

SCHEDULE 1: DESCRIPTION OF ACTIVITY

The Activity is the Nowra to Nerriga Main Road 92 Upgrade as described in the:

1. Environmental Impact Statement (EIS) for the Nowra to Nerriga Main Road 92 Upgrade prepared by Sinclair Knight Mertz, dated December 2002; as modified by the
2. Representations Report for the Main Road 92 Upgrade Hames Road to Nerriga prepared by the Roads and Traffic Authority dated July 2004.

SCHEDULE 2: CONDITIONS OF APPROVAL – MAIN ROAD 92 UPGRADE

Table of Contents

DEFINITIONS	4
ABBREVIATIONS	5
REPORTING REQUIREMENTS	6
ADMINISTRATIVE CONDITIONS	7
The Activity	7
Compliance	7
Environmental Impact Audits	9
ENVIRONMENTAL MANAGEMENT	10
Construction Environmental Management Plan.....	10
Operation Environmental Management Plan	11
Environmental Management Representative	12
COMMUNICATION AND CONSULTATION	13
FLORA AND FAUNA	14
URBAN DESIGN AND LANDSCAPE	16
HERITAGE	16
Historical Relics	17
Indigenous Heritage Management	17
NOISE AND VIBRATION	17
Construction Noise and Vibration Management Sub Plan	18
Construction Hours	18
Construction Noise Objective.....	18
Construction Noise Management.....	19
Vibration Criteria	19
Operation Noise Management	19
Blasting	20
ROAD SAFETY	22
PHYSICAL ISSUES	22
Soil and Water Management	22
Spoil and Fill Management	23
Air Quality	24
Sustainable Energy.....	24
SOCIAL AND ECONOMIC ISSUES	24
Property Damage and Access	24
Traffic.....	25
MISCELLANEOUS REQUIREMENTS	25
Utilities and Services.....	25
Location of Ancillary Facilities	26
Bridge and Culvert Design	26
APPENDICES	
A Measures, Controls and Commitments for the Preferred Activity	
B Conservation Management Policy, Strategy & Implementation	
C Results of Database Searches	

DEFINITIONS

Activity	The activity described in Schedule 1 of this Approval
Ancillary Facility	Temporary facility for Construction that does not form part of the Activity. Examples are an office and amenities compound, batch plant (concrete or bitumen), materials storage compound
Conditions of Approval	The Minister's Conditions of Approval for the Activity
Construction	Includes all work in respect of the Activity other than survey, acquisitions, fencing, investigative drilling or excavation, building/road dilapidation surveys, minor clearing (except where threatened species, populations or ecological communities would be affected), establishing site compounds (in locations meeting the criteria of the Conditions), or other activities determined by the EMR to have minimal environmental impact (e.g. minor access roads, minor adjustments to services/utilities, etc.).
Department, the	Department of Infrastructure, Planning and Natural Resources
Director-General, the	Director-General of the Department (or delegate)
Director-General's Agreement	A written advice from the Director-General (or delegate)
Director-General's Approval	A written approval from the Director-General (or delegate)
	Where the Director-General's Approval is required under a Condition the Director-General will endeavour to provide a response within one month of receiving an approval request. The Director-General may ask for additional information if the approval request is considered incomplete. When further information is requested the time taken for the Proponent to respond in writing will be added to the one month period.
Director-General's Report	The report provided to the Minister by the Director-General of the Department under section 115C of the <i>Environmental Planning and Assessment Act 1979</i> .
EIS	Means the EIS for the Nowra to Nerriga Main Road 92 Upgrade prepared by Sinclair Knight Mertz, dated December 2002
Minister, the	Minister for Infrastructure and Planning
Operation	Means the Operation of the Activity, but does not include commissioning trials of equipment or temporary use of parts of the Activity during Construction.
Proponent	Roads and Traffic Authority
Publicly Available	Available for inspection by a member of the general public (for example available on an internet site or at a display centre)

Reasonable and Feasible	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.
Relevant Councils	Shoalhaven City Council and Palerang Council
Relevant Government Departments	A government department with a licensing or approval role for the Activity's Construction or Operation. Generally one or more of the, DEC (including EPA and NPWS functions), Department of Primary Industries (including NSW Fisheries and NSW Agriculture functions), NSW Heritage Office and DIPNR.
Representations Report	Representations Report for the Main Road 92 Upgrade Hames Road to Nerriga prepared by the Roads and Traffic Authority dated July 2004
River	River has the meaning given under the <i>Water Management Act 2002</i> . In summary, this is "any watercourse, whether perennial or intermittent and whether comprising a natural channel or a natural channel artificially improved".
Sensitive Receiver	Residence, education institution (e.g. school, TAFE college), health care facility (e.g. nursing home, hospital) and religious facility (e.g. church)
Stages	Stages refers to the: <ul style="list-style-type: none"> □ division of an Activity into multiple contract packages; and/or □ Construction or Operation of an Activity in discrete sections.
Structure	Residence, farm shed or other building.

ABBREVIATIONS

CEMP	Construction Environmental Management Plan
dB(A)	Decibel, "A" weighted scale
DEC	Department of Environment and Conservation. Also includes the Environment Protection Authority and the National Parks and Wildlife Service
DEH	Department of Environment and Heritage (Australian Government)
DIPNR	Department of Infrastructure, Planning and Natural Resources
DPI	Department of Primary Industries
EIS	Environmental Impact Statement
EMP	Environmental Management Plan

EMR	Environmental Management Representative
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
L _{A90}	The noise level exceeded for 90% of a monitoring period, also referred to as the background noise level
L _{Aeq} (9 hour)	Equivalent continuous (constant) sound pressure level over a 9 hour period from 10pm to 7am
L _{Aeq} (15 hour)	Equivalent continuous (constant) sound pressure level over a 15 hour period from 7am to 10pm
OEMP	Operation Environmental Management Plan
RTA	Roads and Traffic Authority
SCA	Sydney Catchment Authority

REPORTING REQUIREMENTS

The table below summarises reports required by the conditions to be provided to the Director-General.

Condition	Report	Director-General Approval?
Administrative Conditions		
3	Advise of Construction and Operation commencing	No
7	Staging Report	No
8	Pre-Construction Compliance Report	No
9	Pre-Operation Compliance Report	No
10	Construction Compliance Reports	No
11	Environmental Impact Audit Report - Construction	No
12	Environmental Impact Audit Report - Operation	No
Environmental Management		
13	CEMP	Yes
14	OEMP	Yes
15	Request for EMR Approval	Yes
Communication and Consultation		
19	Community Involvement Plan	No
Flora and Fauna		
25	Road Kill Report	No
Social and Economic Issues		
27	Urban Design and Landscape Report	No
Heritage		
28	Advice on the implementation of the "Conservation Management Plan Policy, Strategy and Implementation"	No
Noise and Vibration		
38	Operation Noise Management Report	Yes
Road Safety		
44 & 46	Safety Audits	No
45	Traffic Volume Counts	No

ADMINISTRATIVE CONDITIONS

The Activity

1. The Activity must be carried out consistent with:
 - (a) the procedures, safeguards and mitigation measures identified in the EIS, as modified by the Representations Report; and
 - (b) the measures, controls and commitments for the Activity listed in the amended Tables 8.5 to 8.7 of the Representations Report. The amended tables are included as Appendix A to the Conditions of Approval; and
 - (c) these Conditions.

These Conditions prevail in the event of any inconsistency with the requirements for the Construction and Operation of the Activity arising out of the documents described in (a) and (b) above.

2. These Conditions of Approval do not relieve the Proponent of its obligations under any other Act.

Compliance

General

3. The Proponent must notify in writing the Director-General, Relevant Government Departments and Relevant Councils of the start of the Activity's Construction and Operation. Such notification must be provided at least four weeks before the relevant start date unless otherwise agreed to by the Director-General.
4. It is the responsibility of the Proponent to ensure compliance with all of these Conditions and to implement any measures arising from these Conditions of Approval.
5. The Proponent must bring to the Director-General's attention any matter that may require further assessment by the Director-General.
6. The Proponent must comply with any requirements of the Director-General arising from the Director-General's assessment of:
 - (a) any reports, plans or correspondence that are submitted to satisfy these Conditions of Approval; and
 - (b) the implementation of any actions or measures contained in such reports, plans or correspondence.

Staging Report

7. The Proponent may elect to construct the Activity in Stages provided that these are consistent with the Conditions of Approval. Where Stages are proposed, the Proponent must submit a *Staging Report* to the Director-General at least four weeks before Construction commences (or within any other time agreed to by the Director-General). The *Staging Report* must:

- (a) describe the Stages; and
- (b) identify how the Conditions will be addressed in each Stage.

Pre-Construction Compliance Report

8. The Proponent must submit a *Pre-Construction Compliance Report* to the Director-General at least four weeks before Construction commences (or within any other time agreed to by the Director-General).

The *Pre-Construction Compliance Report* must include:

- (a) details of how the Conditions of Approval required to be addressed before Construction were complied with;
- (b) the time when each relevant Condition of Approval was complied with, including dates of submission of any required reports and/or approval dates; and
- (c) details of any approvals or licences required to be issued by Relevant Government Departments before Construction commences.

Pre-Operation Compliance Report

9. The Proponent must submit a *Pre-Operation Compliance Report* to the Director-General at least four weeks before Operation commences (or within any other time agreed to by the Director-General).

The *Pre-Operation Compliance Report* must include:

- (a) details of how the Conditions of Approval required to be addressed before Operation were complied with;
- (b) the time when each relevant Condition of Approval was complied with, including dates of submission of any required reports and/or approval dates; and
- (c) details of any approvals or licences issued by Relevant Government Departments for the Activity's Operation.

Construction Compliance Reports

10. The Proponent must provide the Director-General, Relevant Councils, the DEC and the SCA with *Construction Compliance Reports*. The EMR must review the *Construction Compliance Reports* before they are submitted to the Director-General and bring to the Director-General's attention any shortcomings.

The first *Construction Compliance Report* must report on the first six months of Construction and be submitted a maximum six weeks after expiry of that period (or at any other time interval agreed to by the Director-General). The second, and subsequent, *Construction Compliance Reports* must be submitted at maximum intervals of six months from the date of submission of the first *Construction Compliance Report* (or at any other time interval agreed to by the Director-General) for the duration of Construction.

The *Construction Compliance Reports* must include information on:

- (a) compliance with the CEMP and the Conditions of Approval;

- (b) compliance with any approvals or licences issued by Relevant Government Departments for Construction;
- (c) the implementation and effectiveness of environmental controls. The assessment of effectiveness should be based on a comparison of actual impacts against performance criteria identified in the CEMP;
- (d) environmental monitoring results, presented as a results summary and analysis;
- (e) the number and details of any complaints, including a summary of main areas of complaint, action taken, response given and intended strategies to reduce recurring complaints;
- (f) details of any review and amendments to the CEMP resulting from Construction during the reporting period; and
- (g) any other matter relating to compliance with the Conditions of Approval or as requested by the Director-General.

The *Construction Compliance Reports* must be made Publicly Available.

Environmental Impact Audits

Environmental Impact Audit Report - Construction

11. An *Environmental Impact Audit Report - Construction* must be prepared and submitted to the Director-General a maximum three months after Construction is complete (or at any other time interval agreed to by the Director-General). The *Environmental Impact Audit Report - Construction* must also be submitted to the DEC and SCA.

The *Environmental Impact Audit Report - Construction* must:

- (a) identify the major environmental controls used during Construction and assess their effectiveness;
- (b) summarise the main environmental management plans and processes implemented during Construction and assess their effectiveness;
- (c) identify any innovations in Construction methodology used to improve environmental management; and
- (d) discuss the lessons learnt during Construction, including recommendations for future Activities.

Environmental Impact Audit Report - Operation

12. An *Environmental Impact Audit Report - Operation* must be submitted to the Director-General a maximum 24 months after the Activity begins Operation and at any additional periods that the Director-General may require. The *Environmental Impact Audit Report - Operation* must also be submitted to the DEC and SCA.

The *Environmental Impact Audit Report - Operation* must:

- (a) be certified by an independent person at the Proponent's expense. The certifier must be advised to the Director-General before the *Environmental Impact Audit Report - Operation* is prepared;
- (b) compare the Operation impact predictions made in the EIS, Representations Report and any supplementary studies with the actual impacts;
- (c) assess the effectiveness of implemented mitigation measures and safeguards;

- (d) assess compliance with the systems for operation maintenance and monitoring;
- (e) discuss the results of consultation with the local community particularly any feedback or complaints; and
- (f) be made Publicly Available.

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

13. A Construction Environmental Management Plan (CEMP) must be prepared and implemented in accordance with these Conditions of Approval and all relevant Acts and Regulations. The Proponent must obtain the Director-General's Approval for the CEMP before Construction commences or within any other time agreed to by the Director-General. The CEMP must be reviewed by the EMR before the Proponent seeks the Director-General's approval for the CEMP. The EMR must bring to the Director-General's attention any shortcomings.

The Proponent must ensure that the mitigation measures identified in the EIS, Representations Report and in these Conditions are incorporated into the CEMP.

The CEMP must:

- (a) state how the measures, controls and commitments identified in Tables 8.5 and 8.6 (as amended) of the Representations Report will be implemented. The Tables are attached as Appendix A to these Conditions of Approval;
- (b) include a Construction program, identifying Construction activities and their location and timing;
- (c) cover any relevant environmental elements identified by the Proponent, or its contractor, from their environmental due diligence investigations;
- (d) contain the Construction Sub Plans required by the Conditions of Approval;
- (e) be prepared following consultation with the DEC, SCA and Relevant Councils;
- (f) be Publicly Available;
- (g) include the Community Involvement Plan;
- (h) include environmental management details such as:
 - i identification of statutory obligations which the Proponent is required to fulfil during Construction, including all approvals and licences;
 - ii an environmental management structure indicating the responsibility, authority and accountability for personnel relevant to the CEMP;
 - iii the role of the EMR and identification of Construction activities requiring EMR attendance;
 - iv details of the Construction personnel induction and training program;
 - v emergency response procedures;
- (i) include implementation details such as:
 - i identification of relevant environmental elements;
 - ii measures to avoid and/or control environmental impacts;
 - iii the tools to be used to implement the CEMP such as plans, schedules and work instructions;
- (j) include monitoring and review details such as:
 - i performance criteria;
 - ii performance monitoring methods;
 - iii auditing and corrective actions procedures;

- iv CEMP review procedures.

Operation Environmental Management Plan

14. An Operation Environmental Management Plan (OEMP) must be prepared and implemented in accordance with these Conditions and all relevant Acts and Regulations. The Proponent must obtain the approval of the Director-General for the OEMP before Operation commences or within any other time agreed to by the Director-General.

The OEMP must:

- (a) state how the measures, controls and commitments identified in Table 8.7 (as amended) of the Representations Report will be implemented. The Table is attached as Appendix A to these Conditions of Approval;
- (b) identify the Operation activities;
- (c) cover relevant environmental elements identified by the Proponent either from its environmental due diligence investigations or required to satisfy any other licence or approval;
- (d) include management plans for the:
 - i rehabilitated and landscape areas including measures for the management and maintenance of all preserved, planted and rehabilitated vegetation (including aquatic vegetation) for five years;
 - ii implemented components of the "Conservation Management Plan Policy, Strategy and Implementation" (Appendix B);
- (e) be prepared in consultation with Relevant Councils, the DEC and the SCA;
- (f) be made Publicly Available;
- (g) include environmental management details such as:
 - i identification of statutory obligations which the Proponent is required to fulfil during the Activity's Operation, including all approvals and licences;
 - ii an environmental management structure indicating the responsibility, authority and accountability for personnel relevant to the OEMP;
 - iii details of a personnel induction and training program;
 - iv emergency response procedures;
- (h) include implementation details such as:
 - i identification of relevant environmental elements;
 - ii measures to avoid and/or control environmental impacts;
 - iii the tools to be used to implement the OEMP such as plans, schedules and work instructions;
- (i) include monitoring and review details such as:
 - i performance criteria;
 - ii performance monitoring methods;
 - iii auditing and corrective actions procedures;
 - iv OEMP review procedures.

If the Proponent has an Operation Environmental Management Plan (for example a certified and operating environmental management system) for its other activities which is applicable to this Activity then that system may be proposed as the OEMP. Details of the existing system must be provided to the Director-General demonstrating its application to this Activity.

Environmental Management Representative

15. The Proponent must request the Director-General's Approval for the appointment of an Environmental Management Representative (EMR) at least eight weeks before Construction commences (or within any other time agreed to by the Director-General). In its request the Proponent must provide the following information, the:
 - (a) qualifications and experience of the EMR including demonstration of general compliance with relevant Australian Standards for environmental auditors;
 - (b) authority and independence (from the Proponent or its contractors) of the EMR including details of the Proponent's internal reporting structure; and
 - (c) resourcing of the EMR role. The EMR must be available:
 - i for sufficient time to undertake the EMR role. This timing shall be agreed between the Proponent and the EMR and advised to the Director-General in the request for approval;
 - ii at any other time requested by the Director-General;
 - iii during any Construction activities identified in the CEMP to require the EMR's attendance; and
 - iv for the duration of Construction.
16. The Director-General may at any time immediately revoke the approval of an EMR appointment by providing written notice to the Proponent. Interim arrangements for EMR responsibility following the revocation must be agreed in writing between the Director-General and the Proponent.
17. The Director-General may at any time conduct an audit of any actions undertaken by the EMR. The Proponent must:
 - (a) facilitate and assist the Director-General in any such audit; and
 - (b) include in the conditions of the EMR's appointment the need to facilitate and assist the Director-General in any such audit.
18. The EMR is authorised to :
 - (a) consider and advise the Director-General and the Proponent on matters specified in the Conditions of Approval and compliance with such;
 - (b) determine whether work falls within the definition of Construction where clarification is requested by the Proponent;
 - (c) review the CEMP;
 - (d) periodically monitor the Proponent's activities to evaluate compliance with the CEMP. Periodic monitoring must involve site inspections of active work sites at least fortnightly;
 - (e) provide a written report to the Proponent of any non-compliance with the CEMP observed or identified by the EMR. Non compliance must be managed as identified in the CEMP;
 - (f) issue a recommendation to the Proponent to stop work immediately if in the view of the EMR an unacceptable impact on the environment is occurring or is likely to occur. The stop work recommendation may be limited to specific activities causing an impact if the EMR can easily identify those activities. The EMR may also recommend that the Proponent initiate reasonable actions to avoid or minimise adverse impacts;
 - (g) review corrective and preventative actions to monitor the implementation of recommendations made from audits and site inspections;

- (h) certify that minor revisions to the CEMP are consistent with the approved CEMP; and
- (i) provide regular (as agreed with the Director-General) reports to the Director-General on matters relevant to carrying out the EMR role including notifying the Director-General of any stop work recommendations.

The EMR must immediately advise the Proponent and the Director-General of any incidents relevant to these Conditions resulting from Construction that were not dealt with expediently or adequately by the Proponent.

COMMUNICATION AND CONSULTATION

19. The Proponent must prepare a *Community Involvement Plan* before Construction commences or within any other time agreed to by the Director-General. The Plan must:
- (a) where relevant, be consistent with the principles of the document "Community Engagement in the NSW Planning System" (PlanningNSW 2003);
 - (b) include identification of the community likely to be affected by the Activity including Sensitive Receivers;
 - (c) identify the need for Community Liaison Groups, and if they are required, their membership and function;
 - (d) address how information will be disseminated to the communities of Nerriga and Sassafras and how any feedback or comments from those communities will be managed;
 - (e) address the requirements of the Conditions of Approval for complaints management; and
 - (f) incorporate relevant sections of the "Measures, Controls and Commitments for the Preferred Activity" (Appendix A).

A copy of the *Community Involvement Plan* must be provided to the Director-General and Relevant Councils before Construction commences or within any other time agreed to by the Director-General.

20. The Proponent must prepare and implement a *Construction Complaints Management System* before Construction commences and maintain the System for the duration of Construction. The *Construction Complaints Management System* must be consistent with AS 4269 "Complaints Handling" and include:
- (a) a 24 hour, toll free telephone number listed with a telephone company and advertised;
 - (b) a system to receive, record, track and respond to complaints within a specified timeframe. When a complaint cannot be responded to immediately, a follow-up verbal response on what action is proposed must be provided to the complainant within two hours during night-time works and 24 hours at other times;
 - (c) a process for the provision of a written response to the complainant within 10 days, if the complaint cannot be resolved by the initial or follow-up verbal response; and
 - (d) a mediation system for complaints unable to be resolved.

Information on all complaints received, including the means by which they were addressed and whether resolution was reached with or without mediation, must be included in the *Construction Compliance Reports* and must be made available to the Director-General on request.

21. The Proponent must establish an Activity internet site before Construction commences and maintain the internet site until Construction ends. This internet site must contain:

- (a) periodic updates of work progress, consultation activities and planned work schedules. The site must indicate the date of the last update and the frequency of the internet site updates;
- (b) a description of relevant approval authorities and their areas of responsibility;
- (c) a list of reports and plans that are Publicly Available under this Approval and details of how these can be accessed;
- (d) contact names and phone numbers of relevant communications staff; and
- (e) the 24 hour toll-free complaints contact telephone number.

Updates of work progress, Construction activities and planned work schedules must be provided where significant changes in noise or traffic impacts are expected.

22. The Proponent must consult property owners about implementing mitigation measures that affect their property. Mitigation measures should be implemented according to a program derived from that consultation if consistent with the Conditions of Approval.

FLORA AND FAUNA

23. A Flora and Fauna Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the DEC, SCA and Relevant Councils and include:

- (a) plans showing:
 - i terrestrial vegetation communities; important flora and fauna habitat areas; locations where threatened species, populations or ecological communities were recorded; and areas to be cleared. The plans must also identify vegetation adjoining the Activity where this contains important habitat areas and/or threatened species, populations or ecological communities;
 - ii river crossings and associated aquatic vegetation communities and important habitat areas; locations where threatened species, populations or ecological communities were recorded; and areas to be cleared;
- (b) methods to manage impacts on flora and fauna species (terrestrial and aquatic) and their habitat which may be directly or indirectly affected by the Activity. These must include:
 - i procedures for vegetation clearing, soil management and managing other habitat damage (terrestrial and aquatic) during Construction;
 - ii methods to protect vegetation both retained within, and also adjoining, the Activity from damage during Construction;
 - iii a habitat tree management program including fauna recovery procedures and habitat maintenance (e.g. relocating hollows or installing nesting boxes);
 - iv consideration of strategies for re-using in rehabilitation works individuals of any threatened plant species or plants of the rare species *Dillwynia crispifolia* that would otherwise be destroyed by the Activity (where consistent with DEC or DPI (NSW Fisheries) requirements);
 - v performance criteria against which to measure the success of the methods;
- (c) methods to prevent the spread of plant and animal pathogens including:
 - i mapping risk or sensitive areas including Sassafras, Parma Creek Nature Reserve and the catchments of Tianjara and Boolijah Creeks;
 - ii cleaning machinery used in areas of Sassafras affected by *Phytophthora* (defined as the section between chainage 32400 m and 36400 m as shown in Figures 2.1 of the Representations Report) before it is transferred or used elsewhere on the Activity;

- iii retaining all material excavated in Sassafras (defined as the section between chainage 32400 m and 36400 m as shown in Figures 2.1 of the Representations Report) within that section;
 - iv not importing any material into the section of the Activity within the Parma Creek Nature Reserve (defined as the sections between chainages 900 m to 2300 m and 6700 m to 8700 m as shown in Figures 2.1 of the Representations Report) unless it can be demonstrated to be *Phytophthora* free;
 - v not importing water or damp (e.g. road pavement material with free water or above optimum moisture content) construction materials (including road pavement and rehabilitation materials) into the hydrologic catchments of Tianjara and Boolijah Creeks;
- (d) a program for reporting on the effectiveness of terrestrial and aquatic flora and fauna management measures against the identified performance criteria. Management methods must be reviewed where found to be ineffective.
24. A Vegetation/Habitat Rehabilitation Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the DEC, SCA, DPI (Fisheries) and Relevant Councils and include:
- (a) the location of the areas to be rehabilitated or landscaped, including sections of the existing MR 92 which will be made redundant by the Activity;
 - (b) a description of the rehabilitation methods, and where relevant the specific vegetation mix (seed and tube stock or other rehabilitation method), to be used in each area with reference to the existing adjoining vegetation communities;
 - (c) identification of locally native species to be used in rehabilitation works and landscaping, including flora species suitable as a food resource for threatened fauna species;
 - (d) the source of all seed or tube stock to be used in rehabilitation and landscaping works including the identification of seed sources within the Activity. Seed of locally native species within the Activity should be collected before Construction commences to provide seed stock for rehabilitation and landscaping;
 - (e) methods to re-use topsoil (and where relevant subsoils) and cleared vegetation;
 - (f) methods to remediate affected aquatic habitats;
 - (g) details of the programming of rehabilitation and landscaping works considering related environmental controls such as erosion and sedimentation controls and drainage;
 - (h) a Weed Management Strategy including:
 - i identification of weeds within the Activity and adjoining areas;
 - ii weed eradication methods and protocols for the use of herbicides;
 - iii methods to treat and re-use weed infested topsoil;
 - iv strategies to control the spread of weeds during Construction;
25. The Proponent must undertake a road kill monitoring program which must:
- (a) be designed in consultation with the DEC. The program design must consider:
 - i the qualifications of the person(s) to implement the program;
 - ii the frequency of inspections;
 - iii the type of information to be collected;
 - iv the frequency of reporting to the Proponent and the DEC;
 - (b) commence when Operation commences or within any other time agreed to by the Director-General;
 - (c) continue for twelve months after Operation commences; and

- (d) identify the need for any further monitoring.

A *Road Kill Report* presenting and analysing the results of the monitoring must be provided to the DEC and the Director-General within 14 months of Operation commencing or within any other time agreed to by the Director-General. The *Road Kill Report* must identify measures which could be implemented to reduce the incidence and frequency of road kills. The Proponent must identify which measures it will implement and their timing in consultation with the DEC.

- 26. In consultation with the DEC and before Construction commences (or within any other time agreed to by the Director-General), the Proponent must:
 - (a) review the Activity's drainage design to identify culvert locations that could also be used as fauna underpasses. Any culverts identified as suitable for fauna underpasses must be sized to be capable of fauna use; and
 - (b) determine if it is Reasonable and Feasible to use light coloured aggregate in the road pavement seal.

URBAN DESIGN AND LANDSCAPE

- 27. The Proponent must prepare an *Urban Design and Landscape Report* for the Sassafras and Bulee Gap sections of the Activity (defined below) before Construction commences in consultation with the DEC, the SCA and Relevant Councils. The Report must present an urban design for these sections of the Activity, applying design principles established in the EIS and Representations Report. A copy of the *Urban Design and Landscape Report* must be provided to the Director-General before Construction commences or within any other time agreed to by the Director-General. The Report must include:
 - (a) details of how the outcomes of the "Conservation Management Plan Policy, Strategy & Implementation" prepared for the Wool Road Bulee Gap Section, a copy of which is attached to these Conditions of Approval as Appendix B, were incorporated into the design;
 - (b) management of road side vegetation in Sassafras (defined as the section between chainage 32400 m and 36400 m as shown in Figures 2.1 of the Representations Report) including:
 - i use of safety barriers to minimise vegetation clearing;
 - ii conserving important habitat trees;
 - iii planting additional trees to maintain the 'avenue' effect.
 - (c) design treatments for cut and fill areas including those at Sassafras (defined as the section between chainage 31500 m and 36400 m as shown in Figures 2.1 of the Representations Report) and Bulee Gap (defined as the section between chainage 44500 m and 49500 m as shown in Figures 2.1 of the Representations Report);
 - (d) design treatments for bridges at Bulee Gap (defined as the section between chainage 44500 m and 49500 m as shown in Figures 2.1 of the Representations Report);
 - (e) reference to the Vegetation/Habitat Rehabilitation Sub Plan of the CEMP.

The Report must also include graphics such as sections, sketches, perspective views etc.

HERITAGE

Historical Relics

28. The Proponent must consider the document "Conservation Management Plan Policy, Strategy & Implementation" prepared for the Wool Road Bulee Gap Section, a copy of which is attached to these Conditions of Approval as Appendix B. The consideration must be undertaken in consultation with the DEC, the NSW Heritage Office, the Crown and its Lessees and Relevant Councils and address:
- (a) which works identified in the "Conservation Management Plan Policy, Strategy & Implementation" will be provided as part of the Activity;
 - (b) who will be responsible for on-going maintenance of the works provided as part of the Activity.

The outcomes of the consideration of the "Conservation Management Plan Policy, Strategy & Implementation" must be advised to the Director-General before Construction commences or within any other time agreed by the Director-General.

29. An Historical Relic Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the NSW Heritage Office and Relevant Councils and include:
- (a) consideration of the need for a Conservation Architect to be present during initial construction in Bulee Gap (defined as the section between chainage 44500 m and 49500 m as shown in Figures 2.1 of the Representations Report);
 - (b) details of any investigations to be undertaken and any approvals required;
 - (c) procedures to be implemented if previously unidentified historical relics are discovered during Construction. If such relics are discovered all work likely to affect the relic(s) must cease immediately and the Heritage Council notified in accordance with the *Heritage Act 1977*; and
 - (d) an education program for Construction personnel on their obligations for historic relics.

Indigenous Heritage Management

30. An Indigenous Heritage Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with all relevant Aboriginal groups and the DEC and include:
- (a) details of the archaeological investigations to be undertaken and any associated licences or approvals required;
 - (b) procedures to be implemented if previously unidentified Aboriginal objects are discovered during Construction. If such objects are discovered all work likely to affect the object(s) must cease immediately and the DEC informed in accordance with the *National Parks and Wildlife Act 1974*; and
 - (c) an education program for Construction personnel on their obligations for Aboriginal cultural materials.

NOISE AND VIBRATION

Construction Noise and Vibration Management Sub Plan

31. A Construction Noise and Vibration Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the Relevant Councils and include:
- (a) an education program for Construction personnel about noise minimisation;
 - (b) identification of each Construction activity, including Ancillary Facilities, and their associated noise sources;
 - (c) identification of all potentially affected Sensitive Receivers;
 - (d) the Construction noise objective specified in the Conditions of Approval;
 - (e) the Construction vibration criteria specified in the Conditions of Approval;
 - (f) determination of appropriate noise and vibration objectives for each identified Sensitive Receiver;
 - (g) noise and vibration monitoring, reporting and response procedures;
 - (h) assessment of potential noise and vibration from each Construction activity including noise from Construction vehicles and any traffic diversions;
 - (i) a description of management methods and procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during Construction;
 - (j) justification for any activities outside the Construction hours specified in the Conditions of Approval. This includes identifying areas where Construction noise would not be audible at any Sensitive Receiver;
 - (k) procedures for notifying residents of Construction activities that are likely to affect their noise and vibration amenity; and
 - (l) contingency plans to be implemented in the event of non-compliances and/or noise complaints.

Construction Hours

32. Construction must be restricted to between the hours of 7:00 am to 6:00 pm (Monday to Friday), 8:00 am to 1:00 pm (Saturday) and at no time on Sundays and public holidays except:
- (a) where the Police or other authorities require delivery of materials outside these hours for safety reasons; or
 - (b) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or
 - (c) where the work is identified in the Construction Noise and Vibration Management Sub Plan and approved as part of the CEMP.

Local residents should be informed of the timing and duration of work approved under item (c) at least 48 hours before that work commences.

Construction Noise Objective

33. The Construction noise objective for the Activity is to manage noise from Construction activities (as measured by a $L_{A10(15\text{minute})}$ descriptor) so it does not exceed the background L_{A90} noise level at a Sensitive Receiver by:
- (a) more than 20 dB(A) for a Construction period of four weeks and under;
 - (b) more than 10 dB(A) for a Construction period of greater than four weeks and not exceeding 26 weeks; and
 - (c) more than 5 dB(A) for a Construction period greater than 26 weeks.

Background noise levels are those identified in the EIS or Representations Report or otherwise identified in the Construction Noise and Vibration Management Sub Plan.

Any activities that have the potential for noise emissions that exceed the objective must be identified and managed in accordance with the Construction Noise and Vibration Management Sub Plan. The Proponent must implement all Reasonable and Feasible noise mitigation and management measures with the aim of achieving the Construction noise objective.

If the noise from a Construction activity is substantially tonal or impulsive in nature (as described in Chapter 4 of the *NSW Industrial Noise Policy*), 5dB(A) must be added to the measured Construction noise level when comparing the measured noise with the Construction noise objective.

Construction Noise Management

34. The Proponent must ensure that wherever practical, and where Sensitive Receivers may be affected, driven piles are not used. If driven piles are required they must only be installed where approved in the Construction Noise and Vibration Management Sub Plan.
35. The Proponent must, where Reasonable and Feasible, erect Operation noise mitigation measures at the start of Construction (or at other times during Construction) to minimise Construction noise impacts.

Vibration Criteria

36. Vibration caused by Construction and received at any Structure outside the Activity must:
 - (a) for structural damage vibration be limited to German Standard DIN 4150 Part 3 *Structural Vibration in Buildings. Effects on Structures*; and
 - (b) for human exposure to vibration be limited to the evaluation criteria presented in British Standard BS 6472 - *Guide to Evaluate Human Exposure to Vibration in Buildings* (1Hz to 80 Hz) for low probability of adverse comment.

These limits apply unless otherwise approved in the Construction Noise and Vibration Management Sub Plan.

Operation Noise Management

Operation Noise Criteria

37. The Activity must be designed to meet the criteria for a new arterial road corridor as defined in the NSW Government's "Environmental Criteria for Road Traffic Noise" unless otherwise identified in the *Operation Noise Management Report*. The criteria are:

- (a) Day $L_{Aeq(15hr)}$ 55 dB(A); and
- (b) Night $L_{Aeq(9hr)}$ 50 dB(A).

The criteria apply at a Sensitive Receiver or, if the land is undeveloped, at any residential boundary (existing, zoned or in a draft environmental planning instrument at the date of this approval).

Operation Noise Management Report

38. The Proponent must prepare an *Operation Noise Management Report* detailing its investigation of Reasonable and Feasible Operation noise mitigation methods. The Proponent must obtain the approval of the Director-General for the *Operation Noise Management Report* before Construction commences or within any other time agreed to by the Director-General. The *Operation Noise Management Report* must:
- (a) include the village of Nerriga as well as isolated houses adjoining the Activity;
 - (b) consider the NSW Government's "Environmental Criteria for Road Traffic Noise" and the RTA's "Environmental Noise Management Manual";
 - (c) identify the Operation noise criteria;
 - (d) identify Sensitive Receivers;
 - (e) predict noise levels at all Sensitive Receivers;
 - (f) detail Reasonable and Feasible noise mitigation measures, physical (including the use of low-noise pavements in Nerriga) and managerial. An analysis for the entire Activity must be undertaken in accordance with Practice Note IV of the RTA's "Environmental Noise Management Manual";
 - (g) consider urban design issues relating to noise control measures;
 - (h) identify which noise mitigation measures will be implemented, including their location, type and when they would be implemented; and
 - (i) detail noise monitoring, reporting and complaint response procedures.

Operation Noise Monitoring

39. Monitoring of Operation noise must be undertaken in accordance with Practice Note VIII of the RTA's "Environmental Noise Management Manual". The Proponent must assess the adequacy of the implemented traffic noise mitigation measures between six months and one year after opening the Activity. Should the assessment indicate traffic noise levels exceeding those predicted in the *Operation Noise Management Report*, the Proponent must:
- (a) advise the Director-General; and
 - (b) investigate and implement further Reasonable and Feasible mitigation measures in accordance with the NSW Government's "Environmental Criteria for Road Traffic Noise" and RTA's "Environmental Noise Management Manual". The selection of these measures must be undertaken in consultation with affected property owners and be consistent with the *Operation Noise Management Report*.

Blasting

40. Blasting must only be undertaken between the hours of 9:00 am and 3:00 pm, Monday to Friday, and 9:00 am to 12:00 pm on Saturday.
41. The vibration level due to blasting activities must meet the requirements of any relevant DEC Licence. The guideline "Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration" prepared by the Australian and New Zealand Environment and Conservation Council (ANZECC) would generally apply to blasting.

42. The Proponent must undertake blasting trials if blasting is to be used. Results from the trials must be used to determine site-specific blast designs that will enable the performance criteria specified in the Construction Noise and Vibration Sub Plan to be satisfied.
43. The Proponent must make all reasonable attempts to advise occupants of residences located within 500 metres of a blast, of blasting. The advice must be provided at least 48 hours before a blast and include a schedule of blast time(s) and a telephone number and contact name.

ROAD SAFETY

44. Table 8.6 of the "Measures, Controls and Commitments for the Preferred Activity" (Appendix A) contains a commitment to undertake safety audits of the detailed design. Where the Activity is constructed in Stages the safety audits must be undertaken for each Stage and must also examine the unconstructed Stages to determine the need for temporary remedial works. A copy of the safety audit must be provided to the Director-General before Operation of any Stage.
45. The RTA must undertake traffic volume counts on MR 92 in Nerriga Village, at Tianjara Creek Causeway, and at 3.0 km north of MR 51 (the latter two locations as identified in Table 7-1 of the EIS) before:
 - (a) Construction commences or within any other time agreed to by the Director-General;
 - (b) Operation commences or within any other time agreed to by the Director-General; and
 - (c) 12 months after Operation commences or within any other time agreed to by the Director-General.

The results of each of the traffic volume counts must also be provided to the Director-General within the times nominated above.

46. Prior to Operation, the RTA must undertake a comprehensive safety audit of MR 92 between Nerriga and MR 51 to address forecast increase in traffic volumes and change/frequency of vehicle types. The findings of the safety audit must be addressed.
47. In consultation with the Relevant Councils the Proponent must consider the provision of advisory signs:
 - (a) at suitable locations along MR 92 indicating load limits applicable to the Charleyong Bridge over the Mongarlowe River; and
 - (b) at the intersection of MR 92 with Oallen Ford Road indicating the load limits applicable to Oallen Ford Bridge and Oallen Ford Road.

PHYSICAL ISSUES

Soil and Water Management

Soil and Water Management Sub Plan

48. A Soil and Water Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the DEC, the SCA, the DPI (NSW Fisheries) and Relevant Councils. The Sub Plan must:
 - (a) where relevant, be consistent with the Department of Housing's guideline "Managing Urban Stormwater - Soils and Construction", the RTA's "Guidelines for the Control of Erosion and Sedimentation in Roadworks" and the DIPNR "Constructed Wetlands Manual";
 - (b) identify the Construction activities that could cause soil erosion or discharge sediment or water pollutants from the site;

- (c) describe management methods to minimise soil erosion or discharge of sediment or water pollutants from the site including a strategy to minimise the area of bare surfaces during Construction;
- (d) describe the location and capacity of erosion and sediment control measures;
- (e) identify the timing and conditions under which Construction stage controls will be decommissioned;
- (f) include contingency plans to be implemented for events such as fuel spills; and
- (g) identify how the effectiveness of the sediment and erosion control system will be monitored, reviewed and updated.

Construction

49. An appropriately qualified soil scientist must be consulted according to a schedule identified in the Soil and Water Management Sub Plan to:
- (a) undertake inspections of temporary and permanent erosion and sedimentation control devices;
 - (b) ensure that the most appropriate controls are being implemented;
 - (c) check that controls are being maintained in an efficient condition; and
 - (d) check that controls meet the requirements of any relevant approval and/or licence condition.

The results of these inspections and any follow-up actions must be reported in the *Construction Compliance Reports* required by the Conditions of Approval.

Operation

50. All Operation stage controls for stormwater drainage and water pollution must be located, designed, constructed, operated and maintained to meet the requirements of the RTA's "Code of Practice for Water Management – Road Development and Management". These controls must be designed in consultation with the DEC, the SCA and Relevant Councils. Controls must also be provided at the existing bridges over the Endrick River and Boolijah and Tianjara Creeks.

Spoil and Fill Management

51. A Spoil and Fill Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must include:
- (a) the locations of major (defined as a volume greater than 500 cubic metres) spoil stockpiles;
 - (b) the source of imported fill material and where it will be stockpiled and used;
 - (c) methods to re-use or dispose excess or unsuitable spoil material including estimated volumes and disposal sites; and
 - (d) management methods for soil and spoil from the Sassafras area (defined as the section between chainage 31500 m and 36400 m as shown in Figures 2.1 of the Representations Report) which must not be used in rehabilitation or construction works elsewhere.
52. All material excavated from Construction must be re-used or recycled unless otherwise approved in the Spoil and Fill Management Sub Plan. The Proponent must ensure that the re-use of material generated from Construction is maximised in preference to importing fill.

Air Quality

53. A Dust Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must identify:
- (a) potential sources of dust;
 - (b) dust management objectives consistent with DEC guidelines;
 - (c) a monitoring program to assess compliance with the identified objectives;
 - (d) mitigation measures to be implemented, including measures during weather conditions where high level dust episodes are probable (such as strong winds in dry weather); and
 - (e) a progressive rehabilitation strategy for exposed surfaces with the aim of minimising exposed surfaces.
54. The Proponent must ensure that all plant and equipment used in connection with the Activity are:
- (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

Sustainable Energy

55. Electrical energy derived from a renewable energy source accredited by the Department of Energy, Utilities and Sustainability (DEUS) must be used for the supply of at least 50% of the on-site electrical energy requirements for the Activity's Construction. Power consumption (green power or other) must be reported in the Construction Compliance Reports.

SOCIAL AND ECONOMIC ISSUES

Property Damage and Access

56. Subject to landowner agreement, property inspections must be conducted on all Structures within:
- (a) 200 metres of blasting;
 - (b) 50 metres of Construction activities that generate vibration impacts;
 - (c) any other locations identified by the Proponent; and
 - (d) any other locations identified by the EMR.

The property inspections must be undertaken consistent with AS 4349.1 "Inspection of Buildings".

The owners of all properties on which property inspections are to be conducted must be advised at least two weeks before the inspection of its scope and methodology and of the process for making a property damage claim. A copy of the property inspection report must be given to the owner of each property inspected at least three weeks before Construction that could affect the property commences.

A register of all properties proposed for inspection must be maintained by the Proponent indicating whether the owner accepted or refused the property inspection offer. A copy of the register must be provided to the Director-General upon request.

57. Property inspections need not be undertaken if a risk assessment indicates Structures will not be affected. The risk assessment must be undertaken before Construction commences by geotechnical and construction engineering experts with appropriate registration on the National Professional Engineers Register.
58. The Proponent, where liable, must rectify any property damage caused directly or indirectly (for example from vibration or from groundwater change) by the Activity's Construction or Operation at no cost to the property owner(s). Alternatively the Proponent may negotiate compensation for the property damage with the property owner.
59. Where a licensed bore, dam or other property water supply is adversely affected by the Activity the Proponent must reinstate a water supply of equivalent quality and quantity. Alternatively the Proponent may negotiate compensation for the loss with the landowner.

Traffic

60. Road dilapidation reports must be prepared for all local roads likely to be used by Construction traffic. These reports must be prepared before Construction commences and after Construction is complete. Copies of the reports must be provided to the relevant roads authority. Any damage resulting from Construction, except that resulting from normal wear and tear, must be repaired at the Proponent's cost. Alternatively the Proponent may negotiate an alternative arrangement for road damage with the relevant roads authority.
61. A Construction Traffic Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the relevant roads authority and include:
 - (a) identification of all public roads to be used by Construction traffic, in particular roads proposed to transport large quantities of Construction materials. The expected timing and duration of road usage must be stated;
 - (b) management methods to ensure Construction traffic uses identified roads;
 - (c) identification of all public roads that may be partially or completely closed during Construction and the expected timing and duration of these closures. Consideration must be given to programming Construction works to minimise road closures during peak hours and/or holiday periods;
 - (d) impacts on existing traffic (including pedestrians, vehicles, cyclists and disabled persons);
 - (e) temporary traffic arrangements including property access;
 - (f) access to Construction sites including entry and exit locations and measures to prevent Construction vehicles queuing on public roads;
 - (g) a response plan for any Construction traffic incident; and
 - (h) monitoring, review and amendment mechanisms.

MISCELLANEOUS REQUIREMENTS

Utilities and Services

62. The Proponent must identify the utilities and services (hereafter "services") potentially affected by Construction to determine requirements for diversion, protection and/or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. The Proponent in consultation with service providers must ensure that disruption to services resulting from the Activity are minimised and advised to customers.

Location of Ancillary Facilities

63. The sites for Ancillary Facilities must satisfy the following criteria unless otherwise approved through the CEMP:
- (a) be located within the Activity;
 - (b) have ready access to the road network;
 - (c) be located to minimise the need for heavy vehicles to travel through residential areas;
 - (d) be sited on relatively level land;
 - (e) be separated from nearest residences by at least 200 m (or at least 250 m for a temporary batch plant);
 - (f) be located above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented;
 - (g) be located more than 50 m from a River or 10 m from a drainage depression. A drainage depression is defined as a low point that carries water during rainfall but dries quickly once rainfall has ceased;
 - (h) not require vegetation clearing beyond that already required for the Activity; and
 - (i) not affect the land use of adjacent properties.

The location of the Ancillary Facilities must be identified in the CEMP and must include an analysis against the above criteria. Where these criteria cannot be met the CEMP must demonstrate there will be no adverse impacts from the Ancillary Facility's construction or operation.

Bridge and Culvert Design

64. The Proponent must undertake the design and construction of bridges and culverts in consultation with the DEC and the DPI (NSW Fisheries). The Proponent must ensure the design and construction of bridges and culverts are consistent with DPI (NSW Fisheries) Guidelines.

APPENDIX A
Measures, Controls and Commitments
For the Preferred Activity

Note: These three Tables were extracted from the Representations Report. Amendments are deletions only which are shown as double struck through (e.g. ~~struck through~~).

Table 8.5: Measures, Controls and Commitments for the Preferred Activity – Pre-construction

Issue	Mitigation and Management Measures	Responsibility
General	<ul style="list-style-type: none"> At least one month prior to commencement of substantial construction, the RTA would submit a compliance report for approval of the Director-General, Department of Infrastructure, Planning & Natural Resources (DIPNR). The compliance report would provide details of compliance with all relevant conditions that apply prior to commencement of substantial construction. 	RTA
	<ul style="list-style-type: none"> The RTA would notify the Director-General, DIPNR and all relevant Government Authorities in writing of the project commencement, in terms of construction, at least 1 week prior to the relevant commencement date. 	RTA
	<ul style="list-style-type: none"> The RTA would require that construction contractors have an Environmental Management System prepared and accredited in accordance with the <i>Environment Management System Guidelines</i> (NSW Government 1998) 	RTA/ Contractor
	<ul style="list-style-type: none"> Prior to the commencement of construction an Environmental Management Representative (EMR) would be appointed for the duration of the construction period. The responsibilities of the EMR would be defined jointly by the RTA and DIPNR. 	RTA
	<ul style="list-style-type: none"> Prior to the commencement of work, a Contractor's Environmental Management Plan(s) (EMP(s)) would be prepared following consultation with the EPA; DIPNR; NPWS; NSW Heritage Office; NSW Fisheries; Shoalhaven City and Tallaganda Councils. 	Contractor
	<ul style="list-style-type: none"> Where construction activities are to be undertaken in discrete stages, the Contractor may prepare individual EMPs relating to specific stages of construction. 	Contractor
	<ul style="list-style-type: none"> The Contractor's EMP(s) would be prepared in accordance with the conditions of this approval, all relevant Acts and Regulations and accepted best practice management sub plans. 	Contractor
	<ul style="list-style-type: none"> The Contractor's EMP(s) are likely to require approval by the Director-General, DIPNR and the Director-General NPWS prior to the commencement of substantial construction works, or within such time as otherwise agreed to by the Director-Generals. 	RTA
	<ul style="list-style-type: none"> The Contractor's EMP(s) would be certified by the EMR as being in accordance with the Conditions of Approval and all undertakings made in the EIS and Representations Report prior to seeking approval of the Director-General, DIPNR. 	RTA
	<ul style="list-style-type: none"> The location of construction compounds/site office areas would be provided in detail in the Contractor's EMP and be only in those areas that satisfy the following criteria: <ul style="list-style-type: none"> sites would be located within the road reserve wherever possible; sites would have low conservation significance for flora, fauna or heritage and would not require any clearing of native vegetation beyond that which must be cleared for the proposal in any case; sites would be selected so that the operation of the plant and equipment does not impact on the land use of adjacent properties; and if sites are not located within the road reserve, they would be the subject of a separate environmental assessment and measures to mitigate 	Contractor

Issue	Mitigation and Management Measures	Responsibility
<p>Community & stakeholder involvement</p>	<p>impacts.</p> <ul style="list-style-type: none"> • Develop a Community Involvement Plan for the design and the construction period. The Plan would include: <ul style="list-style-type: none"> ▶ identification of the local community likely to be affected by the project, including identification of residences, businesses, schools and other sensitive land uses; ▶ procedures for the establishment and functioning of a Community Liaison Group; ▶ procedures for informing users of the affected road network of planned traffic arrangements including temporary traffic switches; ▶ procedures for complaints handling and investigation; ▶ procedures for informing the local community of planned investigation and construction operations; ▶ provision of training for all employees and sub-contractors on the requirements of the Community Involvement Plan; and ▶ provision of a consultation process to provide regular consultation with relevant Council(s) on all issues which affect the relevant Council(s) area arising from the construction and operation of the MP92 Upgrade. • Delineate the responsibility of the RTA and the contractor in liaising with the community. • Establish and publicise a 24 hour toll-free information/complaints contact telephone number, which would enable any member of the general public to reach a person who can arrange appropriate response action to the complaint within two business hours. • Establish an appropriate representative Community Liaison Group. • Ensure the acquisition process is communicated to affected owners/occupiers to maximise certainty and understanding. 	<p>RTA/Contractor</p> <p>RTA</p> <p>RTA/Contractor</p> <p>RTA/Contractor</p> <p>RTA</p>
<p>Traffic & Transport</p>	<ul style="list-style-type: none"> • As a component of the CEMP, prepare a Traffic Management Sub Plan (TMP Construction) prior to the commencement of construction. The TMP Construction would include, but not be limited to: <ul style="list-style-type: none"> ▶ impacts on all existing traffic of the construction including, but not limited to, construction traffic, road closures, delays and detours of traffic; ▶ access to construction sites and site compounds; ▶ any changes to the existing number and width of traffic lanes; ▶ maximum and average truck volumes and expected hourly distribution; ▶ access to all properties including the garages on those properties; ▶ temporary traffic arrangements; 	<p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> ▶ a prohibition on heavy vehicle queuing on public roads unless otherwise agreed by the relevant Council(s); ▶ stormwater drainage; ▶ methods for implementing the TMP; ▶ access to adjoining side streets; ▶ access to adjoining properties; ▶ measures to reduce traffic intrusion along local roads; ▶ measures to be put in place in the event that MR92 is closed during construction. • Provide advance notice of road modifications using advertisements, signs, info sheets etc. 	Contractor
Land Use & Planning	<ul style="list-style-type: none"> • Ensure that the acquisition of any land would be in a responsive and sensitive manner and in accordance with the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> and the <i>RTA's Land Acquisitions Policy Statement</i>. • Notify and consult DIPNR in accordance with the <i>Rivers and Foreshores Improvement Act, 1948</i>. • Obtain a licence from DIPNR under the <i>Water Act, 1912</i> if water is to be extracted from prescribed creeks or if the creeks are to be realigned during construction works. Note, a permit is required if water is to be extracted for dust control. • Amend the boundaries of Parma Creek Nature Reserve and Jerrawangala National Park to suit the road alignment. • Amend boundaries of Morton National Park to exclude the preferred alignment. • Amend SEPP 58 to enable the MR92 Upgrade to proceed under Part V of the <i>Environmental Planning & Assessment Act, 1979</i>. 	<p style="text-align: center;">RTA</p> <p style="text-align: center;">RTA</p> <p style="text-align: center;">Contractor</p> <p style="text-align: center;">RTA</p> <p style="text-align: center;">RTA</p> <p style="text-align: center;">RTA</p>
Indigenous Heritage	<ul style="list-style-type: none"> • Sub-surface testing would be undertaken at PAD 1 to determine if cultural heritage material is present in the area. The RTA would make an application to the NPWS for a Preliminary Research Permit to conduct this work which would be completed prior to any works being undertaken in the vicinity of the PAD. • Sub-surface testing would be undertaken at Site ER-OS-1 to determine the extent of the site and the degree of disturbance which has occurred to the sub-surface deposit within the identified PAD. The RTA would make application to the NPWS to a Preliminary Research Permit to conduct this work. • Additional investigations would be conducted at PAD-RS1, PAD-RS2, RS3 and RS4 to determine if the road construction techniques would damage these potentially sensitive areas. These sites would be vulnerable to blasting and other major road construction techniques. Both direct and indirect impacts would be considered. • Sub-surface testing would be undertaken at PAD 2 on the southern side of the Endrick River to determine if cultural heritage material is present in the area. The RTA would make application to the NPWS for a Preliminary Research Permit to conduct this work. All work would be completed prior 	<p style="text-align: center;">RTA</p> <p style="text-align: center;">RTA</p> <p style="text-align: center;">RTA/Contractor</p> <p style="text-align: center;">RTA</p>

Issue	Mitigation and Management Measures	Responsibility
	<p>to construction works being undertaken in the vicinity of the PAD.</p> <ul style="list-style-type: none"> • The Walbunja People are to be notified (through their Solicitors) of the encroachment on their claim area by the proposal. 	RTA
Non-Indigenous Heritage	<ul style="list-style-type: none"> • A Section 140 permit would be sought from the Heritage Office for construction activities within the Bulee Mountain area to the west of the Bulee Gap. • A Conservation Management Plan would be prepared in consultation with the Heritage Office and NPWS to guide the future management of the Wool Road in the vicinity of Bulee Gap. • The RTA would prepare a nomination for that section of the Wool Road in the vicinity of Bulee Gap for inclusion in the State Heritage Register. • RTA will include signage containing public interpretation of the heritage values of that section of the Wool Road in the vicinity of Bulee Gap at appropriate points. • In addition, the AHC is to be notified of the intention to impact on the 1980 boundary of the Morton National Park within the Bulee Mountain area, classified as a registered place on the Register of the National Estate. 	<p>RTA</p> <p>RTA</p> <p>RTA</p> <p>RTA</p> <p>RTA</p>
Water quality, erosion, sedimentation & hydrology	<ul style="list-style-type: none"> • Prepare an integrated Soil and Water Management Plan (SWMP) as part of the CEMP to prevent an increase in pollutant loads being exported from site both during construction and operation and to minimise the impacts of sediment movement during construction on adjacent watercourses. This would be prepared before pre-construction works commence. It would include: <ul style="list-style-type: none"> ▶ provision of drainage catchment from site compounds/ office and materials storage areas; ▶ a contingency plan to be implemented for managing and disposing of fuel spills; ▶ if flocculants (for example polyelectrolyte) were to be used in the treatment of stormwater sedimentation, procedures would be developed to minimise the threat of damage to the environment that may potentially arise from discharge of treated waters containing such flocculants to the environment; ▶ provision of a truck wheel washing facility, where appropriate, for the effective cleansing of wheels prior to trucks leaving the construction site; ▶ a soil testing program at sites where material would be extracted; ▶ a contaminated soil remediation strategy; ▶ a monitoring program to ensure all planned erosion/sediment controls are in place and effective at all times ▶ a strategy to manage exposed ground surfaces; ▶ progressive site rehabilitation requirements; and ▶ reporting of the effectiveness of the sediment and erosion control system against identified water quality goals. 	Contractor

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> • Prepare a water quality monitoring program to be incorporated into the CEMP to ensure pre, during and post construction water quality of potentially affected watercourses is fully understood and documented. • Inspect embankments to determine the need for additional protection against scour. • Educate site personnel to comply with environmental protection practice, and become familiar with the sediment and erosion control measures implemented on site. • Engage a soil conservation and environmental officer(s) as required for the duration of the Project. • Designate areas for plant and construction material storage and provide cutoff drains to ensure runoff from upstream areas would be diverted around the site. • Designate and mark haul/transport routes to ensure minimal surface and vegetation disturbance. • Construct sediment fences on upstream edges of buffer areas and at base of fill embankments. • Provide appropriately designed sediment basins at the downstream end of catch drains and designated construction areas to collect excess sediment and allow adequate settlement prior to discharge to the receiving watercourse. This would include the provision of holding areas in case of spillages. • Provide devices such as retained vegetation, timber windrows, hay bales, silt fences and sand bags along catch drains to slow flow, reduce scour and capture part of the sediment from the runoff. • All temporary sedimentation retention basins would be designed and sized in accordance with '<i>Managing Urban Stormwater – Soils and Construction</i>' • Ensure incident management plans are prepared to deal with accidental spills to prevent pollution of waters. 	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>RTA/Contractor</p>
Biodiversity	<ul style="list-style-type: none"> • Prepare an integrated Soil and Water Management Plan that would, amongst other things, outline how the vegetation and habitats surrounding the road are to be protected, particularly during the construction phase of the project. Of particular concern, is the movement of sediment from the road works into local streams, swamps and downslope habitats. It should be noted that the proposed sealing of MR92 is expected to result in a reduced sediment load entering surrounding watercourses. • Prepare a Vegetation/Habitat Rehabilitation Plan to accompany the integrated Soil and Water Management Plan. Rehabilitation of the new road verges, the existing road where it is bypassed by the new alignment, and other disturbed areas, would be a major part of the post construction works. Rehabilitation would be undertaken as each stage of the road is completed under the supervision of an appropriately qualified Contractor. Among other things, the plan would specifically deal with: <ul style="list-style-type: none"> ▶ treatment of the top soils to maximise their value to rehabilitation; ▶ the sourcing of local plant species for revegetation; 	<p>Contractor</p> <p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> ▶ methods to stabilise the soil surface as soon as possible after completion of the works; ▶ maximising the use of organic debris, such as logs, branches and vegetation; ▶ methods to halt the incursion of vehicles onto the rehabilitation areas; ▶ methods to maximise the opportunities for fauna to recolonise the rehabilitation areas and to traverse such areas; ▶ revegetation methods to be used, such as direct seeding, brushing (i.e. spreading branches containing seed) and planting; and ▶ methods to collect seed from local native species for use during revegetation works. • All personnel working on the project would undergo an induction program that addresses all environmental protection issues. These issues would include: <ul style="list-style-type: none"> ▶ the protection of rare and threatened plant populations; ▶ protecting important habitat areas; ▶ the measures outlined in the Soil and Water Management Plan, particularly the protection of streams and swamps; ▶ the measures outlined in the Vegetation/Habitat Rehabilitation Plan, particularly the protection of completed rehabilitation areas; ▶ the identification of “no-go” areas for vehicles; ▶ the need to control the spread of pollutants such as litter within the study area, much of which is in or adjacent to conservation reserves. • An environmental officer would be appointed to the project and their brief include: <ul style="list-style-type: none"> ▶ ensuring that the goals set in the Soil and Water Management Plan are being achieved; ▶ ensuring that the goals set in the vegetation/habitat rehabilitation plan are being achieved; ▶ carrying out regular inspections of the works to ensure that environmental safeguards are being followed; ▶ identifying where environmental measures are not meeting the targets set and where improvement can be achieved; ▶ preparing reports on a three monthly basis outlining the works undertaken and the achievements that have been met, as well as identifying those areas where improvements were made. • All “no go” areas in the project area would be identified with a standardised marking system, such as a particular colour flagging tape or fence that is not used for any other purpose. • Where there is a significant deviation from the existing road alignment, the edge of the new alignment would be marked so that the bushland between the new road and the existing road is retained and is not cleared as part of the construction works. • An appropriate barrier would be erected around the small population of <i>Acacia bynoeana</i>. These plants are located approximately 12 m from the proposed alignment and would ensure that these plants are not inadvertently destroyed during the construction phase or post-construction rehabilitation of the existing road. Construction personnel would also be advised of the “no-go” area. 	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> • To ensure that minimal impact occurs to the stand of <i>Eucalyptus langleyi</i> in the vicinity of Hames Road, the following procedures would be undertaken before the commencement of construction: <ul style="list-style-type: none"> ▶ the area would be inspected by a botanist in the company of the construction engineer; ▶ appropriate barriers (either temporary or permanent) would be installed around the population on both sides of the road; ▶ personnel working on this project would undergo an induction program that includes environmental protection issues such as the protection of threatened plant populations; ▶ the Environmental Officer would be present when the initial earthworks are carried out to ensure the plants would be protected; ▶ the removal of <i>Eucalyptus langleyi</i> plants would be restricted to no more than the four plants located immediately on the existing road edge; ▶ the Environmental Officer would prepare a report when this section of road has been completed and submitted to the NPWS. The report would detail the measures taken to protect the population, the success or otherwise of those measures and any additional measures necessary to ensure the long-term protection of the plants. It would also comment on the need for permanent fencing and signage, and further monitoring. • A Koala proof fence would be erected on either side of the proposal west of the Bulee Mountain area from the Endrick River for a distance of 460m. The location of this fence would be determined during the detailed design stage in consultation with NPWS. Additionally, appropriate signs (in accordance with RTA signage policy) would be erected in the vicinity to alert motorists to the possibility of Koalas and other fauna being present on the road, particularly at night. • In terms of potential impact on Yellow-bellied Glider and Powerful Owl, the area of forest to be removed has been minimised. At Sassafras, the road width was reduced to a minimum in order to retain the tall forest and the avenues of trees along the edge of the existing road. The same principle would be followed in other places where there is forest likely to be inhabited by Yellow-bellied Gliders, for example at the Turpentine Road junction. During the detailed design, an ecologist would determine exactly where the road corridor should be made narrow to avoid clearing forest habitat. • The detailed design stage would include the preparation of a comprehensive Soil and Water Management Plan to carefully control soil movement and the sedimentation of watercourses which would minimise the potential to impact the Heath Frog. The NPWS would be consulted during preparation of the Plan. The main goal would be to minimise the movement of sediment to the areas surrounding the road, particularly watercourses, and to address any impacts from the proposal. • The detailed design stage would include consultation with an orchid specialist to determine the exact locations of the known populations of <i>Genoplesium superbum</i> east of Bulee Mountain, in order to determine what modifications can be made to the road alignment to reduce impacts on these populations. • The detailed design stage would include consideration to minimise impacts on <i>Eucalyptus triflora</i> and <i>Dillwynia crispifolia</i>, on sandstone escarpment areas and on vegetation present around drainage lines. • The detailed design stage would take into consideration minimising, and avoiding if practicable, impacts on hollow-bearing trees. The clearing of vegetation would be undertaken preferably when microchiropteran bats are most active (i.e. during the warmer months). • Road widening in the vicinity of the Telstra sub-station would be restricted to the southern side of the road to avoid a population of an unnamed 	<p>Contractor</p> <p>Contractor</p> <p>Contractor/RTA</p> <p>Contractor</p> <p>RTA</p> <p>RTA</p> <p>RTA</p> <p>Contractor / RTA</p>

Issue	Mitigation and Management Measures	Responsibility
Noise and vibration	species of <i>Prasophyllum</i> (to the east of the Telstra substation).	Contractor / RTA
	<ul style="list-style-type: none"> • The closure of particular access tracks identified by Dr Jonathon Webb to restrict access to the habitat of the Broad Headed Snake is planned and would be undertaken in consultation with NPWS. 	Contractor
	<ul style="list-style-type: none"> • Develop and Construction Noise and Vibration Sub-Plan as a component of the CEMP. 	Contractor
	<ul style="list-style-type: none"> • Where works may cause damage to nearby buildings and structures, conduct a pre-construction dilapidation survey. 	Contractor
	<ul style="list-style-type: none"> • Review methods of construction and detailed design for modifications that may result in changes to noise emissions or impacts, and review noise assessment as necessary. 	Contractor
	<ul style="list-style-type: none"> • Prepare a pro-active community consultation program to assist with concerns of the community, minimising the likelihood of complaints in relation to noise. 	Contractor
	<ul style="list-style-type: none"> • Install high efficiency mufflers for major plant items, particularly those that would be used for long periods on the project. 	Contractor
Energy	<ul style="list-style-type: none"> • Conduct awareness program as part of induction training for all site personnel regarding energy and materials conservation methods contained in the CEMP. 	Contractor
Waste minimisation & management	<ul style="list-style-type: none"> • Develop a Waste Minimisation and Management Plan to be incorporated into the CEMP. It should: <ul style="list-style-type: none"> ▶ identify procedures for handling, storing and transporting construction materials; and spoil and waste including water and contaminated materials; ▶ identify and implement practical strategies, for <ul style="list-style-type: none"> (i) waste avoidance; (ii) waste reduction; (iii) material reuse; and (iv) recycling; ▶ provide a plan for the treatment of contaminated material, as appropriate; ▶ identify any site for final disposal of any material and any remedial works required at the disposal site before material is accepted; ▶ provide a procedure for disposal to a landfill licenced by the EPA for material which cannot be used. 	Contractor

Issue	Mitigation and Management Measures	Responsibility
Hazards & Risks	<ul style="list-style-type: none"> • RTA and design contractor to specify the use of recycled and recyclable products to the greatest extent possible, subject to practicality and cost effectiveness during detailed design phase. 	RTA/ Contractor
	<ul style="list-style-type: none"> • Train all employees in the waste management plan and recycling opportunities. 	Contractor
	<ul style="list-style-type: none"> • The Contractor would use recycled materials, to the limits of design in concrete, roadbase, asphalt and other construction materials (see RTA specification R116, R3051 and R3052). 	Contractor
	<ul style="list-style-type: none"> • Undertake a hazard assessment of the detailed design; 	RTA
	<ul style="list-style-type: none"> • Procedures would be developed for the containment and clean up of any spill events, emergency procedures training programs and registers for all construction and operational staff and protocols for notifying appropriate authorities in the event of an emergency. 	Contractor
	<ul style="list-style-type: none"> • Procedures for the management and storage of dangerous goods during construction would be developed and implemented in accordance with the <i>Dangerous Goods Act, 1975</i>. 	Contractor

Table 8.6: Measures, Controls and Commitments for the Preferred Activity – Construction

Issue	Mitigation and Management Measures	Responsibility
General	<ul style="list-style-type: none"> Undertake internal audits against the CEMP during the construction phase. EMR to undertake quarterly audits of the CEMP and supplementary EMPs. 	<p>RTA</p> <p>RTA</p>
Community & stakeholder involvement	<ul style="list-style-type: none"> Prior to the commencement of construction and then at three-monthly intervals, RTA would advertise in relevant local newspapers the nature of the works proposed for the forthcoming three months, the areas in which these works are proposed to occur, the hours of operation and a contact telephone number. Ensure that the local community and businesses are kept informed (by appropriate means such as quarterly newsletters, newspaper advertisements, monthly web site updates and community information displays, etc.) of the progress of the project, including any traffic disruptions and controls, construction of temporary detours and work required outside the nominated working hours including, but not limited to noisy works, prior to such works being undertaken. Brief all construction staff on the communications plan. During construction, record details of all complaints received relating to any works or activities carried out for this project and ensure that at least a verbal response on what action is to be taken is provided to the complainant within 2 business hours (unless the complainant agrees otherwise) and a detailed written response outlining the measures which were taken would be provided within (7) calendar days. Information about all complaints received would be made available to the EMR daily. Complaints are to be received, logged tracked and responded to within the specified timeframe. 	<p>RTA/Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p>
Traffic & Transport	<ul style="list-style-type: none"> The Construction Traffic Management Sub-Plan would be implemented. Access to properties affected by the proposal would be maintained throughout the construction period. Should there be a need to close any access temporarily, then owners of the affected property would be informed of the extent, timing and duration at least 24 hours prior to it happening. Any access way affected by the proposal would be reinstated to an equivalent standard or that adequate compensation would be negotiated with the relevant landowner(s). 	<p>Contractor</p> <p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
Geotechnical	<ul style="list-style-type: none"> An appropriately qualified independent auditor would be engaged to conduct a safety audit/s of the detailed design and the audit/s would be provided to the Director-General at least one month before operation commences. On the basis of this audit/s, appropriate measures would be applied which would address all safety impacts. Provide clear signage of road network changes. Provide safe pedestrian access, with minimal inconvenience, at all times during construction. Ensure ongoing consultation with affected residents and other properties in areas where road closures and diversions are to occur. Compact and revegetate disturbed soils as soon as possible to reduce erodibility of alluvial soils. 	<p>RTA</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor/RTA</p> <p>Contractor</p>
Indigenous Heritage	<ul style="list-style-type: none"> Scarred trees T-ST-1, BC-ST-1, BC-St-2 and S-ST-1 would be avoided by the proposal. If avoidance is not practicable for S-ST-1 then additional research would be conducted to determine the nature of the scar as it has potential indigenous and non-indigenous heritage value. If avoidance of these trees is not practical then discussions would be held with NPWS and the Nowra LALC to determine appropriate management procedures for the site. Any clearing of vegetation from Chainage 19100 to 20200, 22500 to 23500, 27000 to 28000, 30100 to 32700, and 43200 to 45000 would be monitored by a representative of the Nowra/ Ulladulla LALC. Should any sites be identified within the impact area, work in the vicinity of the site would cease and an officer of the NPWS Queanbeyan Office informed so that an appropriate management strategy can be developed for the site. Site 58-1-0073 (grinding grooves) is located immediately north from the bridge. All work in the Tianjara Creek area would be confined to the current road alignment. No work sites spoil dumps etc would be located in the area. Construction workers would be advised of the sensitive nature of all sandstone exposures in the vicinity of the bridge to ensure that this site is protected against adverse impacts. Should any sites be found during construction works for the project, all work would stop in that area and the NPWS and Nowra and Ulladulla LALCs contacted for advice. Should project development impact upon areas outside those identified in the EIS, NPWS and the LALCs would be consulted and any additional investigations required would be undertaken prior to construction activities taking place to minimise the potential for adverse impacts to occur. 	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor/RTA</p> <p>Contractor/RTA</p>
Non-Indigenous Heritage	<ul style="list-style-type: none"> Any unexpected finds of heritage items or relics during construction or clearing would result in work ceasing at that site and contact made with the local Council and the NSW Heritage Office. 	<p>Contractor/RTA</p>
Water quality, erosion, sedimentation & hydrology	<ul style="list-style-type: none"> Monitor water quality in affected watercourses both upstream and downstream of construction works in accordance with the approved schedule in the CEMP. Water quality monitoring data would be used by the contractor to determine the effectiveness of water quality management devices in controlling water pollution. 	<p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> • Water to be discharged via any stormwater system into waterways would be treated so that it does not cause significant pollution of receiving waters, and meets the requirements of any standards specified in the approval of the project by government authorities, or in the absence of specified standards, general water quality guidelines relevant to the project. • Where water quality results from monitoring indicate unacceptable levels of water pollution arising from construction activities, the design and construction of water quality management devices would be reviewed with a view to ensuring that relevant standards are met. • All water collected during construction which is likely to be contaminated, would be tested, treated, handled and disposed of so that it does not pollute receiving waters. • Best treatment practices would be used to minimise the discharge of water treated with flocculants to the environment, where those flocculants may pose a risk to the environment. The application of flocculants in treating stormwater and runoff would be made with reference to relevant guidelines. • Runoff and stormwater would be used, where practicable, for dust suppression during construction with reference to the Department of Housing's <i>Managing Urban Stormwater - Soils and Construction</i> and would be used, where practicable, for irrigation of landscaping and revegetation with reference to the EPA's <i>Environmental Guidelines for Utilisation of Treated Effluent by Irrigation</i>, where practicable. • Ensure that all stockpiling areas would: <ul style="list-style-type: none"> ▶ be located outside any drainage line or environmentally sensitive area so that no negative impacts occur in residential areas, heritage items, archaeological sites or in native plant communities; ▶ be only on land leased or owned by the RTA for the purposes of road construction; ▶ contain stockpiles which are: <ul style="list-style-type: none"> (i) covered or stabilised at all times; and (ii) not unduly visually intrusive on the surrounding environment or residents and which are of a size (surface area and height) that facilitates efficient management of wind and water erosion; ▶ be located away from areas of contaminated or potentially contaminated soils; and ▶ only be used during the construction period and the areas would be rehabilitated as soon as practicable once use is no longer required. • Provide wheel washing areas to minimise unnecessary soil transportation from construction areas. • Construct diversion banks at upstream boundary of construction activities to ensure upstream runoff is diverted around exposed areas. Construct catch drains at downstream boundary to ensure sediment laden runoff is contained and diverted to treatment areas and not allowed to flow over undisturbed areas and into existing drainage systems that may become blocked. • Ensure construction activities are confined within the boundaries identified. • Regularly maintain and inspect all mitigation measures and repair or desilt where necessary after severe rainfall to ensure they are in working order at all times. 	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
Biodiversity	<ul style="list-style-type: none"> Progressively revegetate cut and fill areas as appropriate. 	Contractor
	<ul style="list-style-type: none"> Progressively complete construction areas to ensure sites are exposed for minimum duration. 	Contractor
	<ul style="list-style-type: none"> Cover stockpiles, if necessary, to minimise transportation of sediment material. 	Contractor
	<ul style="list-style-type: none"> Mulch and retain vegetation and topsoil for site rehabilitation and landscaping works. 	Contractor
	<ul style="list-style-type: none"> In consultation with the NPWS, the large number of tracks and roadside clearings not required for management of National Park or road maintenance would be closed off using appropriate methods. The upgrading of the road would place pressure on the National Park lands surrounding the road, as potentially more visitors would be travelling through the study area. The rationalisation of the bush tracks would go a long way to controlling impacts on park lands from inappropriate visitor use. Other measures would also be required, such as the provision of rest areas and appropriate signage. 	Contractor/RTA
	<ul style="list-style-type: none"> All construction works and all construction vehicle traffic would be restricted to the road construction area. The road construction area would incorporate all areas to be disturbed by the works including the easement for the new alignment, construction compounds, machinery/material storage areas, and spoil storage and disposal areas. Where necessary, this would be marked on site to restrain vehicles to the corridor and out of the "no-go" areas. 	Contractor
	<ul style="list-style-type: none"> Cleared vegetation would not be burnt as it provides a valuable resource for rehabilitating vegetation and habitat to disturbed areas. This material would be stored for a minimum period of time. Mulching is not necessary and is not recommended, logs, branches, etc. would be used "as is". Rocks would also be used to advantage in rehabilitation works. 	Contractor
	<ul style="list-style-type: none"> With regard to the requirements of the Glossy Black-Cockatoo, the clearing of Black She-oak <i>Allocasuarina littoralis</i> at Bulee Mountain would be kept to the minimum required to upgrade the road. Any vegetation rehabilitation carried out in this area would include Black She-oak, grown from local seed; 	Contractor
	<ul style="list-style-type: none"> In terms of protecting the endangered ecological community White Box-Yellow Box-Blakely's Red Gum Woodland, particular care would be undertaken with designing and constructing the proposal between the Endrick River and Nerriga to retain the large <i>Eucalyptus melliodora</i> trees, where possible. Understorey species from local seedbank would be used in any revegetation treatments in these areas. 	Contractor
	<ul style="list-style-type: none"> In terms of protecting <i>Eucalyptus triflora</i> and <i>Dillwynia crispii</i>, care would be taken during construction, as many plants occur immediately adjacent to the road alignment. 	Contractor
	<ul style="list-style-type: none"> The population of an unnamed species of <i>Prasophyllum</i> located on the northern side of the road to the east of the Telstra substation would be protected during construction activities. 	Contractor
<ul style="list-style-type: none"> Riparian vegetation disturbance would be kept to a minimum, and any disturbed sites revegetated with local plant species. 	Contractor	
<ul style="list-style-type: none"> Emphasis would be placed on undertaking bridge and culvert construction during low rainfall months. 	Contractor	

Issue	Mitigation and Management Measures	Responsibility
Air Quality	<ul style="list-style-type: none"> • As part of the Construction EMP(s), prepare a specific Air Quality Sub Plan following consultation with the EPA. The Sub Plan would provide details of all dust control measures to be implemented during the construction stage. • Under extreme wind conditions, construction activities would be halted. • Where there is a risk of losing material, ensure that construction vehicles using public roads be maintained and covered to prevent any loss of load, whether in the form of dust, liquid or solids. • Ensure that all spoil, waste or fill material be stored no less than 750 metres from any sensitive receptor where practicable and would be covered or stabilised at all times. • In accordance with the <i>Protection of Environment Operations (Control of Burning) Regulation 2000</i>, ensure that no open burning or incineration be permitted on site unless otherwise approved by the EPA. • Implement appropriate methods for dust control including: <ul style="list-style-type: none"> ▶ Spraying of earthworks and roads with water or other appropriate liquids; ▶ Install facilities such as wheel washes and washdowns to prevent sediment from being deposited on roads off the construction site; ▶ Ensure that the tailgates of all vehicles transporting materials to and from construction sites are securely fixed prior to loading and immediately after loading and materials covered immediately prior to transportation; ▶ Remove mud from the wheels and bodies of haulage equipment before they enter public roads or other sealed pavements; ▶ Implement procedures to clean up mud deposited on public roads; ▶ Put in place a "call-out" system for events that require dust suppression out of hours and on weekends; ▶ Install anemometer at construction site office to determine when to increase watering and when to cease works in periods of increasing winds; ▶ Re-program some activities during periods of high wind so as not to cause nuisance or danger to people or property ▶ Maintain the exhaust systems of construction plant, vehicles and machinery to manufacturers' specifications to minimise exhaust emissions. 	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p>
Noise and vibration	<ul style="list-style-type: none"> • Apply best practice noise mitigation measures including: <ul style="list-style-type: none"> ▶ maximising the offset distance between noisy plant items and nearby noise sensitive receivers; ▶ avoiding the co-occurrence of noisy plant working simultaneously close together and adjacent to sensitive receivers; ▶ measures to control the use of reversing alarms on vehicles used during any night time works; ▶ minimising consecutive night time works in the same locality; ▶ orienting equipment away from sensitive areas; ▶ carrying out loading and unloading away from sensitive areas; and 	<p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> ▶ selecting site access points and roads as far as possible away from sensitive receptors. • All construction and associated activities would be restricted to the hours of 7:00 am to 6:00 pm (Monday to Friday); 8:00am to 1:00 pm (Saturday) and at no time on Sundays and public holidays.¹ • Construction noise levels would be monitored to verify compliance with the Construction Noise and Vibration Management Sub Plan. Should monitoring indicate exceedences consultation would be held with DIPNR and the EPA to implement best available additional mitigation measures to the satisfaction of Director-General. • Ensure that sheet piling and any other activities at or near ground level which result in impulsive or tonal noise generation are only scheduled between the following hours: <ul style="list-style-type: none"> ▶ 8 am to 12 pm, Monday to Saturday; and ▶ 2 pm to 5 pm Monday to Friday. <p>Where these activities are undertaken for a continuous three hour period and are audible to noise sensitive receptors, a minimum respite period of at least one hour would be scheduled before activities recommence.</p> • No construction works would occur on Sundays, when the two churches in Nerriga are normally occupied. Consequently, no significant impacts from construction activities would be expected at these special use buildings. • A community consultation program would be in place to assist with concerns of the community. Residents within 100 m would be notified of the schedule of construction works and given forewarning at least a week in advance for especially noisy activities, such as rockhammering and piling. • Ensure that public address or other communication systems at any construction site are used so as not to cause a disturbance outside the standard working hours. Any such system would be designed and installed such that sound is minimised at nearby residential buildings and sensitive receptors as by designing and installing the public address system with its long axis directed away from sensitive sites unless otherwise specified. • Where rockbreakers are required in close proximity to residences (10m – 20m) a “dampened” tip would be used to minimise the transfer of vibration during hammering operations conducted at night. 	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p>

¹ Work outside these hours may be required at times and may be permitted. It would include:

- ~~any works which do not cause noise emissions to be audible at any nearby residential property or at any community facility during operation of that facility;~~
- the delivery of materials which is required outside these hours as requested by Police or other authorities for safety reasons;
- emergency work to avoid the loss of lives, property and/or to prevent environmental harm;
- ~~time critical work such as cutting of joints in concrete pavement layers;~~
- any other work as agreed through negotiation between the RTA and potentially affected noise receivers through the Construction Noise and Vibration Sub Plan process provided local residents are informed of the timing and duration at least 48 hours prior to commencement of the work.

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> • In order to minimise noise impacts during construction, consult with relevant Council(s) and where appropriate, erect operational noise mitigation measures prior to the commencement of construction. • Investigate and apply noise source controls to reduce noise from all plant and equipment. Examples of appropriate noise source controls could include efficient silencers, low noise mufflers and alternatives to reversing alarms. • All fixed and mobile plant would be inspected regularly and tested to ensure the emission levels do not deteriorate over the life of the project. Noise compliance checks would be carried out on all major equipment to ensure the noise levels meet the relevant Australian standards. • Maintenance of construction equipment and selection of plant and equipment would take into consideration the resulting noise emissions. • Machinery used would be appropriately sized to prevent overloading and associated over-revving. • Compression braking would be avoided near residential dwellings. • Low speeds would be maintained within the Bulee Mountain area to minimise engine noise and chassis rumble. • Monitoring of noise levels would be undertaken at key project milestones to check that noise levels are maintained within the range predicted. • Undertake dilapidation surveys on residences within potential radius of effect prior to commencement of rockbreaking and pile driving activities. • Where rockbreakers are required in close proximity to residences (10m – 20m) a “dampened” tip would be used to minimise the transfer of vibration during hammering operations conducted at night. • Blasting may occur within the Bulee Mountain area. The distance from the area of blasting to the nearest dwelling, “Wiluna”, is at least 1.6 km. In order to comply with the air overpressure objective of 115dB (Peak) and the groundborne vibration limit of 5 mm/s at the nearest dwelling, it has been predicted that the maximum allowable Maximum Instantaneous Charge (MIC) of explosive is around 2,500 kg allowing for a small safety margin. However, the Eastern Gas Pipeline is located in proximity to the existing road alignment. Blasting is not permitted within 200 m of the pipeline and therefore during the construction of the proposal, the Construction Contractor would need to comply with Duke Energy’s requirements. • Normal road construction requires the use of a compactor to ensure a smooth and stable sub-surface for the roadway. A vibratory compactor is frequently considered an efficient way to achieve this objective. For residents closer than 20 m, a vibratory compactor is not recommended, due to the potential for building damage. Additionally, works in the vicinity of the Eastern Gas Pipeline where the use of a vibratory roller is proposed would need to be agreed to by Duke Energy. Therefore, for works through Nerriga and in some locations affected by the Eastern Gas Pipeline, the use of a non-vibratory roller would be required. 	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p>
Energy	<ul style="list-style-type: none"> • Implement energy efficient work practices including: <ul style="list-style-type: none"> ▶ Conduct energy conservation awareness program as part of site induction; ▶ Schedule activities during off-peak traffic periods to minimise the potential for major disruption to traffic; 	<p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> ▶ Dispose of excess spoil as close to the MR92 Upgrade as possible; ▶ Conduct regular energy audits during the project to identify areas for greater energy savings. • Water use would be minimised and regulated and, where possible, water conservation techniques would be used. This would include aerated taps, waste efficient appliances, trigger action hoses, low/dual flushing or composting toilets, and prompt repair of leaking taps and pipes. • Ensure efficient operation and use of plant, equipment and vehicles during the construction phase. 	<p>Contractor</p> <p>Contractor</p>
<p>Waste minimisation & management</p>	<ul style="list-style-type: none"> • Waste to be disposed in compliance with the requirements of the <i>WARR Act 2001</i> at a waste facility licensed to accept the type of waste presented. • Minimise the size of excavations to reduce the amount of spoil generated. • Balance cut and fill works where possible. • Any soil not suitable for use in road embankments would be used for mounding for landscaping where practicable. • Contractors to employ all reasonable measures to reuse and recycle excavated spoil material by utilising as fill for road works, • Surplus excavated sandstone would be crushed and reprocessed for use in construction materials. • Trees cleared during construction would be used for timber windrows for sedimentation control or revegetation to re-establish habitat on site. • Topsoil free of weeds that is stripped prior to undertaking earthworks would be stockpiled and stored. Following completion of earthworks, topsoil would be spread on the road batters as part of landscaping and revegetation works. Any stored stockpiles would be protected from water and wind erosion by spreading with hydroseed until required or by covering with a geotextile fabric. • Large logs and tree limbs to be used to assist in sediment control. • Recycling facilities would be provided for general rubbish, i.e. glass, plastic, waste paper and metals, utilising colour-coded bins. • Investigate the availability of treated wastewater for use in spraying roadworks to reduce dust generation or for watering progressive landscape works. • Empty oil and fuel drums to be collected or returned to recycling facilities. 	<p>Contractor</p> <p>Contractor / RTA</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p>
<p>Excavated/constructi</p>	<ul style="list-style-type: none"> • Reuse/recycle as much excavated material as possible on the construction site. 	<p>Contractor</p>

Issue	Mitigation and Management Measures	Responsibility
<p>on materials</p> <p>Contaminated soil</p>	<ul style="list-style-type: none"> Dispose of excess excavated material/spoil at a licensed landfill. No material would be permitted to be disposed of in any permanent waterway. If fill or soils were identified as contaminated, these materials would be kept separate from clean material and appropriate storage, transport and disposal measures implemented to ensure that risk to workers and the public is minimised. Contaminated material would be quantified, separated from clean material and disposed of in accordance with the <i>Contaminated Land Management Act, 1997</i>. 	<p>Contractor</p> <p>Contractor</p>
<p>Hazards & Risks</p>	<ul style="list-style-type: none"> Undertake a hazard assessment of the complete project prior to commencement of operation. Sufficient sedimentation and accidental spill basins would be provided at three locations along the route (adjacent to Tianjara Creek, Booljah Creek and the Endrick River) to ensure that a minimum of 20 m³ of a toxic spill can be contained (as specified in RTA Code of Practice for Water Management, 1999). The spilt material would remain in the basin until pumped out and removed by an appropriately licensed contractor to an appropriately licensed waste facility Bund storage areas for oils and other hazardous liquids in accordance with Australian Standards and collect any spillages for off-site disposal at a licensed facility. Conduct regular audits of storage areas to identify and address storage concerns (inappropriate storage practices, leaking bunds). Ensure that spill control material is readily available. Permit potentially hazardous activities, including washing out of delivery vehicles, washing down of construction plant, refuelling plant and handling hazardous chemicals to be undertaken only at appropriate locations that have adequate environmental protection measures. 	<p>RTA</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor/RTA</p> <p>Contractor</p> <p>Contractor</p>

Table 8.7: Measures, Controls and Commitments for the Preferred Activity – Operation

Issue	Mitigation and Management Measures	Responsibility
General	<ul style="list-style-type: none"> • At least one month prior to commissioning of the proposal the RTA would submit to the Director General, DIPNR a compliance report detailing compliance with all relevant conditions that apply prior to commencement of operation and would address: <ul style="list-style-type: none"> ▶ results of environmental monitoring required under this Approval including interpretation and discussion by a suitably qualified person; ▶ a record of all complaints and the action taken to mitigate all such complaints; ▶ recommendations with respect to compliance issues; and ▶ action taken or proposed to implement the recommendations made in terms of approvals and/or studies. • The RTA would notify the Director General, DIPNR and all relevant Government Authorities in writing of the commencement of the operation of the project at least 1 week prior to the relevant commencement date. • An Environmental Impact Audit Report would be submitted to the Director General, DIPNR by the RTA, as appropriate, 2 and 7 years from the start of operations or at any time as requested by the Director General within the first 10 years of operation. The Environmental Impact Audit Report would be undertaken by an independent person(s) or organisation. The Report would assess the key impact predictions, made in the EIS and any supplementary studies, and provide details of the extent to which actual impacts reflect the predicted impacts during the periods required. The Report would address the suitability of implemented mitigation measures and safeguards including the suitability of monitoring and training. 	<p>RTA</p> <p>RTA</p> <p>RTA</p>
Landscape	<ul style="list-style-type: none"> • All landscaping works associated with the MR92 Upgrade proposal would be monitored and maintained by a suitably qualified landscape specialist for road verges for a period of not less than three years. 	RTA
Water quality, erosion, sedimentation & hydrology	<ul style="list-style-type: none"> • Prepare and implement an Operational Soil and Water Management Sub Plan containing: <ul style="list-style-type: none"> ▶ details of emergency spill containment devices at new crossings and where space permits, at old crossings; ▶ maintenance of pavement, landscape area, drainage systems and pollution control devices; ▶ procedures for the management of impacts on surface and ground water, including stormwater in storage, sediment devices and flooding and hydrology impacts; and ▶ regular inspection and maintenance timetable and procedure for all facilities including wetland filters, grass filter strips, gross pollutant traps and sedimentation basins for the life of the project. • Prepare a Flood and Stormwater Management Sub Plan (Operation) at least 3 months prior to the completion of construction works, in consultation with the EPA, DIPNR and the relevant Councils. The Sub Plan would be available for implementation at the commencement of operation and would include but not be limited to: <ul style="list-style-type: none"> ▶ details of an effective flood emergency evacuation response. The response would consider road users, residents, business operators and rescuers; ▶ details of stormwater system maintenance sufficient to minimise flood liability and maintain discharged water quality. 	<p>RTA</p> <p>RTA</p>

Issue	Mitigation and Management Measures	Responsibility
Biodiversity	<p>The Plan would be prepared to the satisfaction of relevant authorities, including the EPA and DIPNR.</p>	
	<ul style="list-style-type: none"> • Monitoring of rehabilitation would be undertaken for a five year period after the completion of road works at each location. A qualified ecologist or botanist would undertake all monitoring. The timing of inspections would be immediately after rehabilitation has been completed, then one month after, then once every six months. A report would be prepared after each inspection and forwarded to the NPWS and the two Councils. Measures necessary to improve the success of the rehabilitation would be included in the report and acted upon after consultation with NPWS and Councils. The report would cover the following matters as a minimum: <ul style="list-style-type: none"> ▶ the general condition of the rehabilitated areas; ▶ the success of the revegetation methods used; ▶ the occurrence of weeds; ▶ the occurrence of any rare plants that are regenerating (including <i>Eucalyptus triflora</i> and <i>Dillwynia crispil</i>); ▶ the incidence of erosion; and ▶ comment on fauna habitat values. 	RTA
	<ul style="list-style-type: none"> • Roadkills would be monitored for a period of one year after completion of construction. Inspections would be carried out immediately after completion of each section of road, then monthly. A report would be prepared by a qualified ecologist and forwarded to NPWS, RTA and respective Councils at three monthly intervals. Measures identified as necessary to reduce roadkills would be included in the report and discussed with the NPWS and RTA within two weeks of report preparation. 	RTA
	<ul style="list-style-type: none"> • Along sections of the road where there are particular ecological values, permanent signs indicating this fact would be erected after completion of construction. Sites of particular concern are the stand of <i>Eucalyptus langleyi</i> in the eastern section of the study area and the Koala habitat between the Bulee Mountain area and the Endrick River. Signs would help motorists to identify these localities, but more importantly, such areas need to be identified for road maintenance crews. The location of the signs would be determined by a qualified ecologist once the construction of the road is complete and any signs erected would be required to comply with RTA signage policy. 	RTA
	<ul style="list-style-type: none"> • Sediment input in waterways is considered to be the greatest threat to the aquatic environment as a result of road construction. Therefore, sedimentation control measures would be implemented as outlined in this table. The existing road is the main source of current sediment loads. Sealing of the road alignment would result in substantial reductions in the build up of sediment within culverts and local waterways leading to long term benefits to water quality, riparian habitat and aquatic ecology. 	RTA
	<ul style="list-style-type: none"> • On the completion of construction work, areas of bare soil or heavily infested weedy areas would be professionally revegetated with suitable local indigenous shrub species in conjunction with stabilisation measures such as matting, and mulching to stabilise soil batters and embankments. Revegetation with locally indigenous species collected from local seed sources is preferred and would be undertaken in consultation with NPWS. • Any noxious plant species or significant environmental weeds would be removed during and following revegetation works in accordance with the <i>Noxious Weeds Act 1993</i> and <i>Pesticides Act, 1999</i>. Regular checks would be made in the early seeding stage and weeds removed. 	RTA
Noise and vibration	<ul style="list-style-type: none"> • Following consultation with the EPA a detailed Operational Noise and Vibration Management Sub-Plan (NVMP Operation) would be prepared in accordance with the NSW Government's guideline Environmental Criteria for Road Traffic Noise. 	RTA

Issue	Mitigation and Management Measures	Responsibility
	<ul style="list-style-type: none"> • Monitor operational noise in accordance with the Operational Noise Management Sub Plan at adjoining properties to assess the effectiveness of noise mitigation measures, during operation of the upgraded MR92. In consultation with the EPA, assess the adequacy of the traffic noise mitigation measures at the end of one year from the commencement of operation with regard to the criteria specified in the Operational Noise Management Sub Plan. Should assessment indicate a clear trend in traffic noise levels, as a result of MR92 operations, which exceed Operational Noise Management Sub Plan defined noise goals, the Proponent would implement further mitigation measures in consultation with affected landowners and/or occupiers. 	RTA
Waste minimisation & management	<ul style="list-style-type: none"> • Develop and implement measures, in partnership with NPWS and SCC to avoid, minimise, reuse/recycle, treat and dispose of waste streams during operation. • Have in place, prior to the commencement of operations, a procedure for dealing with waste along the route. 	RTA RTA
Hazards & Risks	<ul style="list-style-type: none"> • Co-ordinate with NSW Police to enforce speed limits and hold random breath tests along the upgraded MR92. • Erect appropriately visible signage to warn of the fire hazards and the fines for illegally disposing of rubbish along a roadside. 	RTA RTA

APPENDIX B
Conservation Management Policy,
Strategy & Implementation

APPENDIX C
Results of Database Searches