas Pipeline immediately south of Belinda Street.
- Access for Sims and Rose Valley roads requires further consideration.
- Would require more land-take west of Belinda Street than option G2.
- Visual impact from highway (Belinda Street end and Fern Street end).
- Significant impact on Fern Street during construction (however, less than options G2 and G3 as temporary diversions could use Belinda Street).
- Significant impact in Gerringong during Fern and Belinda streets reconstruction.

Option G2/8

- **Key features:**
  - A full interchange provided at Rose Valley Road with local traffic connected to Fern Street via a service road.
  - A full interchange provided at Belinda Street.
  - Potentially directly affects 11 properties.
  - Traffic can leave the highway southbound or northbound, enter the shopping area and re-access the highway without backtracking.
  - Would have minimal noise impact because of minimal changes to conditions along Gerringong residential streets.
  - Would have minimal visual impact of structures due to the distance between the closest residences at both Fern and Belinda streets.
  - Would provide ‘second chance’ access to Gerringong for southbound and northbound traffic.
  - Five tonne load limit would be maintained on Fern Street.

- **Traffic:**
  - Slight flow reduction at Fern Street (compared to option G2).
  - Similar flow at Belinda Street (all movements allowed).
  - Similar flow at Bridges and Rowlins roads (compared to ‘do-nothing’).
  - ‘Second chance’ access for all movements to/from Gerringong.
  - No significant impacts on pedestrian and cycle route along Rowlins Road.
  - No significant impacts to public transport operations.
  - Heavy vehicle would continue to use Belinda Street to access Gerringong.

- **Opportunities (with amendments and additions by the group shown in italics):**
  - Would address inadequate drainage in Belinda Street.
  - Would produce minimal noise impact due to unchanged traffic conditions along Gerringong residential streets.
  - Would produce minimal visual impact of structures due to the distance between the closest residences at both Fern and Belinda streets.
  - Heavy vehicles would continue to access / exit Gerringong via Belinda Street.
  - Fern Street would not need to be elevated above the flood level as access in flood would be via Belinda Street.
  - Would make best use of the necessary underpass at Rose Valley Road.
  - Would provide ‘second chance’ access to Gerringong for southbound and northbound traffic.
  - The (Rose Valley Road) northbound on-ramp would be in a good location to start the auxiliary climbing lane to Mount Pleasant Look-out.
  - Would remove the need for heavy vehicles to use Fern Street.
  - *Preserves community safe zone, movement patterns and social network.*
  - *Less risk of environmental impact and heritage impact (than option G2 but is not as good as option G1).*
  - *Addresses Rose Valley, Willowvale and Sims roads access to/from town.*
Less visual impact on the northern end of town.

Considerations (with amendments and additions by the group shown in italics):
- Difficult construction of rail overbridge and service road in Omega Flat.
- Would provide a steep incline of southbound on-ramp from level where Belinda Street passes underneath railway line.
- Would require an elevated highway to allow underpass to cross Eastern Gas Pipeline immediately south of Belinda Street.
- Access for Sims Road would be restricted to left in and left out only with right turns available at Willowvale Road and Rose Valley Road junctions.
- The (Rose Valley Road) southbound off-ramp to Gerringong would commence approximately one kilometre north of the existing railway crossing.
- Significant impact on Fern Street during construction (however, less than options G2 and G3 as temporary diversions could use Belinda Street).
- May have to relocate water main (recently constructed) near Fern Street.
- Significant impact in Gerringong during Fern and Belinda streets reconstruction.

Option G3/5

- Key features:
  - Half interchange at Sims Road for northbound traffic.
  - Southbound off-ramp to Gerringong for light vehicles at Fern Street.
  - Southbound off-ramp to Gerringong for all vehicles at Belinda Street.
  - Southbound on-load ramp at Belinda Street.
  - Potentially directly affects 14 properties.
  - Traffic can leave the highway southbound, enter the shopping area and re-access the highway without backtracking.
  - Would remove the need for heavy vehicles to use Fern Street.

- Traffic:
  - Flow reduction at Fern and Belinda streets (compared to option G3).
  - Flow increase at Bridges and Rowlins roads (less than option G3).
  - Traffic distribute between three access points.
  - Impacts on pedestrian and cycle route along Rowlins Road.
  - Safer to cross at Belinda Street (west of Rowlins Road).
  - No significant impacts to public transport operations.
  - Heavy vehicle entering Gerringong from the north would have to use Belinda Street as five tonne load limit is imposed at Fern Street.

- Opportunities (with amendments and additions by the group shown in italics):
  - A new overbridge at Sims and Bridges roads would provide a link to the western side of the highway and direct access to Gerringong for Sims Road traffic.
  - Three access points would distribute traffic throughout Gerringong.
  - Would address inadequate drainage in Belinda Street.
  - Would remove the need for heavy vehicles to use Fern Street.
  - Significant impact on Fern Street during construction (however, less than options G2 and G3 as temporary diversions could use Belinda Street).
  - Provides a ‘second chance’ for southbound traffic.
• Considerations (with amendments and additions by the group shown in italics):
  - Difficult construction of rail overbridge in Omega Flat.
  - Central interchange would require additional land on the western side of the highway (less land than for option G1).
  - Would impact pedestrian and cycle route along Rowlins Road.
  - Noise and amenity impacts on Bridges and Rowlins roads due to changed local traffic conditions.
  - Access for Willowvale, Sims and Rose Valley roads require further consideration.
  - Major social impact (as per option G3 and option G1).
  - Confusing ...(not a very legible access).
  - Significant impact on Fern Street during construction (however, less than options G2 and G3 as temporary diversions could use Belinda Street).
  - The use of Bridges and Rowlins roads would significantly impact on sporting facilities, local school access and bus facilities.
  - Doesn’t complement local movement patterns and social patterns (safety issue around the park).
  - Significant impact in Gerringong during Belinda and Fern streets reconstruction (may need to close Fern Street).
  - Environmental and flooding impacts for Fern Street options around lagoon area.

3.4 Access option impacts on businesses presentation

Roger Gibbins, Business Impact Consultant, SGS presented the potential business impacts brought about by access options. Key points made in his presentation included:

• Context of study
  - Gerringong and Berry are highly reliant on health and community services, retailing, accommodation and hospitality (ie tourism).
  - Most jobs are filled from within the region.
  - There is a significant amount of out-commuting.
  - The workforce is largely ‘white collar’.
  - There is an ageing population in the towns.
  - The two towns are planning for only modest growth. Population growth around one per cent per annum into the future.

• A number of case studies of towns similar to Gerringong and Berry were examined. The findings were:
  - 10 per cent of businesses increased trade.
  - 48 per cent experienced no change.
  - 42 per cent decreased in trade (mainly service stations, eateries and food stores).
  - Other studies found that Berrima experienced an increase in tourism and business turnover whilst Mittagong experienced a 5.9 per cent loss of trade.

• Enquiries and interviews in Gerringong and Berry indicated:
  - Consultations stressed the importance of the design and location of town access and egress arrangements.
  - Business operators confirmed a high reliance on tourist trade (but not necessarily ‘long haul’ travellers).
Opportunities to enhance the appeal of the towns were identified with reduced through traffic.
Most visitors were 'destination' travellers and emphasised quality of facilities (eg the parks, car parks, caravan parking, etc).

Survey information as to what was important to people was presented and assessed against the various circulation patterns as a result of the access arrangement options. The following conclusions were drawn:

- **In terms of potential loss to trade:**
  - Gerringong is well placed to capture passing trade.
  - Based on the case studies, it is conservatively estimated that about three quarters of the passing trade could be lost if the town was by-passed tomorrow (ie if the upgrade was completed tomorrow and much of the ‘Sandtrack’ traffic shifted to it).
  - This is a worst case as enhanced tourism appeal is not factored in.
  - However, the loss will be spread over time (around 10 years) and will be subsumed by new trade from regional growth – employment will grow in net terms.

- **In terms of employment:**
  - Employment will parallel changes in business turnover.
  - Therefore there will be net gains with regional growth (64 jobs).

- **In terms of overall findings:**
  - Passing trade in Gerringong is around 6.5 per cent of turnover.
  - About three quarters of this could be lost if Gerringong was by-passed tomorrow (ie if the upgrade was completed tomorrow and much of the ‘Sandtrack’ traffic shifted to it).
  - This is a worst case as enhanced tourism appeal is not factored in.
  - However, the loss will be spread over time (around 10 years) and will be subsumed by new trade from regional growth – employment will grow in net terms.
  - Gerringong will prosper but some businesses that are focused on passing trade will need to re-adjust.
  - Town access arrangements are important for capturing long-haul passing trade but this is ancillary to tourism ‘destination’ trade.
  - Motorists prefer ‘through routes’ for legibility and convenience. Information on distances and services available is important in the stopover decision.
  - All access configurations meet the distance criteria but loop options are inferior on legibility and convenience.

### 3.5 Access options for evaluation

Having reviewed aspects of the various access arrangements, the group was now in a position to evaluate the options against the assessment criteria established earlier in the workshop. In summary the access options to be reviewed were:

- **Option G1** – A full central interchange at Sims and Bridges roads, with no access provided at Belinda or Fern streets.
- **Option G2** – Half interchanges provided to the north and south (north facing ramps at Fern Street and south facing ramps at Belinda Street).
- **Option G3** – A half interchange at Sims Road for northbound traffic, with southbound traffic exiting at Fern Street and entering at Belinda Street.
- **Option G2/6** – A full interchange provided at Belinda Street and a half interchange (north facing ramps) at Fern Street.
• Option G2/8 – A full interchange provided at Rose Valley Road with local traffic connected to Fern Street via a service road and a full interchange provided at Belinda Street.

• Option G3/5 – A half interchange at Sims Road for northbound traffic, a southbound off-ramp to Gerringong for light vehicles at Fern Street, a southbound off-ramp to Gerringong for all vehicles at Belinda Street and a southbound on-load ramp at Belinda Street.

Before the evaluation process, the group agreed (unanimously) that some of the options reviewed were so inferior to other options available that they did not warrant further assessment and should be discarded.

Options discarded by the group were:

• Option G2 – Half interchanges provided to the north and south (north facing ramps at Fern Street and south facing ramps at Belinda Street) because:
  - It will bring heavy vehicle traffic into Gerringong via Fern Street requiring an upgrade of Fern Street (for pavement strengthening - costly) and introduce adverse safety, noise and amenity issues to the north side of town.
  - The variations developed by the project team in response to community feedback (ie option G2/6 and option G2/8) perform better than option G2 whilst maintaining the benefits associated with option G2.

• Option G3 – A half interchange at Sims Road for northbound traffic, with southbound traffic exiting at Fern Street and entering at Belinda Street because:
  - It will bring heavy vehicle traffic into Fern Street requiring an upgrade of Fern Street (for pavement strengthening) and introduce safety, noise and amenity issues to the north side of town.
  - The variations developed by the project team in response to community feedback (option G3/5) perform better than option G3 whilst maintaining the benefits associated with option G3.

Hence the access options to take forward for assessment were:

• Option G1 – A full central interchange at Sims and Bridges roads, with no access provided at Belinda or Fern streets.

• Option G2/6 – A full interchange provided at Belinda Street and a half interchange (north facing ramps) at Fern Street.

• Option G2/8 – A full interchange provided at Rose Valley Road with local traffic connected to Fern Street via a service road and a full interchange provided at Belinda Street.

• Option G3/5 – A half interchange at Sims Road for northbound traffic, a southbound off-ramp to Gerringong for light vehicles at Fern Street, a southbound off-ramp to Gerringong for all vehicles at Belinda Street and a southbound on-load ramp at Belinda Street.

3.6 Assessment of the access options

The access options were assessed relatively and on a qualitative basis of how each option met each criteria on a scale of 1 through to 5 or using the qualitative terms Excellent (E), Very Good (VG), Good (G), Fair (F) or Poor (P). The best performing option was given the most appropriate rating and the other options given a rating based on their performance against that criterion relative to the best performing option.

Where information on a particular issue was incomplete, the group was requested to use the ‘collective wisdom’ of the participants undertaking the evaluation to determine the relativity of the options against the criterion in question. The group assessed the options against each criterion ‘on balance’ of the considerations of the various points earlier articulated for each criterion.
Once the qualitative evaluation was completed, the evaluation was scored using the weightings of the criteria and establishing a relative overall ranking for each option.

It should be noted that in the case of the assessment criteria ‘cater for general access vehicles’, the group agreed that the options could not be differentiated and were not scored against that criterion.

The evaluation matrix outlining the group’s assessment of the options against the criteria is shown Table 3.4.

<table>
<thead>
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<th>Assessment criteria</th>
<th>Weighting</th>
<th>Sub-total</th>
<th>Rank</th>
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</tr>
<tr>
<td>Option G2/8</td>
<td></td>
<td>362</td>
<td>1</td>
</tr>
<tr>
<td>Weighting</td>
<td>10%</td>
<td>362</td>
<td></td>
</tr>
<tr>
<td>Option G3/5</td>
<td></td>
<td>225</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3-4 Evaluation matrix – qualitative evaluation of the access options at Gerringong against the assessment criteria

Note: * indicates that against this criteria, the options could not be differentiated and as a result these were not scored in assessing the options.
The evaluation matrix indicated that using a qualitative analysis, option G2/8 on balance met the assessment criteria better than the other options. Option G2/6 was ranked the next best, followed by option G3/5 and finally option G1 was ranked fourth of those assessed.

### 3.7 Strategic relative cost estimates

The group was presented with relative construction cost estimates for the various access options to obtain some relativity between options. It was noted that the costs are strategic estimates and could only be used with confidence for relativity purposes. A summary of the cost information presented for comparison purposes is shown in Table 3.5.

#### Table 3-5 Gerringong options relative construction costs

<table>
<thead>
<tr>
<th>Options</th>
<th>Relative construction cost estimates ($million 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option G1</td>
<td>$14.6</td>
</tr>
<tr>
<td>Option G2/6</td>
<td>$20.9</td>
</tr>
<tr>
<td>Option G2/8</td>
<td>$20.7</td>
</tr>
<tr>
<td>Option G3/5</td>
<td>$21.7</td>
</tr>
</tbody>
</table>

### 3.8 Summary of option assessment rankings and relative cost estimates

A summary of the rankings of the access options based on the qualitative assessment together with the relative cost estimates was tabled in a value matrix (Table 3.6) so that the group could draw some conclusions as to which option provided best 'value for money'.

#### Table 3-6 Value matrix

<table>
<thead>
<tr>
<th>Options</th>
<th>Qualitative score / rank</th>
<th>Relative construction cost estimates ($million 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option G1</td>
<td>186 / 4</td>
<td>$14.6</td>
</tr>
<tr>
<td>Option G2/6</td>
<td>280 / 2</td>
<td>$20.9</td>
</tr>
<tr>
<td>Option G2/8</td>
<td>362 / 1</td>
<td>$20.7</td>
</tr>
<tr>
<td>Option G3/5</td>
<td>225 / 3</td>
<td>$21.7</td>
</tr>
</tbody>
</table>

### 3.9 Recommending a direction

As a result of the work undertaken, the group (in four focus groups) was asked, “Which option(s) should move forward to the next stage of development to progress the project?” The focus groups were also asked to record their reasons why. However, the preference would be ‘subject to’ certain identified issues being addressed.

The focus group conclusions as presented to the whole group are recorded below.

**Focus group 1**

We recommend option G2/8 moves forward to the next stage of development, because it:

- Best meets the needs of the community.
- Is the safest option (as per the assessment).
- Maintains the business viability of the town.
Subject to:
- Addressing environmental issues along Omega Flat.
- Confirming the feasibility of the option through more detailed design.
- Determining the constructability requirements and highlighting the closure of Fern Street during construction as being a major issue for the town.

Focus group 2
We recommend option G2/8 moves forward to the next stage of development, because it:
- Best meets our values / assessment criteria.
- Best meets our highest weighted value being ‘safety’.
- Has the greatest match with significant community support (ie retains two access points, maintains the cohesion of the town movements).
- Addresses access for the surrounding residents (ie Sims, Willowvale, Rose Valley roads).

Subject to:
- Communicating the workshop outcomes and rationale (this needs to be a priority and be present to the community to demonstrate transparency).
- Explaining the outcome of the workshop clearly to the community including the next steps in this process and how it will be involved and be able to contribute.

Focus group 3
We recommend option G2/8 moves forward to the next stage of development, because it:
- Best meets the access objectives / values.
- Provides the best value for money.

Subject to:
- Being able to adequately address the environmental and heritage constraints of the option.
- Resolving the loop or ramp options at Belinda Street.
- Consideration of further community consultation.

Focus group 4
We recommend option G2/8 moves forward to the next stage of development because (however option G2/6 should also move forward as a fallback option):
- The workshop group (which included a range of stakeholders, community participants, community feedback and the project team) identified option G2/8 as the best option meeting the balance of social, economic, environmental and functional considerations.
- However, option G2/6 has similar features to option G2/8 but also offers advantages of better visual cues to passing traffic and potential to mitigate the adverse heritage impacts option G2/8 may have at Renfrew Park. (However it should be noted that a separate interchange with Rose Valley Road would still be needed even if G2/6 were chosen.)

Subject to:
- Adverse environment and heritage impacts can be managed / mitigated (eg Renfrew Park and significant trees)
Before option G2/8 can be adopted:

- Further cultural and archaeological assessment need to be undertaken for both option G2/8 and option G2/6 (Indigenous and European).
- Resolution of the upgrade underpass arrangement at Belinda Street on option G2/8 and option G2/6.
- Investigate constructability at the northern and southern end of town.
- Cost review for both options need to take the above issues into account for further design.
- Resolution of the loop or ramp options at Belinda Street.

3.10 Recommendation of the workshop group

The workshop group unanimously agreed to recommend to the RTA to move option G2/8 forward to the next stage of development. This was based on the qualitative assessment of criteria which reflected the access objectives of the area that the project must achieve and its relative strategic cost estimates compared to the other options. However the recommendation was subject to satisfactory resolution of the issues identified in the workshop.

3.11 Suggested improvements

The workshop group listed the following as suggested improvements to option G2/8 to be considered as planning proceeds. These were recorded as:

- Consider shifting Rose Valley Road interchange further to the south to keep away from and minimise impact on historic Renfrew Park.
- Consider construction staging to minimise the disruption and potential closure of Fern Street.

3.12 Conclusion drawn

At the completion of the workshop, the group drew further conclusions from the work they had done. These included:

- Community feedback to the original access options has been instrumental in the development of the extra options assessed and in reaching the recommendation.
- The workshop process has been collaborative, involved all participants and has been transparent in its approach. Everyone has contributed and participants were satisfied with the workshop process and the outcomes.
- It was felt that the process was culturally appropriate, inclusive and the outcomes meet the needs of the stakeholders. Everyone worked together to achieve the outcomes.
- Community participation and consultation works to provide better outcomes.
- Follow up communication to the broader community through the project team should be a priority to support the process and the outcomes reached.
- The background information provided by the project team and the community feedback was professionally handled and well presented.
3.13 Where to from here?

Richard Merrett, Maunsell Project Manager outlined to the group the next steps in the planning process for the project. These included the need to:

- Acknowledge the agreement and acceptance of the assessment criteria.
- Acknowledge acceptance of the findings and conclusions of the workshop.
- Communicate the findings to the wider community through:
  - Community participant nominees.
  - Project website.
  - Media release.
  - Email to registered stakeholders.
- Prepare and publish the workshop report.
- Immediately notify potential landowners directly affected.
- Further consider the southern interchange alternative arrangements on option G2/8.
- Further consider environment and heritage impacts of the northern interchange arrangement on option G2/8.
- Communicate to the community that additional options were introduced to the assessment process because of community feedback and confirm the next steps and timing of the project’s development.
- Consider further community consultation in relation to the recommended option.
4.0 Berry access assessment

The information presented in this Chapter is a consolidation of the general outputs and perceptions of the workshop participants undertaking the Berry access arrangement stream. The participants involved in this stream are shown in Appendix A.

Participants would be requested to weight the assessment criteria (developed earlier), review the access arrangement options for Berry including the opportunities and considerations for each option. The participants would then qualitatively evaluate the options against the assessment criteria as well as the strategic cost estimates for each option. Finally the workshop participants would draw conclusions and make recommendations on access arrangements to move forward and progress the project.

4.1 Weighting of assessment criteria

The assessment criteria / values accepted by the group to evaluate the access options were:

A. Provide safer use for all users of the network.
B. Complement local movement patterns and the social network.
C. Improve access during flooding.
D. Provide appropriate emergency services access.
E. Cater for general access vehicles.
F. Minimise visual intrusion (to and from) the towns.
G. Easily legible access and intuitive access for all users.
H. Facilitate business and employment opportunities.
I. Mitigation of environmental impacts including noise, flora, fauna, dust, etc.
J. Provide access amenity at least to current or better level of service.
K. Accommodate interim traffic flow during construction.
L. Minimise impact on heritage elements.

Relative weighting of the assessment criteria was undertaken qualitatively by the whole group using a paired comparison approach. The discussion in undertaking this task was extensive and allowed the group to understand and appreciate the various perspectives represented in the workshop during the weighting process. The final weightings were reached on a consensus basis.

The group’s workings and their weightings of the assessment criteria are provided as Table 4.1.
Table 4-1 Berry weightings for the assessment criteria

<table>
<thead>
<tr>
<th>No</th>
<th>Assessment</th>
<th>Raw score</th>
<th>Relative weightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Provide safer use for all users of the network</td>
<td>17</td>
<td>17%</td>
</tr>
<tr>
<td>B</td>
<td>Complement local movement patterns and the social network</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>C</td>
<td>Improve access during flooding</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>D</td>
<td>Provide appropriate emergency services access</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>E</td>
<td>Cater for general access vehicles</td>
<td>-</td>
<td>.**</td>
</tr>
<tr>
<td>F</td>
<td>Minimise visual intrusion (to and from) the towns</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>G</td>
<td>Provide easily legible access and intuitive access for all users</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>H</td>
<td>Facilitate business and employment opportunities</td>
<td>10.5</td>
<td>10.5%</td>
</tr>
<tr>
<td>I</td>
<td>Mitigate environmental impacts including noise, flora, fauna, dust, etc</td>
<td>17</td>
<td>16%*</td>
</tr>
<tr>
<td>J</td>
<td>Provide access amenity at least to current or better level of service</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>K</td>
<td>Accommodate interim traffic flow during construction</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>L</td>
<td>Minimise impact on heritage elements</td>
<td>14.5</td>
<td>14.5%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>101</td>
<td>100%</td>
</tr>
</tbody>
</table>

Scoring matrix

The workings for the relative assessment are shown in Table 4.2.

Table 4-2 Workings for relative assessment criteria

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E**</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2A</td>
<td>2A</td>
<td>1A</td>
<td>2A</td>
<td>2A</td>
<td>2A</td>
<td>A/I</td>
<td>2A</td>
<td>3A</td>
<td>A/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>2B</td>
<td>1B</td>
<td>1B</td>
<td>B/F</td>
<td>B/G</td>
<td>1H</td>
<td>1I</td>
<td>B/J</td>
<td>3B</td>
<td>B/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>1C</td>
<td>1F</td>
<td>2G</td>
<td>1F</td>
<td>1I</td>
<td>2H</td>
<td>2I</td>
<td>2H</td>
<td>2H</td>
<td>2L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>2F</td>
<td>2G</td>
<td>3H</td>
<td>2F</td>
<td>2G</td>
<td>3H</td>
<td>3I</td>
<td>2J</td>
<td>3D</td>
<td>3L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>F</td>
<td></td>
<td>F/G</td>
<td>F/H</td>
<td>F/I</td>
<td>F/J</td>
<td>3F</td>
<td>F/L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
<td>G/H</td>
<td>2I</td>
<td>G/J</td>
<td>3G</td>
<td>2L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
<td>2I</td>
<td>H/J</td>
<td>3H</td>
<td>1L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2I</td>
<td>3I</td>
<td>1/L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>J</td>
<td>3J</td>
<td>2L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* It should be noted a minor arithmetic error was made during the workshop in calculating the weight of the criteria ‘mitigation of environmental impacts including noise, flora, fauna, dust, etc’ which had no bearing on the results but has been corrected in this report.

** Also it was decided by the group, prior to undertaking the paired comparison exercise, that the criteria ‘cater for general access vehicles’ was in reality a ‘given’ and would not assist in differentiating between the options. Consequently it was not weighted in the process.
Summary

The weighting of the assessment criteria using the paired comparison provided the following order of importance (top most important):

- Provide safer use for all users of the network.
- Mitigate environment impacts including noise, flora, fauna, dust etc.
- Minimise impact on heritage elements.
- Facilitate business and employment opportunities.
- Minimise visual intrusion (to and from) the towns.
- Provide easily legible access and intuitive access for all users.
- Provide access amenity at least to current or better level of service.
- Complement local movement patterns and the social network.
- Improve access during flooding.
- Provide appropriate emergency services access.

Although important and will need to be considered when undertaking further work on the recommended option, ‘accommodate interim traffic flow during construction’ was not considered as important as the other criteria when compared in pairs and scored zero. As a result, it was not used when evaluating the access options.

4.2 Access option description presentation

The project team presented to the workshop group the various access options in order to provide a common understanding and allow the group to add from their various perspectives further opportunities or considerations (advantages or disadvantages). This would allow the group to then evaluate the various options against the assessment criteria.

Overview

- A summary of the current access arrangements is:
  - Highway descends from the ridge to the east of town.
  - Highway traffic passes through the centre of town.
  - Local road network emanates from Berry.
  - Highway is flood affected in the vicinity of Broughton Mill Creek.
  - Heritage area of Pulman Street is important.
  - Community sports fields, pony club, and Mark Radium Park need to be considered.
  - There are distinctive ‘old’ and ‘new’ areas of Berry.

- In terms of the highway upgrade and future conditions:
  - The highway will leave the ridge and skirt to the north of the town.
  - Pass over Woodhill Mountain Road and under Kangaroo Valley Road.
  - Avoids direct impact on Pulman Street heritage area and sports fields.
  - Heavy vehicles and through traffic will be removed from Queen Street.
  - Highway will be immune from flooding.

- Conclusions drawn in the access options development were:
  - Highway upgrade includes an overpass at Kangaroo Valley Road and underpass at Woodhill Mountain Road – beneficial to use these.
- At-grade intersections not considered due to road safety concerns.
- Options for access at western, central, and eastern parts of town.

- Access options considered:
  - Highway access is required into and out of Berry in both directions.
  - Southbound – four combinations of ramps.
  - Northbound – six combinations of ramps.
  - 24 possible combinations of ramps.

- In terms of community feedback:
  - A number of interviews undertaken, written submissions and feedback forms received.
  - Key community points raised included:
    - Road safety.
    - Local traffic management.
    - Visual and noise impacts for local residents.
    - Local business and tourism.
    - Travel time and efficiency.
    - Value for money.
    - Access during flooding and emergency events.
    - Views to the town – amenity and character.
    - Private property value impacts.
    - Pedestrian and cyclists needs.

The project team then presented each of the option combinations (ie southbound in and out of Berry combinations and northbound combinations in and out of Berry) in terms of key features and opportunities and considerations. After the presentation of each option, opportunities (advantages) and considerations (disadvantages) as outlined in the presentation were reviewed by the group and where appropriate amended or added to. Sections 4.3 and 4.4 present a summary of the review. Sketches of the various option combinations as presented by the project team can be found in Appendix C.
4.3 Southbound combination options

Southbound combination option B9/B4

- Key features:
  - Removes traffic from Pulman Street heritage area.
  - Enters and exits a small residential area.
  - Avoids acquisition of Mark Radium Park. (partial acquisition may still be required for highway upgrade)
  - Relatively simple construction.
  - Kangaroo Valley Road residents required to travel into Berry if heading to Nowra.
  - Provides a direct entry and exit for Berry CBD and parking area.
  - Up to 28 properties potentially affected by changed noise environment.

- Opportunities (with amendments and additions by the group shown in *italics*):
  - Direct and convenient access to south (B9).
  - Cost effective (B9).
  - Minimal impact to properties (B9).
  - Exit time to parking minimal, time to access Central Business District minimal (option B9).
  - Logical navigation - same in / same out (option B9).
  - Opportunity to reconfigure Queen street.
  - Provides direct access (option B4).
  - Spreads traffic through Berry (option B4).
  - Cost effective and easy to construct (option B4).
  - Minimal footprint and impact to local roads (option B4).
  - Maintains heritage precinct (option B4).
  - Fewer properties impacted (option B4).
  - Minimal visual impact (option B4).
  - Good visual cue – town would be seen from the highway (option B4).
  - Time to parking minimal (option B4).

- Considerations (with amendments and additions by the group shown in *italics*):
  - Impacts established traffic patterns (option B9).
  - Impact on noise, amenity and safety of Alexandra Street residents (option B9).
  - Alexandra Street and North Street residents and pedestrians (option B4).
  - Changes established traffic patterns (option B4).
  - Noise and visual amenity (option B4).
  - Local business / tourism (option B4).
  - Motorists would need to ‘back track’ in this option.
  - May miss some passing trade.
  - Pedestrians in Alexandra Street will be disadvantaged.
  - Less amicable quality in entering Berry.
Southbound combination Option B8/B4

- Key features:
  - Impacts on Mark Radium Park.
  - Removes traffic from Pulman Street heritage area.
  - Off-ramp enters a small residential area.
  - On-ramp makes use of existing RTA highway corridor reserve.
  - Provides a direct entry to Berry Central Business District and parking area.
  - Up to 20 properties potentially affected by changed noise environment.

- Opportunities (with amendments and additions by the group shown in *italics*):
  - Minimal impact on existing traffic arrangements and minor roads (Option B8).
  - Simple, uncomplicated, safe (option B8).
  - *Logical and legible* (option B8).
  - Cost effective (option B8).
  - Convenient for tourists (option B8).
  - Maintains amenity of Berry (option B8).
  - Provides direct access (option B4).
  - Spreads traffic through Berry (option B4).
  - Cost effective and easy to construct (option B4).
  - Minimal footprint and impact to local roads (option B4).
  - Maintains heritage precinct (option B4).
  - Fewer properties impacted (option B4).
  - Minimal visual impact (option B4).

- Considerations (with amendments and additions by the group shown in *italics*):
  - Proximity and access to Mark Radium Park (option B8).
  - *Visual impact of on ramp from Mark Radium Park* (option B8).
  - Legibility of route.
  - Alexandra and North Street residents and pedestrians (option B4).
  - Change established traffic patterns (option B4).
  - Noise and visual amenity (option B4).
  - Local business / tourism (option B4).
Southbound combination option B9/B5

- **Key features:**
  - On-ramp exits a small residential area.
  - Off-ramp maintains existing ‘gateway’ into Berry via Pulman Street heritage precinct and Mananga Homestead.
  - Avoids acquisition of Mark Radium Park (partial acquisition may still be required for highway upgrade).
  - Entry to Berry is along Queen Street (drivers pass town shops).
  - Kangaroo Valley Road residents required to travel into Berry if heading to Nowra.
  - Off-ramp increases road footprint on narrow ridge.
  - On-ramp provides a direct exit for Berry Central Business District and parking area.
  - Existing highway near bowling club is flood prone.
  - Up to 17 properties potentially affected by changed noise environment.

- **Opportunities (with amendments and additions by the group shown in italics):**
  - Direct and convenient access to south (option B9).
  - Cost effective (option B9).
  - Minimal impact to properties (option B9).
  - *Doesn’t impact on access to Woodhill Mountain Road, Beach Road, etc.*
  - Maintains existing east / west traffic flow (option B5).
  - Retains through traffic on part of Queen Street (option B5).
  - Limited impact on minor roads (option B5).
  - Maintains amenity of entering Berry (option B5).
  - Easy and safe access for Shoalhaven Heads, Coolangatta Road (option B5).
  - Good combination with northbound Option B7 (option B5).

- **Considerations:**
  - Impacts established traffic patterns (option B9).
  - Noise, amenity and safety of Alexandra Street residents (option B9).
  - Length of access ramp (option B5).
  - Requires flood mitigation (option B5).
Southbound combination option B8/B5

- **Key features:**
  - Off-ramp maintains existing 'gateway' into Berry and traffic patterns through Berry via Pulman Street heritage precinct and Mananga Homestead.
  - Entry to Berry is along Queen Street (drivers pass town shops).
  - Increases road footprint on narrow ridge.
  - Existing highway near bowling club is flood prone.
  - Impacts on Mark Radium Park.
  - Makes use of existing RTA highway corridor reserve.
  - Up to nine properties potentially affected by changed noise environment.

- **Opportunities:**
  - Minimal impact on existing traffic arrangements and minor roads (option B8).
  - Simple, uncomplicated, safe (option B8).
  - Cost effective (option B8).
  - Convenient for tourists (option B8).
  - Maintains amenity of Berry (option B8).
  - Maintains existing east / west traffic flow (option B5 and B8).
  - Retains through traffic on Queen Street (option B5 and B8).
  - Limited impact on minor roads (option B5).
  - Maintains amenity of entering Berry (option B5).
  - Easy and safe access for Shoalhaven Heads, Coolangatta Road (option B5).
  - Good combination with northbound Option B7 (option B5).

- **Considerations (with amendments and additions by the group shown in *italics*:)
  - Proximity and access to Mark Radium Park (option B8).
  - Length of access ramp (option B5).
  - Requires flood mitigation (option B5).
4.4 Northbound combination options

Northbound combination option B1/B6

- Key features:
  - On-ramp located away from residential areas.
  - Removes traffic from Pulman Street heritage area.
  - On-ramp occupies large area of rural land.
  - Off-ramp provides good access to Kangaroo Valley Road.
  - Off-ramp makes use of existing RTA acquired property.
  - On-ramp requires an additional lane on relatively long bridge.
  - Off-ramp enters a small residential area.
  - Existing highway near bowling club is flood prone.
  - Off-ramp does not require lengthening of Kangaroo Valley Road bridge.
  - Up to 15 properties potentially affected by changed noise environment.

- Opportunities:
  - Uses existing highway reserve (option B1).
  - Simple, safe, efficient (option B1).
  - Minimal road and bridge infrastructure (option B1).
  - Attractive entry to Berry (option B1).
  - Minimal directly impacted properties (option B1).
  - Safe and practical (option B6).
  - Minimal visual impact from town (option B6).
  - Limited impact on existing traffic arrangements (option B6).
  - Affects only one property (option B6).
  - Removes traffic from heritage area (option B6).
  - Brings traffic through Berry before exiting (option B6).

- Considerations:
  - Increases traffic and safety concerns in residential area (option B1).
  - Visual and noise impacts to residential amenity (option B1).
  - Residential property values (option B1).
  - Increased traffic, noise and visual impact on rural Woodhill Mountain Road (option B6).
  - Property values (option B6).
  - Safety of loop arrangement (option B6).
Northbound combination option B2/B6

- **Key Features:**
  - On-ramp located away from residential areas.
  - Removes traffic from Pulman Street heritage area.
  - On-ramp occupies large area of rural land.
  - Off-ramp provides good access to Kangaroo Valley Road.
  - Off-ramp enters a small residential area.
  - On-ramp requires an additional lane on relatively long bridge.
  - Existing highway near bowling club is flood prone.
  - Off-ramp requires a wider excavation and lengthening of Kangaroo Valley Road bridge.
  - Up to six properties potentially affected by changed noise environment.

- **Opportunities:**
  - Avoids turn or roundabout to access Berry (option B2).
  - Simple design – only one intersection (option B2).
  - Less impact to local roads (option B2 – than options B1 and B3).
  - Keeps traffic away from residential area – less residential impact (option B2).
  - Safe and practical (option B6).
  - Minimal visual impact from town (option B6).
  - Limited impact on existing traffic arrangements (option B6).
  - Affects only one property (option B6).
  - Removes traffic from heritage area (option B6).
  - Brings traffic through Berry before exiting (option B6).

- **Considerations:**
  - Driver management of wide bend – safety (option B2).
  - Visual and noise impacts to residential amenity (option B2).
  - Residential property values (option B2).
  - Increased traffic, noise and visual impact on rural Woodhill Mountain Road (option B6).
  - Property values (option B6).
  - Safety of loop arrangement (option B6).
Northbound combination option B3/B6

- Key features:
  - On-ramp located away from residential areas.
  - Removes traffic from Pulman Street heritage area.
  - On-ramp occupies large area of rural land.
  - Off-ramp provides good access to Kangaroo Valley Road.
  - Off-ramp enters a small residential area.
  - On-ramp requires an additional lane on relatively long bridge.
  - Existing highway near bowling club is flood prone.
  - Off-ramp requires a wider excavation and lengthening of Kangaroo Valley Road bridge.
  - Up to 10 properties potentially affected by changed noise environment.

- Opportunities:
  - None (option B3).
  - Safe and practical (option B6).
  - Minimal visual impact from town (option B6).
  - Limited impact on existing traffic arrangements (option B6).
  - Affects only one property (option B6).
  - Removes traffic from heritage area (option B6).
  - Brings traffic through Berry before exiting (option B6).

- Considerations:
  - Complicated, indirect arrangement (option B3).
  - Increases traffic at Kangaroo Valley junction (option B3).
  - Safety and local access for North Street residents (option B3).
  - Noise and visual impacts (option B3).
  - Property values (option B3).
  - Increased traffic, noise and visual impact on rural Woodhill Mountain Road (option B6).
  - Property values (option B6).
  - Safety of loop arrangement (option B6).
Northbound combination option B1/B7

- Key features:
  - Off-ramp provides good access to Kangaroo Valley Road.
  - On-ramp maintains existing northbound traffic patterns – close to Pulman Street heritage precinct and Mananga Homestead.
  - Off-ramp makes use of existing RTA acquired property.
  - On-ramp located away from residential areas.
  - On-ramp requires additional overpass of the upgraded highway.
  - Off-ramp enters a small residential area.
  - Existing highway near bowling club is flood prone.
  - Off-ramp does not require a wider excavation and lengthening of Kangaroo Valley Road bridge.
  - Up to 17 properties potentially affected by changed noise environment.

- Opportunities:
  - Uses existing highway reserve (option B1).
  - Simple, safe and efficient (option B1).
  - Minimal road and bridge infrastructure (option B1).
  - Attractive entry to Berry (option B1).
  - Minimal directly impacted properties (option B1).
  - Safe, logical (option B7).
  - Generally follows footprint of existing highway (option B7).
  - Maintains existing traffic flow, particularly along Queen Street (option B7).
  - Scenic exit from Berry (option B7).

- Considerations:
  - Increases traffic and safety concerns in residential area (option B1).
  - Visual and noise impacts to residential amenity (option B1).
  - Residential property values (option B1).
  - Length of access ramp (option B7).
  - Visual amenity of flyover (option B7).
  - Potential loss of trees lining street (option B7).
Northbound combination option B2/B7

- Key features:
  - Off-ramp provides good access to Kangaroo Valley Road.
  - On-ramp maintains existing northbound traffic patterns – close to Pulman Street heritage precinct and Mananga Homestead.
  - On-ramp located away from residential areas.
  - On-ramp requires additional overpass of the upgraded highway.
  - Off-ramp enters a small residential area.
  - Existing highway near bowling club is flood prone.
  - Off-ramp requires a wider excavation and lengthening of Kangaroo Valley Road bridge.
  - Up to eight properties potentially affected by changed noise environment.

- Opportunities:
  - Avoids turn or roundabout to access Berry (option B2).
  - Simple design – only one intersection (option B2).
  - Less impact to local roads (option B2).
  - Keeps traffic away from residential area – less residential impact (option B2).
  - Safe, logical (option B7).
  - Generally follows footprint of existing highway (option B7).
  - Maintains existing traffic flow, particularly along Queen Street (option B7).
  - Scenic exit from Berry (option B7).

- Considerations:
  - Driver management of wide bend – safety (option B2).
  - Visual and noise impacts to residential amenity (option B2).
  - Property values (option B2).
  - Length of access ramp (option B7).
  - Visual amenity of flyover (option B7).
  - Potential loss of trees lining street (option B7).
Northbound combination option B3/B7

- Key features:
  - Off-ramp provides good access to Kangaroo Valley Road.
  - On-ramp maintains existing northbound traffic patterns – close to Pulman Street heritage precinct and Mananga Homestead.
  - On-ramp located away from residential areas.
  - On-ramp requires additional overpass of the upgraded highway.
  - Off-ramp enters a small residential area.
  - Existing highway near bowling club is flood prone.
  - Off-ramp requires a wider excavation and lengthening of Kangaroo Valley Road bridge.
  - Up to 12 properties potentially affected by changed noise environment.

- Opportunities:
  - None (option B3).
  - Safe, logical (option B7).
  - Generally follows footprint of existing highway (option B7).
  - Maintains existing traffic flow, particularly along Queen Street (option B7).
  - Scenic exit from Berry (option B7).

- Considerations:
  - Complicated, indirect arrangement (option B3).
  - Increases traffic at Kangaroo Valley junction (option B3).
  - Safety and local access for North Street residents (option B3).
  - Noise and visual impacts (option B3).
  - Property values (option B3).
  - Length of access ramp (option B7).
  - Visual amenity of flyover (option B7).
  - Potential loss of trees lining street (option B7).
4.5 Southbound combination access options for evaluation

Having reviewed aspects of the various southbound combination options, the group was now in a position to evaluate the options against the assessment criteria established earlier in the workshop. In summary the southbound combination access options reviewed were:

- Option B8/B4
- Option B9/B4
- Option B8/B5
- Option B9/B5

Before the evaluation process, the group was asked whether any option was so inferior to other options available that it did not warrant further assessment and should be removed from further consideration. The group unanimously agreed that all four option combinations were considered necessary to be evaluated against the assessment criteria.

4.6 Assessment of the southbound access options

The access options were assessed relatively and on a qualitative basis of how each option met each criterion on a scale of 1 through to 5 or using the qualitative terms Excellent (E), Very Good (VG), Good (G), Fair (F) or Poor (P). The best performing option was given the most appropriate rating and the other options given a rating based on their performance against that criterion relative to the best performing option.

Where information on a particular issue was incomplete, the group was requested to use the ‘collective wisdom’ of the participants undertaking the evaluation to determine the relativity of the options against the criterion in question. The group assessed the options against each criterion ‘on balance’ of the considerations of the various points earlier articulated for each criterion.

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

The evaluation matrix outlining the group’s assessment of the options against the criteria is provided as Table 4.3.
Table 4-3  Evaluation matrix - qualitative evaluation of the southbound combination access options at Berry against the assessment criteria

<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Provide safe use for all users of the network</th>
<th>Complement local movement patterns &amp; the social network</th>
<th>Improve access during flooding</th>
<th>Provide appropriate emergency services access</th>
<th>Minimise visual intrusion (to and from) the town</th>
<th>Easily legible access &amp; intuitive access for users</th>
<th>Facilitate business &amp; employment opportunities</th>
<th>Mitigation of environmental impacts including noise, flora, fauna, dust etc</th>
<th>Provide access amenity at least to current or better level of service</th>
<th>Minimise impact on heritage elements</th>
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* It should be noted some minor arithmetic errors were made during the workshop in calculating scores which had no bearing on the results or rankings but have been corrected in this report.

There were very clear rankings of the option combinations for the southbound direction.

The most favoured southbound combination using a qualitative analysis was option B8/B5 as it met (on balance) the assessment criteria better than the other options. It most closely followed the current north-side entry (B5) through the gateway to Berry, allows traffic to move as it currently does down the main street, along Queen Street then exit at the southern end (B8) to rejoin the road to Nowra.
There was a clear differential between the other three combination options for southbound movements. Option B9/B4 with both movements in new positions at the end of Alexandra Street was clearly unfavoured. There was some discussion about the option B5 being flood affected.

4.7 Northbound combination access options for evaluation

Having reviewed aspects of the various northbound combination access arrangements, the group was then in a position to evaluate the options against the assessment criteria established earlier in the workshop. In summary the northbound combination access options reviewed were:

- Option B1/B6
- Option B2/B6
- Option B3/B6
- Option B1/B7
- Option B2/B7
- Option B3/B7

Before the evaluation process, the group was asked whether any option was so inferior to other options available that it did not warrant further assessment and should be removed from further consideration.

The workshop group unanimously considered that option B3 was so inferior that any combination with option B3 should be removed from further evaluation (ie option B3/B6 and option B3/B7).

The reasons recorded by the group for removing option combinations containing option B3 were:

- The route was indirect and overly intrusive into the residential areas.
- Option B2 provides the same function with less adverse impact.
- Option B3 impacts a greater number of properties.
- Very strong community feedback and resistance to option B3 has been documented.

Hence the combination access options to move forward for assessment were:

- Option B1/B6
- Option B2/B6
- Option B1/B7
- Option B2/B7

4.8 Assessment of the northbound access options

The access options were assessed relatively and on a qualitative basis of how each option met each criteria on a scale of 1 through to 5 or using the qualitative terms Excellent (E), Very Good (VG), Good (G), Fair (F) or Poor (P). The best performing option was given most appropriate rating and the other options given a rating based on their performance against that criterion relative to the best performing option.

Where information on a particular issue was incomplete, the group was requested to use the ‘collective wisdom’ of the participants undertaking the evaluation to determine the relativity of the options against the criterion in question.
The group assessed the options against each criterion ‘on balance’ of the considerations of the various points earlier articulated for each criterion.

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

The evaluation matrix outlining the group’s assessment of the options against the criteria is provided as Table 4.4.

Table 4-4 Evaluation matrix - qualitative evaluation of the northbound combination access options at Berry against the assessment criteria

<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Provide safe use for all users of the network</th>
<th>Complement local movement patterns &amp; the social network</th>
<th>Improve access during flooding</th>
<th>Provide appropriate emergency services access</th>
<th>Minimise visual intrusion (to and from) the town</th>
<th>Easily legible access &amp; intuitive access for users</th>
<th>Facilitate business &amp; employment opportunities</th>
<th>Mitigation of environmental impacts including noise, flora, fauna, dust etc</th>
<th>Minimise impact on heritage elements</th>
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<td>4%</td>
<td>3%</td>
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<td>10.5%</td>
<td>16%</td>
<td>9%</td>
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<td>Option B1/B6</td>
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<td>2 F</td>
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<td>Sub-total</td>
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<td>24</td>
<td>4 15 18 27 52.5 48 27 29</td>
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<tr>
<td>Option B2/B7</td>
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* It should be noted some minor arithmetic errors were made during the workshop in calculating scores which had no bearing on the results or rankings but have been corrected in this report.
It should also be noted that where the difference in score between options was not greater than the value of the highest weighted criteria, the options were considered equally ranked as the difference in score was not considered significant enough to differentiate between them.

The evaluation matrix indicated that using a qualitative analysis, option B2/B6 and option B2/B7 on balance met the assessment criteria better than the other options. Option B1/B6 and option B1/B7 were significantly less than the top ranked options but again did not differ from each other significantly and were ranked the same.

It was noted by the group that option B2 (common to both highest ranked options) is in the very south of the town and that both option B6 and option B7 are flood affected.

4.9 Strategic relative cost estimates

The group was presented with relative construction cost estimates for the various northbound and southbound combination access options to obtain some relativity between options. It was noted that the costs (at this stage) were strategic estimates and could only be used with confidence for relativity purposes. A summary of the cost information presented for comparison purposes is provided in Table 4.5.

<table>
<thead>
<tr>
<th>Combination access options</th>
<th>Relative construction cost estimates ($million 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Southbound</strong></td>
<td></td>
</tr>
<tr>
<td>Option B9/B4</td>
<td>$1.8</td>
</tr>
<tr>
<td>Option B8/B4</td>
<td>$3.3</td>
</tr>
<tr>
<td>Option B9/B5</td>
<td>$6.2</td>
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<tr>
<td>Option B8/B5</td>
<td>$7.7</td>
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<tr>
<td><strong>Northbound</strong></td>
<td></td>
</tr>
<tr>
<td>Option B1/B6</td>
<td>$10.0</td>
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</tr>
<tr>
<td>Option B3/B6</td>
<td>$12.9</td>
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<tr>
<td>Option B1/B7</td>
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<td>Option B2/B7</td>
<td>$12.1</td>
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<td>Option B3/B7</td>
<td>$12.8</td>
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4.10 Summary of option assessment rankings and relative cost estimates

A summary of the rankings of the access options based on the qualitative assessment together with the relative cost estimates was tabled in a value matrix (Table 4.6) so that the group could draw some conclusions as to which option(s) provided best ‘value for money’.

Table 4-6 Value matrix

<table>
<thead>
<tr>
<th>Options</th>
<th>Qualitative score / rank</th>
<th>Relative construction cost estimates ($million)</th>
</tr>
</thead>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Option B9/B4</td>
<td>286.5 / 4</td>
<td>$1.8</td>
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<tr>
<td>Option B8/B4</td>
<td>337.5 / 2</td>
<td>$3.3</td>
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<tr>
<td>Option B9/B5</td>
<td>302.5 / 3</td>
<td>$6.2</td>
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<tr>
<td>Option B8/B5</td>
<td>370.5 / 1</td>
<td>$7.7</td>
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<tr>
<td>Northbound</td>
<td></td>
<td></td>
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<tr>
<td>Option B1/B6</td>
<td>281 / 3</td>
<td>$10.0</td>
</tr>
<tr>
<td>Option B2/B4</td>
<td>431.5 / 1</td>
<td>$12.2</td>
</tr>
<tr>
<td>Option B1/B7</td>
<td>295.5 / 3</td>
<td>$9.9</td>
</tr>
<tr>
<td>Option B2/B7</td>
<td>446 / 1</td>
<td>$12.1</td>
</tr>
</tbody>
</table>
4.11 Checking the logic of the combinations, ranking and costs

It was noted that if option B7 and option B5 were constructed together at the northern end of Berry, there would be some cost advantages.

The combination of the top two ranked northbound combination options with the top ranked southbound combination options as well as the second ranked southbound combination option (because of the significantly less capital cost) provides the following perspective.

Table 4-7 Combination rankings and costs

<table>
<thead>
<tr>
<th>COMBINATIONS</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northbound</td>
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<td></td>
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<tr>
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<td>B2/B6</td>
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<td>B5/B8</td>
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<tr>
<td>B2/B7</td>
<td>Equal 1</td>
<td>B4/B8</td>
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</table>

The group discussed at length the progressing to the next stage of planning, the southbound combination option B4/B8. The significant difference in capital cost estimates to the recommended option B5/B8 indicates it should progress for further consideration.

The group discussed the combinations at length. However the logic of combining the northbound and southbound combination access options which were ranked ‘first-preferred’ was confirmed.

Questions about refining combination option B7/B5 continued and included suggestions for realignment as well as potential to consider option B7 passing under the upgrade bridge structure before rising to join the northbound lanes of the upgrade. The cost savings potential of combining B7/B5 should be explored as planning and design is further developed.
4.12 Suggested improvements

The workshop group discussed two areas of suggested improvements for further consideration as planning proceeds. First, the community feedback had a number of ideas. Second, the workshop group identified ideas and suggestions to improve the value of the recommended access options.

Community feedback ideas

- Alternative Berry access options from the community feedback are:
  - **Northbound:**
    - Three-way interchange at Kangaroo Valley Road (four submissions).
    - Over / underpass from existing highway in the vicinity of the RTA stock pile (two submissions).
    - Northbound off-ramp from upgraded highway in the vicinity of Huntingdale Park Road to a roundabout at Kangaroo Valley Road (one submission).
  - **Southbound:**
    - Full interchange at Kangaroo Valley Road plus southbound access into Berry at Alexandra Street and exit to Nowra at Alexandra Street (one submission).

The workshop group discussed these suggestions and resolved as follows:

- **For northbound:**
  - Consider and evaluate the possibility of a northbound on-load ramp from Kangaroo Valley Road to the Berry bypass in conjunction with the alternatives to flood access on the northern side of town.
  - Do not pursue a northbound off-ramp from the upgraded highway in the vicinity of Huntingdale Park Road to a roundabout at Kangaroo Valley Road because of the proximity of the intersection to the bridge and Huntingdale Park Road; the safety of a right turn required to access Berry and the superior safety and legibility of the option B2 access arrangement.

- **For southbound:**
  - Do not pursue a full interchange at Kangaroo Valley Road plus southbound access into Berry at Alexandra Street and exit to Nowra at Alexandra Street any further (refer to the poor result in the evaluation of combination option B9/B4).

In addition, the workshop group considered the following:

- Create a land bridge / tunnel at the junction of the upgrade and Kangaroo Valley Road and install a roundabout at the top to allow all needed movements. The group dismissed this idea based on a range of concerns including cost, duplication of north side access options, etc. The group agreed this should not be pursued.
- Option B8 implications on Mark Radium Park are significant in terms of land take, possibly due to the embankment to manage the gradient of the ramp. The project team was asked to reconsider the geometry of option B8 with a suggestion to move the on-load ramp to join the upgrade further to the south and reducing the embankment height and land take of the park. The group agreed this should be pursued.
- Refine Combination option B7/B5 on the north side of Berry to realign access to reduce the length and property impacts. The group agreed this should be pursued.
• Review how option B7 joins onto the highway and consider the opportunity of allowing it to pass under the upgrade bridge and rise to the northbound lanes of the upgrade on the western side, thus avoiding the bridge structure over all of the upgrade lanes. The group agreed this should be pursued.

• The implications of flooding on the routes to options B6 and option B7 as well as option B5 before reaching Berry township have to be considered further. The group agreed that the following should be pursued:
  - Review the scope of works and costs associated with improving the performance of options B6, B7 and B5 and consider the best value strategy for Berry access in times of flooding in conjunction with the possibilities of:
    ▪ A northbound on-load ramp from Kangaroo Valley Road with provision for contra-flow in times of flooding.
    ▪ Combination option B9/B4 installation (southbound solution only) for emergency use only with lockable boom gates installed.
    ▪ Raising the heights of local roads which are conduits for traffic on options B6, B7 and B5.

4.13 Recommendation of the workshop group

As a result of its deliberations, the workshop group recommended that combination option B2/B7 with B5/B8 and combination option B2/B6 with B5/B8 should be moved forward for further investigation as the recommended option to progress the project.

This was based on the qualitative assessment of criteria considered important which reflected the access objectives of the area that the project must achieve and its relative strategic cost estimates compared to the other options. However the recommendation was subject to satisfactory resolution of the issues identified in the workshop.

The access combination option B2/B6 with B4/B8 and combination option B2/B7 with B4/B8 should only be considered further if after more detailed investigation, the recommended combinations are found to have fatal flaws. No other displayed combination of access options should be considered further.
### Conclusion drawn

At the completion of the workshop, the group drew further conclusions from the workshop. These included:

- All participants of the Berry access stream of the workshop gained a good understanding of the access options for Berry.
- Berry will be a more attractive destination after the upgrade is in place with any of the recommended access options proposed.
- The impact on Mark Radium Park remains a sensitive community issue.
- The recommended access option(s) were those closest to the existing accesses.
- The access options were assessed against criteria which were developed in the workshop and reflected what the access to the town must do to be successful. As a result some access options were preferred over the others. It was noted that some options ranked equally in the assessment and although recommended still require further investigation.
- Some issues such as flooding and heritage were not resolved completely and need further investigation and measures to address them (to refine and progress the recommended options).
- A strong trend in community feedback reflected support to maintain the existing east-west traffic flow arrangement, utilising the existing highway and minimising changes to local traffic patterns and impacts to residential areas. However, support was expressed for further consideration of a northbound on-ramp at Kangaroo Valley Road.
- Safety was a major consideration in the assessment but was not a significant differentiator for Berry’s southbound access options because all options would be designed to meet safety requirements.
- The second most significant consideration was the impacts to business, tourism, amenity and functionality of the town (ie the way changes of access points and the movement paths that result from these positions, influence the movement of people and traffic through the town, their impact on the businesses as well as the social structures and lives of residents).
- Further investigate the following suggestions as planning proceeds:
  - A northbound on-load ramp at Kangaroo Valley Road.
  - Flood immunity at the north end of the town (ie costs, alternatives and trade-offs).
  - Modifications to option B8 that addresses Mark Radium Park impacts (eg commence the southbound on-load ramp further to the south than presently shown).
  - Check the relative safety of the recommended options (ie access points, structures and implications of resultant travel paths and conflict points, etc).
  - Refining the ramps on options B5 and B7 to reduce impacts (eg visual and land-take).
4.15 Where to from here?

Ron de Rooy, RTA Project Manager, outlined to the group the next steps in the planning process for the project. These included:

- It is clear that as a result of consultation with the community and this workshop which enabled other stakeholders to contribute, that much of the local community does not desire changes to existing access points and traffic patterns for Berry.
- The project team has yet to fully address flooding and heritage, and final solutions need to address these aspects.
- Two combinations of northbound and southbound ramp combinations have been recommended to move forward for further detailed investigation and design development. These are combination option B2/B7 with B5/B8 and combination option B2/B6 with B5/B8.
- Two further combination options (being combination option B2/B6 with B4/B8 and combination option B2/B7 with B4/B8) are a fall back position only if further consideration of the recommended combination options are found to have fatal flaws; or the cost savings in the refinement of option B5 and option B7 do not achieve the extent of savings expected and the cost differentials demand one or either of these be reconsidered.
- All remaining access options and combinations are removed from further consideration.
- The timeline for the project is expected to see the recommendations for access options presented for display to the community by mid 2009.
Not used
## Appendix A List of participants

### A1.0 Access to Gerringong and Berry option assessment workshop – participants list

<table>
<thead>
<tr>
<th>Name</th>
<th>Area of expertise</th>
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<tbody>
<tr>
<td><strong>Project stakeholders</strong></td>
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<tr>
<td>Bryan Whittaker</td>
<td>Director of Engineering and Works, Kiama Municipal Council</td>
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<tr>
<td>Greg Currie</td>
<td>Gerringong Chamber of Commerce</td>
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<tr>
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<td>Adam Berry</td>
<td>Community Consultation Officer</td>
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<tr>
<td>Louisa Rebec</td>
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<tr>
<td>Richard Merrett</td>
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<td>Jon Williamson</td>
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<td>Scott Aitken</td>
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<td>Gislind Seitz</td>
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<tr>
<td>Ross Prestipino</td>
<td>Facilitator, Australian Centre for Value Management</td>
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<tr>
<td>Alan Butler</td>
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<td>Christine Marsden</td>
<td>Public Participation Facilitator, Quatro</td>
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## A2.0 Access to Gerringong option assessment workshop – participants list

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<th>Area of expertise</th>
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<tr>
<td><strong>Project stakeholders</strong></td>
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<tr>
<td>Bryan Whittaker</td>
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<td>Gerringong Chamber of Commerce</td>
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<td>John Smith</td>
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<td>Aboriginal Focus Group</td>
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<td>Ross Prestipino</td>
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### A3.0 Access to Berry option assessment workshop – participants list

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<td><strong>Project stakeholders</strong></td>
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<tr>
<td>John Gould</td>
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<td>Melanie Musgrove</td>
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<tr>
<td>Alan Butler</td>
<td>Facilitator, Australian Centre for Value Management</td>
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Appendix B  Gerringong access options

B1.0  Option G1

South

Central

No access to the highway

Exit from and entrance to the highway

North

Preferred option

Preferred option

TO KIAMA

TO KIAMA

No access to the highway

Exit from and entrance to the highway

B2.0  Option G2

South

Central

North

Preferred option

Preferred option

TO KIAMA

TO KIAMA

TO KIAMA

Exit from and entrance to the highway
B3.0  Option G3

South

Central

North

Exit from the highway
Entrance to the highway

B4.0  Option G2-6

South (modified potential arrangement A)

This option would provide all four turning movements at Berindo Street. Various arrangements would be possible and typical examples are illustrated below.

South (modified potential arrangement B)

Exit from and entrance to the highway in all directions

North (not modified)

Exit from and entrance to the highway
B5.0  Option G2-8

South (modified potential arrangement A)

The option would provide at four turning movements at Bellslea Street. Various arrangements would be possible and typical concepts are illustrated below.

South (modified potential arrangement B)

South (modified potential arrangement)

North (modified potential arrangement)

B6.0  Option G3-5

South (modified potential arrangement)

Central (not modified)

North (not modified)
Not used
Appendix C  Berry access options

C1.0  Southbound combination Option B8/B4

C2.0  Southbound combination Option B9/B4

C3.0  Southbound combination Option B8/B5
C4.0 Southbound combination Option B9/B5

C5.0 Northbound combination Option B1/B6

C6.0 Northbound combination Option B2/B6
C7.0 Northbound combination Option B3/B6

C7.0 Northbound combination Option B1/B7

C8.0 Northbound combination Option B2/B7
C9.0 Northbound combination Option B3/B7