



F3 Freeway to Branxton

National Network

Modification to permit staged construction

SEPTEMBER 2005





F3 Freeway to Branxton Link

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28 September 2005



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Glossary

Approved Project	The activity approved by the then Minister for Urban Affairs and Planning in November 2001. Since 1 August 2005, the F3 to Branxton Link is a project approved under Part 3A of the EP&A Act.
CoA	Condition of Approval by the then Minister for Planning
CoC	Condition of Concurrence by the then Director-General of the former National Parks and Wildlife Service (now a part of the DEC)
DCM	Design, construct and maintain
DEC	Department of Environment and Conservation
DIPNR	Department of Infrastructure, Planning and Natural Resources, now the Department of Planning.
DoP	Department of Planning
DUAP	Department of Urban Affairs and Planning, now the Department of Planning.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection & Biodiversity Conservation Act 1999</i>
F3 to Branxton Link	The Approved Project.
MIP	Minister for Infrastructure and Planning, now the Minister for Planning.
MP	Minister for Planning
MUAP	Minister for Urban Affairs and Planning, now the Minister for Planning.
NPWS	National Parks and Wildlife Service, now a part of the DEC
RTA	Roads and Traffic Authority

References to current and former authorities and Ministers

The Department of Planning (DoP) is the successor to the former Department of Infrastructure, Planning and Natural Resources (DIPNR) and the Department of Urban Affairs and Planning (DUAP). The Minister for Planning (MP) is the successor to the former Minister for Infrastructure and Planning and Minister for Urban Affairs and Planning.

The Department of Environment and Conservation (DEC) now incorporates the National Parks and Wildlife Service (NPWS). The Director-General of the DEC is the successor to the former Director-General of the NPWS.

References in documents to the former authorities, Ministers or Director-Generals mean the current authorities, Ministers and Director-Generals.

Document control

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f32b activity staging.doc	Final	AEP	A Bowditch, RTA	28 September 2005

Introduction

1.1 The approved project

On behalf of the Australian Government, the Roads and Traffic Authority of NSW (RTA) proposes to construct a link between the F3 Freeway and Branxton (the F3 to Branxton Link). The F3 to Branxton Link would provide about 39.5 km of new dual carriageways between the F3 Freeway near Seahampton and the New England Highway west of Branxton.

The F3 to Branxton Link is an activity that was assessed and determined under Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (the EP&A Act). It is within the Cessnock, Lake Macquarie, Maitland and Singleton local government areas. The F3 to Branxton Link was described, and its impacts assessed, in an Environmental Impact Statement (EIS) prepared by Connell Wagner (1995).

Concurrence was granted by the then Director-General of the National Parks and Wildlife subject to 15 conditions on 3 October 2001. The then Minister for Urban Affairs and Planning approved the F3 to Branxton Link on 7 November 2001, subject to 129 conditions (the Approved Project). Conditions of Approval and Conditions of Concurrence are presented in Appendix 1 and Appendix 2. On 1 August 2005, the F3 to Branxton Link was declared to be a project under Part 3A of the EP&A Act.

Since late 2001, the RTA has undertaken an extensive review of the EIS concept design prepared by Connell Wagner, on which the Minister's approval is based, to investigate ways to reduce impacts of the Approved Project, as required by Conditions of Approval and Concurrence. The RTA has prepared a detailed concept design that responds to these requirements.

1.2 Need to permit staged construction

Utility adjustments and relocations

The F3 to Branxton Link crosses various utility services:

- High pressure gas services provided by Agility.
- Sewer and water services provided by Hunter Water Corporation.
- Communication services provided by Optus and Telstra.
- Electricity services provided by Energy Australia and Transgrid.

The RTA will need to arrange relocation and/or adjustment of these services along the length of the F3 to Branxton Link. Their relocation and/or adjustment will take considerable time:

- Long lead times are needed to gain approvals, to negotiate cost-sharing arrangements with utility providers, and to order components from Australia and overseas.
- Service adjustment and relocation must coincide with low utility demand.
- Most of the work is not contestable and will need to be prioritised by the service providers with other work programs.

For example, the relocation of the 520 mm diameter high pressure gas main in the Seahampton area requires specialised components that must be made overseas. The work also needs to be scheduled during a low demand period in the warmer months. The work is expected to take up to six months to complete and can only be undertaken by Agility.

The relocation of high voltage overhead electricity services can only be undertaken by Energy Australia and the work must be programmed up to 12 months in advance. The delivery time for tall concrete electricity poles is currently more than 12 months. The work is likely to take up to two years to complete and must be coordinated with other programmed maintenance and amplification projects.

If large or complex utility adjustments and/or relocations occur at the same time as road-related construction, there are likely to be delays to the project's completion and increased disruption to the community. However, the RTA can reduce or avoid these delays if service adjustments and/or relocations are completed before road-related construction starts.

Neither funding for road-related construction, nor a construction start date, has been announced by the Australian Government. Nonetheless, the Australian Government has funded utility adjustments and relocations along the F3 to Branxton Link. The RTA proposes to engage Energy Australia to relocate high voltage lines between Buchanan and Branxton, Agility to adjust or relocate high pressure gas mains at Seahampton and Kurri Kurri, and a private contractor to relocate water and sewer mains along the F3 to Branxton Link during 2005 and 2006.

Other work

The F3 to Branxton Link also crosses disused underground coal mine workings in the Seahampton, Kurri Kurri and Greta areas. The RTA may need to grout shafts and collapse voids close to the surface to stabilise these areas. Stabilisation of part or all of these areas before road-related construction begins would reduce construction risks and delays.

1.3 Conditions that regulate staged construction

Condition of Approval 8 of the Minister's approval states:

At least one month prior to commencement of substantial construction (or within such period as otherwise agreed by the Director-General), the Proponent shall submit for approval of the Director-General a compliance report detailing compliance with all relevant conditions that apply prior to commencement of substantial construction and shall address:

- i the dates of submissions of the various studies and/or requirements of various relevant conditions, and their approval and terms of approval; and*
- ii action taken or proposed to implement the recommendations made in terms of approvals and/or studies.*

The Minister's approval does not define the term "substantial construction" used in Condition of Approval 8. However, the Department of Planning (DoP) now includes a standard glossary definition in its current approvals:

[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.)."

Table 1 shows Conditions of Approval that must be satisfied before either "substantial construction" or "construction" begins.

Table 1 Conditions that must be satisfied before construction¹

Condition of Approval	Requirement
8	Prepare a pre-substantial construction compliance report
15	Advertisements in local newspapers
17	Establish a project internet site
22	Nominate an environmental management representative for approval by the DoP
24, 26	Prepare a Construction Framework EMP for approval by the DoP.
30	Prepare construction method statements for review by the DoP
44	Consult with landowners regarding access during construction
45	Consult with relevant councils regarding traffic management
47	Prepare road dilapidation reports
49	Finalise the compensatory habitat package
59	Collect seeds from local native species
76	Erect noise mitigation measures

¹ On 28 April 2005, the DoP clarified that "staging" in Condition of Approval 2 refers to staged opening to traffic, not staged construction.

Condition of Approval	Requirement
96	Identify measures to protect groundwater
100	Undertake test excavations of Potential Archaeological Deposits
110	Prepare a Cultural Heritage Management Plan
119	Prepare a Construction Safety Plan for approval by the DoP
121	Prepare a Security and Crime Management Strategy for approval by the DoP

The relocation of utility services and stabilisation of former underground mining areas in various locations would require clearing of vegetation both within and outside of the construction footprint of the F3 to Branxton Link². The vegetation that would be cleared includes threatened plant species and Endangered Ecological Communities.

Under the DoP's current definition, work within the Approved Project that has an impact on threatened plant or animal species, or Endangered Ecological Communities, would constitute construction and require the RTA to satisfy the Conditions of Approval shown in Table 1 for all aspects of the Approved Project.

1.4 The proposed modification

The RTA wishes to have the ability to undertake activities such as those presented in Section 1.2 before road-related construction begins without triggering compliance with Conditions of Approval that relate to road construction. The RTA could then prepare documentation relevant to managing the impacts of these activities for review and approval by the DoP.

Therefore, the RTA requests that the Minister modify three aspects of the approval for the F3 to Branxton Link:

- Add a Condition that permits staged construction. The DoP has a standard condition based on Database Condition 7 that would be satisfactory:

"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:

describe the Construction Stages; and

identify how the Conditions relating to Construction will be addressed in each Construction Stage."

² Clearing outside of the Approved Project (taken to mean the road reserve) requires separate assessment and approval by the RTA.

- Define work that does not constitute “construction”. The glossary definition currently used by the DoP would be satisfactory.
- Omit all occurrences of the word “substantial” when used in the context of “construction” in the Conditions of Approval to eliminate inconsistency with the proposed glossary definition.

1.5 Consistency with the Minister’s approval

The F3 to Branxton Link is a declared project approved by the Minister under Part 3A of the EP&A Act. Section 75W of the EP&A Act regulates the modification of a project approved by the Minister. The RTA may modify the approved project, and will not need to obtain the Minister’s modification of an approval, if the project as modified will be consistent with the Minister’s approval.

The proposed modification would result in an additional Condition of Approval and would therefore not be consistent with the Minister’s approval.

1.6 Environmental assessment

The proposed modification is administrative in nature and would have no environmental impacts. However, the proposed modification would ensure that the impacts of undertaking staged construction work are identified and managed in the same way that road-related impacts must be managed under the Minister’s approval.

The proposed modification would have no impact on matters of national environmental significance under the *Environment Protection & Biodiversity Conservation Act 1999*. The RTA would not need to refer the modification to the Australian Government Department of the Environment and Heritage.

1.7 Justification

The Conditions of Approval for the F3 to Branxton Link currently do not permit activities that would have an impact on threatened species or Endangered Ecological Communities within the Approved Project to be undertaken before road-related construction activities without triggering compliance with the Conditions of Approval shown in Table 1. In the absence of the proposed modification, the documentation for these Conditions would need to address road-related activities and impacts.

The proposed modification would permit the RTA to undertake activities such as utility adjustments and/or relocations, or underground mine stabilisation, without the need to address road-related activities and impacts. The documentation would be targeted to managing these impacts. Completion of these activities before road-related construction begins would reduce delays and minimise disruption to the community.

References

Connell Wagner Pty Ltd 1995. *Proposed Highway Link F3 Freeway to Branxton Environmental Impact Statement*. Report dated 1995.

National Parks and Wildlife Service 2001. Director-General's Concurrence Report. Report dated 3 October 2001 containing 15 Conditions of Concurrence in Section 9 of the Report.

NSW Department of Urban Affairs and Planning 2001. *Roads and Traffic Authority Proposed F3 to Branxton Highway Link Director-General's Report Section 115C of the Environmental Planning and Assessment Act 1979*. Report dated November 2001.

NSW Government 2001. *Approval under Section 115B(2) in Relation to the Proposed Highway Link between the F3 and Branxton*. Instrument signed 7 November 2001. Includes Schedule 1 containing 129 Conditions of Approval.

RTA 2001. *Representations Report Proposed Highway Link F3 Freeway to Branxton*. Report in three volumes prepared by RTA Operations dated October 2001.

Appendices

Appendix 1 Minister's Conditions of Approval

Appendix 2 Director-General's Conditions of Concurrence

Appendix 1 Minister's Conditions of Approval

Schedule 1

Conditions of Approval – F3 to Branxton Highway Link

The following acronyms and abbreviations are used in this section:

AFFAR	Additional Flora and Fauna Assessment Report
ARI	Average Recurrence Interval
CLG	Community Liaison Group
CMS	Construction Method Statement
Department, the	Department of Urban Affairs and Planning
Director-General, the	Director-General of the Department of Urban Affairs and Planning or delegate
DLWC	Department of Land and Water Conservation
DUAP	Department of Urban Affairs and Planning
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMR	Environmental Management Representative
ENCM	Environmental Noise Control Manual
<i>EP& A Act</i>	<i>Environmental Planning and Assessment Act 1979</i>
EPA	Environment Protection Authority
FIS	Fauna Impact Statement
Minister, the	Minister for Urban Affairs and Planning
NPWS	National Parks and Wildlife Service
NPWS Concurrence	Concurrence given by the Director-General of National Parks and Wildlife under the <i>TSC Act</i>
Proponent	Roads and Traffic Authority
Relevant Councils	Cessnock City Council, Lake Macquarie City Council, Maitland City Council, and Singleton Shire Council
RTA	Roads and Traffic Authority
<i>TSC Act</i>	<i>Threatened Species Conservation Act 1995</i>

General

1. The proposal shall be carried out in accordance with:
 - i. *Proposed Highway Link – F3 Freeway to Branxton, Environmental Impact Statement (EIS)* (Connell Wagner June 1995);
 - ii. *Proposed Highway Link – F3 Freeway to Branxton, Fauna Impact Statement (FIS)* (Connell Wagner January 1997) and accompanying documentation, Flora and Fauna Report (Mount King Ecological Surveys 1995), Fauna Survey Greta Deviation (Connell Wagner 1996) and Herptofauna Survey (Richard Wells 1995);
 - iii. *Additional Flora and Fauna Assessment (AFFA)* (Connell Wagner May 2001) to supplement the original FIS;
 - iv. Representations Report, Volumes 1, 2 and 3 (RTA, October 2001);
 - v. *Supplementary Review of Environmental Factors (SREF) for the Allandale to Illalong Section Comparison of Options* (Connell Wagner August 2000);
 - vi. *Kurri Sand Swamp Woodland Recovery Assessment* (Biosis Research), a report commissioned jointly by the RTA and NPWS in August 2001;
 - vii. *Additional Environmental and Engineering Assessment* (Connell Wagner May 2001); and
 - viii. *Compensatory Habitat Proposal and Candidate Areas – Stage 2 Report* (Connell Wagner September 2001).

2. This approval relates to the construction of the proposal in its entirety¹.
3. Despite the above, in the event of any inconsistency with the proposal as described in the EIS and/or Representations Report, the Conditions of Approval granted by the Minister shall prevail.
4. These conditions do not relieve the Proponent of the obligation to obtain all other approvals and licences from all relevant authorities required under any other Act. Without affecting the generality of the foregoing, the Proponent shall comply with the terms and conditions of such approvals and licences.
5. It shall be the ultimate responsibility of the Proponent to ensure compliance with all conditions of approval granted by the Minister.

Compliance

General

6. The Proponent shall comply with, or ensure compliance with, all requirements of the Director-General in respect of the implementation of any measures arising from the conditions of this approval.
7. The Proponent shall bring to the attention of the Director-General any matter that may require further investigation and the issuing of instructions from the Director-General. The Proponent shall ensure that these instructions are implemented to the satisfaction of the Director-General within such time that the Director-General may specify.

Pre-Construction Compliance Report

8. At least one month prior to commencement of substantial construction (or within such period as otherwise agreed by the Director-General), the Proponent shall submit for approval of the Director-General a compliance report detailing compliance with all relevant conditions that apply prior to commencement of substantial construction and shall address:
 - i. the dates of submissions of the various studies and/or requirements of various relevant conditions, and their approval and terms of approval; and
 - ii. action taken or proposed to implement the recommendations made in terms of approvals and/or studies.

Pre-Operation Compliance Report

9. At least one month prior to commissioning of the proposal (or discrete sections of the proposal as agreed by the Director-General), the Proponent shall submit for approval of the Director-General a compliance report detailing compliance with all relevant conditions that apply prior to commencement of operation and shall address:
 - i. the dates of submissions of the various studies and/or requirements of various relevant conditions, and their approval and terms of approval; and
 - ii. action taken or proposed to implement the recommendations made in terms of approvals and/or studies.

The Period of one month referred to in this condition may be altered as agreed by the Director-General.

Dispute Resolution

¹ The environmental evaluation of staging the proposal has not been undertaken, and therefore any staging will require separate assessment in accordance with the *EP&A Act*.

10. The Proponent shall endeavour, as far as possible, to resolve any dispute with relevant public authorities arising out of the implementation of the conditions of this approval. Should this not be possible, the matter shall be referred to the Director-General and, if the matter cannot be resolved, then to the Minister for resolution. The Minister's determination of the disagreement shall be final and binding on all parties.

Contact Telephone Number

11. Prior to the commencement of construction, the Proponent shall institute, publicise and list with a telephone company a 24 hour toll-free 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.

Complaints Register

12. The Proponent shall record details of all complaints received during construction and ensure that an initial response to the complaint is provided within 24 hours and a detailed response within 10 days. Information on all complaints received shall be made available on request to the Director-General and all relevant government agencies.
13. The Proponent shall nominate an appropriate person(s) to receive, log, track and respond to complaints within the specified timeframe. The name and contact details of this person(s) shall be provided to the relevant Council(s) and the Director-General upon appointment or upon any changes to that appointment.

Project Commencement

14. The Proponent shall notify the Director-General and all relevant authorities in writing of the project commencement both in terms of construction and operation (ie commissioning).

Advertisement of Activities

15. Prior to the commencement of construction and then at three-monthly intervals, the Proponent shall 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.
16. The Proponent shall ensure that the local community and businesses are kept informed (by appropriate means such as: local newsletters; leaflets; newspaper advertisements; and community noticeboards; 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, prior to such works being undertaken.
17. The Proponent shall establish a project internet site prior to the commencement of construction and maintain the internet site until 6 months after commencement of operation of the project. The internet site shall contain monthly updates of work progress and consultation activities, including but not be limited to:
 - i. a description of relevant approval authorities and their areas of responsibility;
 - ii. a list of environmental management reports that are publicly available and the executive summaries of those reports;
 - iii. minutes of community liaison group meetings;
 - iv. newsletters every three months;
 - v. contact names and phone numbers of the project communications staff; and
 - vi. 24 hour toll-free complaints contact telephone number.

Updates of work progress and construction activities shall be provided more frequently where significant changes in the noise impacts are expected.

Community Liaison Group

18. The Proponent shall establish a Community Liaison Group (CLG), consistent with the *Guidelines for the Establishment of Community Liaison Group* (see Attachment 1) and shall:
- i. ensure that the first meeting is held prior to submission of the Construction Framework Environmental Management Plan;
 - ii. nominate a chair to be approved by the Director-General;
 - iii. allow the Group to make comments and recommendations about the implementation of the development and environmental management plans, monitor compliance with conditions of this approval and other matters relevant to the operation of the development during the term of the consent;
 - iv. ensure that the Group has access to the necessary plans and information for such purposes; and provide appropriate facilities and information to assist the Group in carrying out its functions;
 - v. consider the recommendations and comments of the Groups and provide a response to the Groups and Director-General;
 - vi. ensure that the Group includes the Environmental Management Representative, representatives from the Proponent, the contractor/s, relevant local community and business groups including relevant Councils unless otherwise agreed by the Director-General; and
 - vii. bear all costs associated with the establishment and ongoing function of the Groups.

Environmental Management

Environmental Management Representative

19. The Proponent shall employ a Environmental Management Representative (EMR) who demonstrates compliance with AS/NZS ISO 14012:1996 *Guidelines for Environmental Auditing : Qualification criteria for environmental auditors*.
20. The EMR shall be available during construction activity at the site and be present on-site during any critical construction activities as defined in the Construction Framework Environmental Management Plan (EMP).
21. The EMR shall:
- i. have responsibility for considering and advising on matters specified in the conditions of approval and compliance with such;
 - ii. review and approve induction and training program for all persons involved in the construction activities and monitor implementation;
 - iii. periodically audit the environmental activities to evaluate the implementation, effectiveness and level of compliance of on-site construction activities with the EMP and associated plans and procedures, including carrying out site inspections at least fortnightly;
 - iv. record and provide a written report of non-conformances with the EMP and require mitigation measures to avoid or minimise any adverse impacts on the environment or report required changes to the EMP;
 - v. direct the contractor to stop work immediately where considered necessary, if in the view of the EMR an unacceptable impact on the environment is likely to occur, or require other reasonable steps to be taken to avoid or minimise any adverse impacts;
 - vi. review corrective and preventative actions to ensure the implementation of recommendations made from the audits and site inspections;
 - vii. report monthly;
 - viii. review and approve minor revisions to the Construction Framework EMP and Sub Plans;

- ix. provide information for community consultation, liaison with regulators, and respond to customer environmental complaints as required;
 - x. provide reports to DUAP on matters relevant to the carrying out of the EMR role as necessary including notifying DUAP of any stop work notices; and
 - xi. certify the Construction Framework EMP, Sub Plans, and the Operational EMP in accordance with Conditions of Approval Nos. 25, 28 and 34.
22. The EMR shall be approved by the Director-General prior to the commencement of construction.

Environmental Management System

23. The Proponent shall ensure the appointment of construction and/or operation head contractors that have an Environmental Management System prepared in accordance with the AS/NZS ISO 14000 series or BS7750-1994 certified by an accredited certifier and/or have a proven environmental management performance record.

Construction Framework Environmental Management Plan

24. Prior to the commencement of construction, a Construction Framework Environmental Management Plan (EMP) shall be prepared, following consultation with the NPWS, EPA, DLWC, NSW Fisheries, relevant Councils, and all relevant utility/service providers. The Construction Framework EMP shall be prepared in accordance with the conditions of this approval, all relevant Acts and Regulations and accepted best practice management Sub Plans.
25. The Construction Framework EMP shall 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.
26. The Construction Framework EMP shall be approved by the Director-General prior to the commencement of substantial construction.
27. The Construction Framework EMP shall:
- i. reference and propose timeframes for all the Sub Plans required under this Approval;
 - ii. identify the role of the EMR;
 - iii. provide details of the community consultation process;
 - iv. define the role, responsibility, authority, accountability and reporting of personnel relevant to compliance with the Construction Framework EMP;
 - v. include a matrix of Construction Method Statements (CMS) required to construct the project, including an assessment of the predicted level of risk and potential level of public interest posed by each CMS and indicative timeframes for completion; and,
 - vi. propose a response time-frame for all CMS to be approved by the Director-General.
28. All Sub Plans require the approval of the Director-General following certification by the EMR.
29. The Construction Framework EMP shall be made publicly available after approval by the Director-General.

Construction Method Statements

30. The Proponent shall prepare in consultation with the relevant government agencies and the CLG, Construction Method Statements (CMS) for all construction methods and/or major construction work sites to be utilised during construction in accordance with the Construction Framework EMP required by Condition 24. The Director-General shall nominate the CMSs that will require approval by the Director-General. Those CMSs not requiring the approval of the Director-General shall require the certification of the EMR as being in accordance with the Conditions of Approval and all undertakings

made in the EIS and Representations Report. Any CMS to be approved by the Director-General shall be submitted to the Department following certification by the EMR no less than one (1) month prior to the proposed commencement of the relevant construction activities.

Each CMS shall include, but not be limited to:

- i. construction activities and processes associated with the relevant construction site(s), including staging and timing of the proposed works;
- ii. specific hours of operation for all key elements including off-site movements;
- iii. cover specific environmental management objectives and strategies for the environmental system elements and include, but not be limited to: noise and vibration; air quality; water quality; erosion and sedimentation; access and traffic; property acquisition and/or adjustments; heritage and archaeology; flora and fauna, groundwater; acid sulfate soils, spoil stockpiling and disposal; waste/resource management; weed management; flooding and stormwater control; geotechnical issues; visual screening, landscaping and rehabilitation; hazards and risks; energy use, resource use and recycling; and utilities; and
- iv. address, but not be limited to:
 - a. identification of the statutory and other obligations which the Proponent is required to fulfil during project construction, including all approvals and consultations/agreements required from other authorities and stakeholders, and key legislation and policies which control the Proponent's construction of the project;
 - b. measures to avoid and/or control the occurrence of environmental impacts;
 - c. measures (where practicable and cost effective) to provide positive environmental offsets to unavoidable environmental impacts;
 - d. definition of the role, responsibility, authority, accountability and reporting of personnel relevant to compliance with the CMS;
 - e. site specific environmental management techniques and processes for all construction processes which are important for the quality of the environment in respect of permanent and/or temporary works;
 - f. site specific monitoring, inspection and test plans for all activities and environmental qualities which are important to the environmental management of the project, including performance criteria, tests, and protocols (eg. frequency and location);
 - g. locational details of important elements such as temporary noise barriers; portable offices and amenities; truck, plant and materials storage; access locations; provision of site hoardings etc;
 - h. environmental management instructions for all complex environmental control processes which do not follow common practice or where the absence of such instructions could be potentially detrimental to the environment;
 - i. steps the Proponent intends to take to ensure that all Plans and Sub Plans are being complied with;
 - j. consultation requirements with relevant government agencies; and,
 - k. community consultation and notification strategy (including local community, businesses, relevant government agencies, and all relevant Councils), and complaint handling procedures.

Specific requirements of the main environmental system elements referred to in (iii) shall be as required under the conditions of this approval and/or as required under any licence or approval. All CMS shall be made publicly available.

Environmental Monitoring Construction

31. The Proponent shall submit to the Director-General reports in respect of the environmental performance of the construction works and compliance with the Construction Framework EMP, all relevant CMSs and any other relevant conditions of this approval. The reports shall be prepared six months after the start of substantial construction and thereafter at six monthly intervals or at other such periods as requested by the Director-General to ensure adequate environmental performance

over the duration of the construction works. The report(s) shall include, but not be limited to, information on:

- i. applications for consents, licences and approvals, and responses from relevant authorities;
- ii. implementation and effectiveness of environmental controls and conditions relating to the work undertaken;
- iii. identification of construction impact predictions made in the EIS and any supplementary studies and details of the extent to which actual impacts reflected the predictions;
- iv. details and analysis of results of environmental monitoring;
- v. number and details of any complaints, including summary of main areas of complaint, action taken, response given and intended strategies to reduce complaints of a similar nature; and
- vi. any other matter relating to the compliance by the Proponent with the conditions of this approval or as requested by the Director-General.

The report(s) shall be provided to the EPA, DLWC, NPWS, NSW Fisheries, and relevant Councils, and any other relevant government agency nominated by the Director-General. The report(s) shall also be made publicly available.

32. The Proponent shall ensure that it has an internal audit system and that internal audits are undertaken and certified by the EMR every three (3) months to ensure compliance with the EMP, the conditions of approval and all other relevant licences and approvals. Each audit must be completed within 6 weeks of the end of the 3 month period and be made available to the Director-General upon request.

Operational Environmental Management Plan

33. An Operational Environmental Management Plan shall be prepared prior to the commencement of operation. The Operational EMP shall be prepared in consultation with the EPA, DLWC, NPWS, relevant Councils, and any other relevant government agency nominated by the Director-General. The Operational EMP shall be prepared in accordance with the conditions of this approval, all relevant Acts and Regulations and accepted best practice management procedures.
34. The Operational EMP shall be certified as being in accordance with the conditions of approval by the EMR.
35. The Operational EMP, as certified by the EMR, shall be approved by the Director-General prior to commissioning.
36. The Operational EMP shall include but not be limited to:
 - i. identification of the statutory and other obligations which the Proponent is required to fulfil, including all licences/approvals and consultations/agreements required from authorities and other stakeholders, and key legislation and policies which control the Proponent's operation of the project;
 - ii. identification of environmental performance criteria;
 - iii. a description of the sampling strategies and monitoring protocols (eg. specific monitoring requirements, and sampling frequency and locations, including any requirements of the EPA, NPWS, and DLWC) proposed to be used to test the environmental performance criteria.
 - iv. steps the Proponent intends to take to ensure compliance with all plans and procedures;
 - v. description of the consultation requirements/arrangements with relevant government agencies, the local community, and relevant Councils including complaints handling procedures; and
 - vi. management strategies for the environmental system elements including but not limited to: noise; water; air quality; erosion and sedimentation; access and traffic; groundwater; waste/resource management/removal/disposal; flora and fauna; hydrology and flooding; visual screening, landscaping and rehabilitation; and hazards and risks.

Specific requirements for some of the main environmental system elements referred to in Condition of Approval No. 36 (vi) shall be as detailed under the conditions of this approval and/or as required under any licence or approval.

37. The Operational EMP shall be made publicly available after approval by the Director-General.
38. All sampling strategies and protocols undertaken as part of the Operational EMP shall include a quality assurance/quality control plan and shall be approved by the relevant regulatory agencies to ensure the effectiveness and quality of the monitoring program. Only National Association of Testing Authorities accredited laboratories can be used for laboratory analysis.

Environmental Impact Audit Report

39. An Environmental Impact Audit Report shall be prepared:
 - i. by an independent person at the Proponent's expense;
 - ii. submitted to the Director-General, the EPA, NPWS, and, upon request by the Director-General, to any other relevant government authority;
 - iii. within 2 months after the first 12 months of operation of the proposal and thereafter at 2 and 5 years after the start of operation, or at any time as requested by the Director-General within the first 10 years of operation.
40. The Environmental Impact Audit Report shall:
 - i. assess the key impact predictions made in the EIS and any supplementary studies including, but not limited to, noise impacts at affected locations along the corridor, traffic projections both for the new road and roads where redistribution of traffic was assessed, and impacts on flora and fauna;
 - ii. detail the extent to which actual impacts reflect the predictions;
 - iii. provide details on actual versus predicted impact for all key impact issues identified in the EIS or as updated in the Representations Report;
 - iv. assess the suitability of implemented mitigation measures and safeguards, and recommend any additional measures that are required to be taken as a result of i to iii above;
 - v. discuss results of consultation with the local community in terms of feedback/complaints on the construction and operation phases of the project and any issues of concern raised; and
 - vi. assess compliance with the Construction Framework EMP.
41. The Proponent shall comply with all reasonable requirements of the Director-General, EPA, NPWS, and other relevant authorities with respect to any reasonable measure arising from, or recommendations in, the report.
42. The Report shall be made publicly available.

Property and Land Use

43. The Proponent shall ensure that existing access to properties fronting the highway are maintained throughout the construction period. The Proponent shall ensure that any access way affected by the proposal is reinstated to an equivalent standard or that adequate compensation is negotiated with the relevant landowner(s).
44. The Proponent shall consult on a regular basis with all affected landowners regarding any practical and cost effective measures to minimise impacts which may be implemented prior to the commencement of construction or within such time as agreed with the relevant landowner.

Traffic and Access

45. The Proponent shall consult with all relevant Councils to develop management techniques for construction traffic on local roads, prior to commencement of construction.
46. The Proponent shall monitor the use of local roads by construction heavy vehicle traffic in consultation with all relevant Councils and shall consult with the Councils to develop measures to minimise and/or restrict the use of local roads by heavy vehicle traffic if so required.
47. A road dilapidation report shall be prepared for all non-arterial roads likely to be used by construction traffic prior to commencement of construction and after construction is complete. A copy of the report shall be provided to all relevant Councils. Any damage resulting from the construction of the project, aside from that resulting from normal wear and tear, shall be repaired at the cost of the Proponent.

Note: Nothing in Condition of Approval No. 45 or Condition of Approval No. 47 shall be taken as restricting the Proponent from negotiating an alternative payment for damage to local roads with all relevant Councils, subject to the agreement of the Council.

Flora and Fauna

NPWS Concurrence Report

48. The Proponent shall implement the conditions contained in Section 9 of the 'Concurrence Report for the Proposed F3 to Branxton Highway Link' (NPWS 2001).

Prior to Construction

49. The comprehensive compensation habitat package required by NPWS's Concurrence Condition No. 13 shall be finalised prior to commencement of construction, and be prepared to the satisfaction of the Director-General and the Director-General of National Parks and Wildlife.
50. The Proponent shall achieve at least a 2:1 ratio² in its compensatory habitat package for the endangered Kurri Sand Swamp Woodland and at least a 2:1 ratio for all other vegetated areas affected by clearing and edge effects³.
51. The Proponent shall prepare, in consultation with the Department and NPWS, a detailed Flora and Fauna Management Sub Plan. The Sub Plan shall be prepared prior to construction and shall be consistent with NPWS Concurrence Condition No. 15 regarding EMPs. The Sub Plan shall include but not be limited to:
 - i. all those matters identified in the NPWS's Concurrence Condition No. 15;
 - ii. strategies for seed collection and revegetation;
 - iii. a fauna risk assessment to identify:
 - a. which fauna species need to be targeted for measures to ensure safe transverse crossing of the roadway;
 - b. mitigation measures to be implemented;
 - c. the likely effectiveness of proposed mitigation measures ie design and location; and
 - d. further mitigation strategies.
 - iv. identification of measures proposed to be taken to protect vegetated areas outside the direct impact zone, control impacts due to spillage, spread of debris and refuse, and movement and storage of materials and equipment.

² 2 hectares of Kurri Sand Swamp Woodland re-created or reserved for every hectare directly and indirectly impacted (ie. cleared or degraded by edge effects respectively) as a result of the proposal.

³ The allowance for edge effects shall be calculated in accordance with Bali, R (2000) Discussion paper – *Compensating for Edge Effects* prepared by Biosis Research for the RTA.

52. The Proponent shall update the *Additional Flora and Fauna Assessment Report (AFFAR)* (Connell Wagner, May 2001) prior to construction and to the satisfaction of the Director-General and the NPWS⁴. The updated report shall:
- document additional surveys undertaken for previously identified (ie. the FIS and the *AFFAR*) and any newly listed threatened species, populations and ecological communities;
 - identify which of these listings and their habitat are likely to be affected by the proposal where this has not already been described; and
 - provide details of appropriate mitigation measures to be implemented.
53. In addressing NPWS's Condition of Concurrence No. 3, the Proponent shall employ an independent road design specialist and independent qualified ecologist to review and report on the detailed design of the proposal prior to construction. The aim of the review is to establish whether additional measures can be incorporated in the detailed design, to reduce the direct and/or indirect impacts on threatened species, populations and ecological communities and their habitats, and to improve the effectiveness of proposed mitigation measures. The review and report shall include, but not be limited to:
- an investigation to demonstrate that the proposed multi-function fauna overpass⁵ is an effective and appropriate design; and
 - identification of measures to further reduce the amount of clearing of native vegetation.
- The Proponent shall submit the report to the NPWS and the Director-General, and comply with all reasonable requirements of the Director-General and the NPWS and other relevant authorities with respect to any reasonable measure arising from, or recommendations in, the report.
54. The Proponent shall provide a dedicated fauna overpass⁶ unless the review and report referred to in Condition of Approval No. 53 identifies:
- that it is not possible to do this; or
 - the proposed multi-function fauna overpass is an effective and appropriate design.
55. The Proponent shall provide opportunities to facilitate the safe transverse crossing of Squirrel Gliders in the area of Allandale where a Squirrel Glider has been recorded.
56. Additional opportunities for the safe transverse crossing for Squirrel Gliders shall be provided at any new locations where Squirrel Gliders are found (see NPWS Concurrence Condition 6 and Condition of Approval No. 52) unless it can be demonstrated, to the satisfaction of the Director-General and NPWS, that these cannot be achieved.
57. The Proponent shall, prior to construction, employ a qualified ecologist approved by the NPWS, to identify and clearly mark all remnant patches of native vegetation, threatened flora species and communities adjacent to the areas proposed to be cleared in order to ensure minimal disturbance to native vegetation, and undertake pre-clearance surveys to search, trap, and release fauna that may be impacted by construction activities. In addition, the qualified ecologist shall be responsible for ensuring NPWS's Conditions of Concurrence Nos. 8 & 9 are met.
58. Any tree hollow roosts for bats in the areas to be cleared are to be relocated. If this is not possible, then an artificial bat roost shall be provided in adjacent vegetation prior to clearing.

⁴ This report accompanied the Representations Report and addressed threatened species, populations and ecological communities listed on the *TSC Act* since the preparation of the FIS.

⁵ Currently proposed to include a corridor for a gas pipeline, extension of Stockrington Road over the proposal, and a fauna overpass.

⁶ Dedicated for the exclusive use of fauna crossing over the highway and not incorporating any other uses such as road access, or utility corridors (except where these do not require cleared easements).

59. Where possible, seeds of locally native species shall be collected prior to the commencement of construction to provide seed stock for revegetation purposes to the satisfaction of a qualified bushland regeneration officer acceptable to the NPWS. Topsoil and leaf mulch shall be stripped and stored for placement back in the vegetation zone from where it was removed subject to Condition of Approval No. 63.

Construction

60. The Proponent must not clear more than 168 hectares of native vegetation subject to any changes identified and accepted in Condition of Approval No. 53.
61. The Proponent must not clear more than 33.7 ha of Kurri Sand Swamp Woodland subject to any changes identified and accepted in Condition of Approval No. 53.

Revegetation and Rehabilitation

62. The Proponent shall monitor and maintain all proposed vegetation rehabilitation for a minimum of three years and undertake measures to control weeds.
63. Weed infested topsoil, as identified by a qualified ecologist, shall not be used in the rehabilitation works unless it is sterilised or treated in an appropriate manner.
64. Cleared vegetation must be reused or recycled to the greatest extent practicable. Reuse option including removing millable logs, recovering fence posts, mulching and chipping unusable vegetation waste for on-site use. All reasonable measures to use any surplus vegetation shall be undertaken including donation to community groups, distribution to the local community, etc.
65. If, during the course of construction, the Proponent becomes aware of the presence of any threatened species which are likely to be significantly affected and are not recognised in the flora and fauna studies presented in the EIS, FIS or Representations Report, then the Proponent shall immediately advise the Director-General of National Parks and Wildlife. No activity which places any of these species at risk shall be undertaken until advice has been received from the NPWS. All recommendations by the NPWS shall be complied with prior to any works likely to affect any threatened species.
66. All mitigation measures generally identified in Sections 2.4.3 through 2.4.14 of the Representations Report should be implemented.

Monitoring

67. The Proponent shall, as part of the Operational EMP referred to in Condition of Approval No. 33, prepare a fauna monitoring program to assess the effectiveness of all road crossing ameliorative measures. The monitoring program shall be carried out for a minimum of three years after operation and include a report on an assessment of the following matters:
- i. the levels of fauna underpass use by native fauna;
 - ii. the extent of road kills and rehabilitation of injured fauna;
 - iii. the adequacy of exclusion fencing and glider crossing points, with particular reference to design and placement and need for additional measures; and
 - iv. degree and nature of wildlife utilisation of any contiguous roadside wildlife corridors established.

The Proponent shall submit the report to the NPWS and the Director-General, and comply with all reasonable requirements of the Director-General and the NPWS with respect to any reasonable measure arising from, or recommendations in, the report.

Bridge Design

68. The Proponent shall consult NSW Fisheries in relation to: the construction of temporary platforms for the construction of the piles and piers in the creeks; and the design and timing of bridge construction.
69. The Proponent shall ensure that no earthen platforms are constructed or fill material placed in the creeks unless prior approval is granted by NSW Fisheries and the Director-General.

Noise and Vibration

70. The Proponent shall where reasonable and feasible apply best practice innovative noise mitigation measures including:
 - i. maximising the offset distance between noisy plant items and nearby noise sensitive receivers;
 - ii. avoiding noisy plant working simultaneously close together and adjacent to sensitive receivers;
 - iii. minimising consecutive night time works in the same locality;
 - iv. orienting equipment away from sensitive areas;
 - v. carrying out loading and unloading away from noise sensitive areas; and
 - vi. selecting site access points and roads as far as possible away from sensitive receivers.

Construction Noise and Vibration Management Sub Plan

71. A detailed Construction Noise and Vibration Management Sub Plan (NVMSP Construction) shall be prepared. The Sub Plan shall include, but not be limited to:
 - i. identification of all potentially affected noise sensitive receivers;
 - ii. an assessment of current background noise levels at the identified noise sensitive receivers;
 - iii. identification of appropriate construction noise objectives;
 - iv. identification of all significant noise and vibration generating activities, duration and times of operation;
 - v. potential noise and vibration impacts from each activity and any likely cumulative noise impacts from concurrent activities;
 - vi. details of all reasonable and feasible noise mitigation measures that will be implemented to achieve the adopted construction noise objectives;
 - vii. the need for respite periods;
 - viii. construction timetabling to minimise noise impacts;
 - ix. noise and vibration monitoring, reporting and response procedures;
 - x. complaints handling and monitoring system;
 - xi. a pro-active and reactive strategy for dealing with complaints;
 - xii. site contact person to follow-up complaints;
 - xiii. procedures for notifying residents of construction activities likely to affect their noise and vibration amenity;
 - xiv. contingency plans to be implemented in the event of non-compliances and/or noise complaints.

The plan shall be submitted to the EPA when applying for an Environment Protection Licence for the construction phase.

Construction Hours

72. The Proponent shall ensure that rock breaking, rock hammering, sheet piling and any other activities which result in impulsive tonal noise generation are only scheduled between the following hours unless otherwise as agreed by the EPA through the Construction Noise and Vibration Management Sub Plan Process:
 - i. 8 am to 12 pm, Monday to Saturday; and

- ii. 2 pm to 5 pm Monday to Friday.

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 shall be scheduled before activities re-commence.

- 73. All construction activities, including entry and departure of heavy vehicles are to be restricted to 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.
- 74. Works outside these hours that may be permitted include:
 - i. any works which do not cause noise emissions to be audible at any nearby residential property;
 - ii. the delivery of materials which is required outside these hours as requested by police or other authorities for safety reasons;
 - iii. dust suppression works;
 - iv. emergency work to avoid the loss of lives, property and/or to prevent environmental harm; and
 - v. any other work as agreed through negotiations between the Proponent and potentially affected noise receivers or as otherwise agreed by the EPA through the NVMS (Construction) process.

Construction Noise Criteria

- 75. Construction noise levels shall be monitored to verify compliance with the requirements specified in the NVMS (Construction). The Proponent shall implement any additional mitigation measures as required by the Director-General following consultation with the EPA should monitoring indicate exceedance.
- 76. In order to minimise noise impacts during construction, the Proponent shall erect noise mitigation measures prior to the commencement of construction.

Vibration and Blasting

- 77. Should blasting be required, the Proponent shall prepare a Blast Management Strategy in consultation with the EPA and incorporate this Strategy into the Construction Noise and Vibration Management Sub Plan. The Strategy shall be prepared with an aim to demonstrate that all blasting and associated activities will be undertaken in a manner that will not generate unacceptable noise and vibration impacts at residences or other noise sensitive receivers. Issues to be considered in the Strategy shall include, but not necessarily be limited to:
 - i. details of blasting to be performed, including location, method and justification of the need to blast;
 - ii. identification of any potentially affected noise and vibration sensitive sites including heritage buildings and utilities;
 - iii. establishment of appropriate criteria for blast overpressure and ground vibration levels at each category of noise sensitive site;
 - iv. determination of potential noise and vibration impacts from blasting and appropriate best management practices;
 - v. community consultation procedures.

Reference shall be made to the Guideline entitled "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).

The plan shall be submitted to EPA when applying for an Environment Protection Licence for the construction phase.

78. Blasts shall be limited to one single detonation in any one day, unless otherwise agreed by the EPA through the Construction Noise and Vibration Management Sub Plan Process.
79. The Proponent shall ensure that vibration resulting from construction of the project is limited to:
 - i. German Standard DIN 4150 and British Standard BS 7385: Part 2 – 1993 for structural damage vibration; and
 - ii. British Standard BS 6472 and Australian Standard AS 2670 for human exposure to vibration.Where there is an inconsistency between these standards, the more stringent standard shall apply.
80. Dilapidation surveys shall be undertaken for all buildings located within 200 metres of the road construction area prior to the commencement of blasting or major vibration inducing construction activities. The Proponent shall be responsible for rectifying any damages occurring as a result of the construction with the cost to be borne by the Proponent.
81. For any section of the project where blasting is proposed, the Proponent shall undertake a series of initial trials at reduced scale prior to commencement of the proposed blasting to determine site-specific blast response characteristics and to define allowable blast sizes to meet the Guideline entitled *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).
82. The Proponent shall provide a minimum of 48 hours notice to occupants located within 500 metres of any blasting and provide a schedule of blasting times to affected residences.
83. Blasting shall only be undertaken between the hours of 10:00 am and 3 pm (Monday to Friday) and 10:00 am to 1:00 pm (Saturday).

Operational Noise Management Sub Plan

84. A detailed Operational Noise Management Sub Plan (NMSP Operation) shall be prepared in consultation with the EPA. The NMSP Operation shall include, but not be limited to:
 - i. details of noise mitigation measures to be implemented for the operation stage sufficient to address the technical requirements of the NSW Government's guideline – *Environmental Criteria for Road Traffic Noise*;
 - ii. location, type and timing of erection of any permanent noise barriers;
 - iii. specific physical and managerial measures for controlling noise and vibration;
 - iv. predicted road traffic noise levels immediately after opening and with all proposed noise mitigation measures in place, at the noise sensitive receiver locations identified in the Representations Report;
 - v. a methodology and procedures for assessing compliance with the predicted road traffic noise levels immediately after opening; and
 - vi. the urban design issues relating to noise control measures.

With respect to Condition of Approval No. 84 (iii) above, the Proponent shall consider the use of a range of structural and non-structural measures including speed controls and the use of open graded asphalt.

Operation Noise Management

85. Monitoring of operational noise shall be undertaken in accordance with the NMSP (Operation). The Proponent shall, in consultation with the EPA, assess the adequacy of the traffic noise mitigation measures after one year of operation with regard to the EPA guideline *Environmental Criteria for Road Traffic Noise*. Should the assessment indicate a clear trend in traffic noise levels which are higher than the predictions made and exceed EPA noise criteria, the Proponent shall consider further mitigation measures including but not limited to inclusion of noise barriers, insulation of buildings, and total acquisition of properties.
86. Notwithstanding the above, the Proponent shall, as a minimum, comply with the noise assessment criteria described in Section 9 of the *Additional Environmental and Engineering Assessment* report (Connell Wagner, May 2001).

Soil and Water Management

Soil and Water Management Sub Plan

87. A detailed Soil and Water Management Sub Plan shall be prepared in consultation with the DLWC, NSW Fisheries, and relevant Councils. The Sub Plan shall be prepared in accordance with the Department of Housing's guideline *Managing Urban Stormwater - Soils and Construction* and where appropriate, DLWC's *Constructed Wetlands Manual*. The Sub Plan shall be prepared prior to construction or operation. The section of the Sub Plan dealing with construction impacts shall be submitted to the EPA when applying for an Environment Protection Licence for the construction phase.
88. The Soil and Water Management Sub Plan shall contain, but not be limited to:
- i. management of stormwater from the development on the quality of surface and groundwater;
 - ii. details of short and long term measures to be employed to minimise soil erosion and the discharge of sediment to land and/or waters including the locations of suitably sized sedimentation basins;
 - iii. management of the impacts of the development on watercourse crossings including Wallis/Surveyors Creeks, South Maitland Railway/Swamp Creek, Bishops Creek, and Black Creek;
 - iv. management of the impacts of Wallis/Surveyors Creeks, South Maitland Railway/Swamp Creek, Bishops Creek, and Black Creek on the development;
 - v. identification of all potential sources of water pollution and a detailed description of the remedial action to be taken or management systems to be implemented to minimise discharges of these pollutants from all sources within the subject site;
 - vi. detailed description of water quality monitoring to be undertaken during the pre-construction, construction and operation stages of the proposal including identification of locations where monitoring would be carried out;
 - vii. contingency plans for fuel and other spills; and
 - viii. a program for reporting on the effectiveness of the sediment and erosion control system against performance goals.

Erosion and Sediment Control Works

89. The Soil and Water Management Sub Plan shall also incorporate detailed erosion and sedimentation controls including a strategy to manage the extent of exposed ground surface during construction and progressive site rehabilitation requirements (in accordance with Conditions of Approval Nos. 97 and 114). The Sub Plan shall be prepared to the satisfaction of DLWC and in consultation with the EPA and NSW Fisheries and sufficient to address the technical requirements for obtaining relevant EPA approvals/licences.
90. The DLWC, or other appropriately qualified soil conservationist, shall be consulted on a regular basis to undertake inspections of temporary and permanent erosion and sedimentation control devices to

ensure that the most appropriate controls are being implemented and that they are being maintained in an efficient condition at all times and meet the requirements of any relevant approval/licence condition(s).

91. All water collected during construction which is likely to be contaminated, shall be tested, treated, handled and disposed of so that it does not pollute waters.
92. Sediment basin(s) must be designed (stability, location, type, and size), constructed, operated and maintained in accordance with the guideline *Managing Urban Stormwater - Soils and Construction*, 3rd edition, 1998, or its latest edition, produced by the NSW Department of Housing unless otherwise approved by the EPA.

Hydrology and Flooding

93. The Soil and Water Management Sub Plan shall identify mitigation measures proposed to be taken to address any:
 - i. afflux impacts from the roadway or structures associated with the proposal eg. the proposed Wallis/Surveyors Creek crossing and impacts upstream in the Buchanan area; and
 - ii. adverse impacts from the proposal as a result of losses to the Hunter River floodplain storage areas for flood events above and including the 1% Annual Exceedence Probability Event eg. the Wentworth and Dagworth Swamps;

Operation Stage Control Measures

94. All stormwater drainage, erosion, sedimentation and water pollution control systems and facilities of the proposal shall be located, designed, constructed operated and maintained to meet the requirements of the relevant authorities including the EPA and the DLWC. All facilities including wetland filters, grass filter strips, gross pollutant traps and sedimentation basins shall be inspected regularly and maintained in a functional condition for the life of the project. Construction stage water quality structures shall be maintained for a minimum of six months after commissioning of the proposal or until revegetation has provided groundcover to at least 70% of the exposed surface.
95. The Proponent shall provide appropriate detention systems for containment of spills and materials arising from accidents that are consistent with the Proponent's *Code of Practice for Water Management – Road Development and Management* in consultation with the EPA.

Groundwater

96. The Proponent shall identify the most appropriate measures to safeguard and/or mitigate impacts on the groundwater, or impacts arising from any groundwater dewatering operations, in consultation with the DLWC, prior to the commencement of construction. Measures may include:
 - i. evaluation of aquifer characteristics including conductivity and salinity;
 - ii. identification of suitable sites for the disposal of saline groundwater from dewatering activities; and
 - iii. installation of monitoring bores.

Landscaping

97. The Proponent shall prepare a detailed Landscape Sub Plan in consultation with the relevant Councils, all affected landowners and the Community Liaison Group. The Sub Plan shall include, but not be limited to the following:
 - i. sections and perspective sketches;
 - ii. methodology of landscaping works;
 - iii. location and identification of existing and proposed vegetation including use of indigenous species;

- iv. location of mounds, bunds, structures or other proposed treatments, finishes of exposed surfaces (including paved areas), measures to preserve bio-diversity, colours and specifications, staging of works, methodology of landscaping;
- v. progressive landscape strategies incorporating other environmental controls such as erosion and sedimentation controls, dust mitigation, drainage, noise mitigation;
- vi. lighting; and
- vii. monitoring and maintenance procedures.

The Proponent shall also include landscape strategies incorporating other environmental controls such as erosion and sedimentation controls, noise mitigation measures, drainage structures and lighting.

- 98. All landscaping works shall be monitored and maintained by a suitably qualified landscape specialist at the Proponent's expense for a period of not less than three years.
- 99. The Proponent shall implement any required remediation measure(s) to maintain landscaping works. Any landscaping within the road reserve shall be maintained by the Proponent for the life of the project.

Heritage and Archaeology

- 100. The Proponent shall, prior to the commencement of construction, undertake a program of test excavations at the recorded sites and the Potential Archaeological Deposits (PADs) identified along the route, and any other additional locations as determined by the NPWS and the Aboriginal community groups (ie. Mindaribba Local Aboriginal Land Council, Awabakal Local Aboriginal Land Council, Wonnarua Nation Aboriginal Corporation and the Lower Hunter Tribal Council) along the highway route in order to identify significant and sensitive sites. This shall include but not be restricted to an investigation of the following for each location:
 - i. the geomorphological context of the landscape being investigated;
 - ii. the landscape history and level of disturbance;
 - iii. the presence of intact archaeological material;
 - iv. the nature of and significance of intact archaeological material to include an assessment of the material recovered and its landscape and geomorphological context; and
 - v. appropriate management options and mitigation measures including requirements for more detailed salvage.
- 101. The Proponent shall prepare a detailed research program, which is to be undertaken 12 months prior to commencement of works, to support the work to be undertaken for the testing referred to in Condition of Approval No. 100 to the satisfaction of the NPWS.
- 102. The Proponent shall undertake a salvage program as required by the NPWS and the local Aboriginal community groups.
- 103. The Proponent shall identify, in consultation with the local Aboriginal community groups and the NPWS, management zones across the proposal for the ongoing management of sites along the route corridor. Each management zone shall:
 - i. incorporate a set of management objectives which is reflective of its relative importance for conserving Aboriginal heritage values identified through the testing process; and
 - ii. strategies for the avoidance of sites and areas of high sensitivity.
- 104. If during the course of construction the Proponent becomes aware of any heritage items or archaeological material, all work likely to affect the site(s) shall cease immediately and the relevant authorities, including NPWS, NSW Heritage Office and the local Aboriginal community groups shall be consulted to determine an appropriate course of action prior to the recommencement of work at

that site. Appropriate supporting documentation would need to accompany any application for required permit/consent(s).

105. The Proponent shall prepare a cultural heritage strategy for the construction works to ensure that:
 - i. all workers are aware of the Aboriginal heritage values within each construction area;
 - ii. areas in sensitive management zones are appropriately fenced to avoid damage, particularly from inadvertent machinery movement; and
 - iii. all works cease immediately upon the discovery of any 'unknown' Aboriginal site and NPWS and relevant local Aboriginal community groups are contacted.
106. The Proponent shall prepare a cultural heritage strategy for management, post construction, to include but not be limited to:
 - i. the introduction of permanent fencing;
 - ii. revegetation of areas of high archaeological significance; and
 - iii. an assessment of the changes in accessibility to sites and strategies to reduce the impact of these changes, prepared in consultation with the local Aboriginal community groups and the NPWS.
107. The Proponent shall fully fund the proposed works and mitigation strategies outlined in the above conditions.
108. Documentation, in the form of Aboriginal Cultural Heritage Assessments, is required from each of the known Aboriginal community groups. The published NPWS Aboriginal Cultural Heritage Standards and Guidelines outlines the critical components for these assessments including the Aboriginal community's understanding of the proposed project and:
 - i. the cultural heritage values they ascribe to the landscape and the significance to the community (sensitivity mapping);
 - ii. the impact to their culture as a result of works associated with the proposal; and
 - iii. management options and recommendations considered necessary by the community to mitigate against impacts or loss.
109. Documentation from local Aboriginal community groups detailing the significance of Sugarloaf Range, their understanding of the implications of the impact of the proposed Highway Link to Branxton and:
 - i. the cultural heritage values they ascribe to the Sugarloaf Range landscape and its significance to the community (sensitivity mapping);
 - ii. the impact to their culture as a result of works associated with the Sugarloaf Range landscape; and
 - iii. management options and recommendations considered necessary by the community to mitigate against impacts or loss.

The above may be included in the Aboriginal Cultural Heritage Assessments or documented separately in the form of a specific report or letter from each of the Aboriginal community groups.
110. Prior to the commencement of substantial construction, the Proponent shall prepare in consultation with the Aboriginal community groups, a Cultural Heritage Plan of Management for approval by the Director-General and in agreement with the Director-General of National Parks and Wildlife. The Plan shall encapsulate strategies, methods and outcomes for Aboriginal cultural heritage values.
111. The Cultural Heritage Plan of Management shall:
 - i. identify the Aboriginal cultural and archaeological variables and criteria;
 - ii. assess those areas already being considered for their compensatory habitat values, to determine their value for Aboriginal cultural heritage;
 - iii. consider the issues raised by the Aboriginal communities during the consultation process; and

- iv. identify areas (other than those identified in (ii) above) for consideration as off-sets, consistent with the outcomes of the Aboriginal Cultural Heritage Plan of Management.
112. The Proponent must notify the Director-General of National Parks and Wildlife in writing of any proposed variations to the alignment, design or construction of the activity not considered in the current proposal. The NPWS must be given the opportunity to inspect the final route and any variations can then only proceed if approval in writing is given by the Director-General of National Parks and Wildlife. The NPWS must be allowed a minimum of fifteen working days to consider any variation and to provide advice on the appropriate measures required to mitigate any impacts.
113. The Proponent shall implement the mitigation measures identified in Section 8.5 of the EIS in order to protect the non-indigenous cultural heritage items potentially affected by the proposal.

Air Quality

Construction Air Quality Sub Plan

114. A specific Construction Air Quality Sub Plan shall be prepared in consultation with the EPA. The Sub Plan shall provide details of all dust control measures to be implemented during the construction stage, sufficient to address the technical requirements for any EPA approvals/licences. The Sub Plan shall include, but not be limited to:
- i. pro-active measures to reduce dust from stockpiles and cleared areas and other exposed surfaces; and
 - ii. progressive revegetation strategy for exposed surfaces in accordance with Conditions of Approval Nos. 89 and 97.
115. Where there is a risk of losing material, construction vehicles using public roads shall be maintained and covered to prevent any loss of load, whether in the form of dust, liquid, soils. Construction vehicles shall be maintained in such a manner that they would not track mud, dirt or other material onto any street which is opened and accessible to the public. In the event of any spillage, the Proponent is required to remove the spilt material within 24 hours.
116. In accordance with the *Protection of Environment Operations (Control of Burning) Regulation 2000*, no open burning or incineration shall be permitted on site unless otherwise approved by the EPA.

Hazards and Risk Management

117. The Proponent shall prepare and implement a Hazards and Risk Management Sub Plan. This Sub Plan shall include, but not be limited to the following:
- i. details of the hazards and risks associated with the proposal; and
 - ii. pro-active and reactive mitigation measures including contingency plans to be implemented in the event of a pollution incident.

Dangerous Goods and Hazardous Materials

118. The Proponent shall prepare and implement an On-Site Refuelling Protocol to manage on-site refuelling of vehicles during the construction. The Protocol shall include, but not necessarily be limited to:
- i. a decision-making algorithm to determine whether on-site or off-site refuelling is appropriate in a given situation;
 - ii. arrangements for the transport of diesel to the refuelling site, including vehicle types, volumes, movement times and routes where relevant;
 - iii. procedures for refuelling to address the potential for spills, collisions with refuelling vehicles or other hazardous incidents; and

- iv. procedures to be followed in the event of a diesel spill, including containment and clean-up measures.

The On-Site Refuelling Protocol shall be submitted for the approval of the Director-General prior to the commencement of any refuelling activity, or within such period otherwise agreed by the Director-General.

Should the Proponent decide not to undertake any on-site refuelling activity during construction, the Proponent may satisfy this condition by certifying in writing, to the Director-General, that such refuelling activities will not be conducted.

Construction Risk Management

119. The Proponent shall prepare and implement a Construction Safety Plan to manage hazardous incidents and public safety during the construction of the proposal. The Plan shall include, but not necessarily be limited to:

- i. physical measures to be implemented to minimise the potential for public harm at and in the vicinity of construction areas;
- ii. a program to ensure that safety measures implemented to minimise the potential for harm to the public remain in place and are adequately maintained while hazardous situations exist;
- iii. procedures for the notification of residents in the vicinity of construction sites whose safety may be affected by construction activities;
- iv. procedures to manage risk to construction workers;
- v. identification of pipelines, cables and other utilities that may be affected by construction of the roadway and associated infrastructure, either directly or indirectly, and methods to minimise those impacts;
- vi. procedures to be followed in the event that contaminated material is discovered during any excavation works; and
- vii. measures to be implemented to ensure safe transport of construction materials, including transport routes, transport times, vehicle speeds and driver behavioural requirements.

The Construction Safety Plan shall be submitted for the approval of the Director-General prior to the commencement of any construction activity, or within such period otherwise agreed by the Director-General.

Operation Risk Management

120. The Proponent shall prepare and implement an Emergency Plan to manage emergency events that may arise. The Plan shall include, but not necessarily be limited to:

- i. identification of emergencies that may arise in relation to the proposal and associated infrastructure;
- ii. procedures to be followed to address potential emergencies and minimise the impacts of emergencies on surrounding land uses;
- iii. monitoring and communication systems installed to indicate an emergency;
- iv. details of fire safety measures where relevant;
- v. procedures for the notification of relevant emergency services, authorities and affected receptors of an emergency situation; and
- vi. a system to investigate and address the cause(s) of any emergency to prevent recurrence.

The Emergency Plan shall be submitted for the approval of the Director-General prior to the commencement of operation of the proposal, or within such period otherwise agreed by the Director-General.

121. The Proponent shall prepare and implement a Security and Crime Management Strategy to prevent unauthorised public ingress or access, and to minimise the potential for crime in the vicinity of proposal (eg vandalism, loitering, illegal dumping etc). The Strategy shall be generally in accordance with the principles outlined in the joint Department and Police Service publication *Crime Prevention and the Assessment of Development Applications*, and be developed in consultation with the NSW Police Service and relevant councils. The Strategy shall include, but not necessarily be limited to:
- i. details of security arrangements to prevent unauthorised access, including physical exclusion measures, detection devices and management mechanisms;
 - ii. procedures for addressing security issues, should they arise;
 - iii. specific design features intended to discourage the incidence of crime at and in the immediate vicinity of relevant components of the proposal and associated infrastructure (eg. fencing on overpasses);
 - iv. lighting considerations, including light intensity, direction and hours of operation at and in the immediate vicinity of the proposal, with the aim of minimising areas that may encourage crime;
 - v. policies and procedures for the management and removal of graffiti, amelioration of vandalism, should it occur at or on any component of the of relevant components of the proposal; and
 - vi. policies and procedures for the management and removal of illegal or inappropriate bill-posting and illegally dumped materials, should it occur at or on any component of relevant components of the proposal.

The Security and Crime Management Strategy shall be submitted for the approval of the Director-General prior to the commencement of construction or within such period otherwise agreed by the Director-General.

This condition only applies to "relevant" components of the proposal. That is, this condition only applies to those components that may be subject to security or crime issues.

Spoil Disposal

Spoil Management Plan

122. The Proponent shall prepare a Spoil Management Sub Plan. The Sub Plan shall identify how spoil would be handled, stockpiled, reused and disposed. The Sub Plan shall be prepared:
- i. in consultation with the EPA and the relevant Councils;
 - ii. prior to construction; and
 - iii. for all relevant sites.
123. All clean and/or treated spoil shall be reused or recycled where possible and cost effective to do so. The Proponent shall ensure that spoil generated from construction activities is maximised in preference to any import of fill.

Waste Management and Recycling

Waste Management and Reuse Sub Plan

124. A detailed Waste Management and Reuse Sub Plan shall be prepared. The Sub Plan shall address the management of wastes during the construction and operation stages respectively in accordance with Government's *Waste Reduction and Purchasing Policy*. It shall be prepared prior to construction, and shall identify requirements for:
- i. waste avoidance;
 - ii. reduction;
 - iii. reuse; and
 - iv. recycling;

and details of requirements for:

- v. handling;
- vi. stockpiling;
- vii. disposal of wastes: specifically contaminated soil or water, concrete, demolition material, cleared vegetation, oils, grease, lubricants, sanitary wastes, timber, glass, metal, etc.;
- viii. implementation of energy conservation best practice; and
- ix. identifying any site for final disposal of any material and any remedial works required at the disposal site before accepting the material.

125. Any waste material that is unable to be reused, reprocessed or recycled shall be disposed at a landfill licensed by the EPA to receive that type of waste. The Sub Plan shall be framed using the waste minimisation hierarchy principles of avoid-reduce-reuse-recycle-dispose. This shall also include the demand for water.

Utilities and Services

126. A detailed Utility Services Sub Plan shall be prepared in consultation with the relevant service providers (eg. Transgrid, Agility Services, Telstra). The Sub Plan shall identify the services potentially affected by construction activities and discuss requirements for diversion, protection and/or support. The Sub Plan shall be prepared in consultation with the relevant service provider(s).

127. Any alterations to utilities and services shall be carried out to the satisfaction of the relevant service provider(s), and unless otherwise agreed to by the service provider, at no cost to the service/utility provider(s).

128. The Proponent shall ensure that disruption to services resulting from the proposal are minimised and shall be responsible for advising local residents and businesses affected prior to any disruption of service.

Location of Construction Facilities

129. The Proponent shall construct concrete batching plants and construction compounds and any other ancillary infrastructure (including sedimentation basins) required for this proposal only in those locations that satisfy the following criteria:

- i. sites are to be located within the road reserve wherever possible;
- ii. sites are to be located with ready access to the local road network;
- iii. sites on relatively level land;
- iv. sites to be separated from nearest residences by at least 200 metres unless it can be demonstrated to the satisfaction of the Director-General that there will be no adverse impacts on noise, visual and air quality impacts;
- v. sites are not to be located within 100 metres of waterways unless adequate erosion and sediment controls are implemented to protect water quality;
- vi. sites above the 100 ARI flood level;
- vii. sites are to have low conservation significance for flora, fauna or heritage and they are not to require any clearing of native vegetation beyond that which must be cleared for the proposal in any case;
- viii. sites that do not contain areas shown as habitat for threatened species or communities; and
- ix. sites are to be selected so that the operation of the plants does not impact on the land use of adjacent properties.

Note:

Any modification to the proposal that would be inconsistent with the conditions of approval shall only be carried out with the prior written approval of the Minister, in accordance with the relevant provisions of the *EP&A Act*.

Attachment 1

Guidelines for the Establishment of the Community Liaison Group

1. The Proponent shall consider the following when establishing a Community Liaison Group (CLG):
 - i. the CLG shall comprise at least two (2) representatives of the Proponent (including the Environmental Management Representative), at least one (1) representative of the relevant Council, at least two (2) community representatives and one (1) business representative (where relevant);
 - ii. at its first meeting, the CLG shall consider its interrelationship with any existing community liaison/ consultative groups of adjoining or interrelated developments;
 - iii. representatives from relevant government agencies or other individuals may be invited to attend meetings as required by the Chair; and
 - iv. an independent note taker shall be provided by the Chair at the expense of the Proponent where determined necessary by the Chair.
2. The Proponent shall, at its own expense:
 - i. nominate two (2) representatives to attend all meetings of the Committee;
 - ii. provide to the CLG regular information on the progress of work and monitoring results;
 - iii. promptly provide to the CLG such other information as the Chair may reasonably request concerning the environmental performance of the development;
 - iv. provide access for site inspections by the CLG; and
 - v. provide meeting facilities for the CLG, and take Minutes of CLG meetings. These Minutes, once endorsed by the Chair, shall be available for public inspection at the relevant Council within 14 days of the meeting.

The Proponent shall ensure that Minutes from CLG meetings are placed on the Internet within 14 days after they become available (refer Condition of Approval No. 17).

Appendix 2 Director-General's Conditions of Concurrence



EXECUTIVE SUMMARY

On 17th September 2001, the Director-General of National Parks and Wildlife received a concurrence application pursuant to Section 112C(b) of the *Environmental Planning and Assessment Amendment Act 1997 (EP&A Act)*. Concurrence was sought for a decision by the Chief Executive of the Roads and Traffic Authority to grant approval under Part 5 of the *EP&A Act* to the F3 to Branxton highway link ('the activity').

I have considered the application in accordance with Section 112D of the *EP&A Act*. I have decided to grant concurrence to this activity for the reasons set out in section 8 of this report and subject to the conditions of concurrence as outlined in section 9 of this report.

Bob Conroy
Director Central

For Director-General of National Parks and Wildlife

Date: 3rd October 2001

9 CONDITIONS OF CONCURRENCE

General

1. The RTA* will ensure that the activity is constructed as presented in section 7 of the Representations Report - Proposed Highway link F3 Freeway to Branxton (September 2001) and its Appendices, as received by the NPWS on 17th September 2001 and modified by:

- correspondence from the RTA received on 25th September 2001 in reply to outstanding threatened species issues raised by the NPWS and the DUAP;
- the RTA's Compensatory Habitat Proposal and Candidate Areas – Stage 2 Report received on 27th September 2001; and
- these conditions of concurrence.

Reason: To ensure that the activity is undertaken as described in the EIS, FIS and as amended by the subsequent correspondence and information noted above, and to ensure compliance with the conditions outlined in the Representations Report and its Appendices, as modified by these conditions of concurrence.

2. The RTA must notify the Manager, Conservation Programs and Planning Division (CPPD), NPWS Central Directorate in writing of any proposed variations to the alignment, design or construction of the activity not considered in the EIS/FIS/Representations Report or the subsequent amending documentation noted above, which may impact on threatened species, populations or endangered ecological communities, before the commencement of clearing for construction. The NPWS must be given the opportunity to inspect the final route and any such variations can then only proceed if approved in writing by the Manager, CPPD, Central Directorate. The NPWS must be allowed a minimum of fifteen working days to consider these variations and to provide advice on the appropriate measures required to mitigate their impact.

Reason: To ensure that such alterations to the activity do not increase the adverse impacts on threatened species, populations and endangered ecological communities or lessen the protection provided to threatened species, populations and endangered ecological communities by the conditions contained within the Representations Report, as modified by the subsequent documentation noted above and these conditions of concurrence.

3. The RTA should give consideration to modifying or refining the design and alignment of the activity in consultation with the Manager CPPD Central Directorate prior to construction to further reduce the direct and/or indirect impacts on threatened species, populations and endangered ecological communities or to improve the effectiveness of ameliorative measures. This could include the re-design of interchanges/intersections; fauna under- and overpasses; tunnels; median widths, bridgeworks; batters or similar modifications to reduce the footprint of the activity (see section 2.3 of this report).

Reason: The NPWS was unable to independently assess the feasibility of modifying the design of the activity so as to reduce its footprint from the level of design detail provided in the EIS/FIS/Representations Report, together with the amending supplementary documentation.

4. Without further environmental assessment, no clearing for ancillary infrastructure or associated works including permanent or temporary detention or sediment control basins; materials stores; access roads; utility corridors; works areas; depots or any other activity or development (as defined by the *Environmental Planning and Assessment Act 1979*) shall be carried out, or be allowed to be carried out, within areas shown as habitat for endangered

ecological communities or threatened species in any of the documents (see section 2 of this Concurrence Report) received by the NPWS in assessing the concurrence proposal.

Reason: The location of ancillary infrastructure was not identified, nor were the impacts assessed, in the EIS, FIS or any of the subsequent documentation received by the NPWS. Therefore this concurrence cannot give approval to clear any threatened species, population or endangered ecological community habitat for ancillary infrastructure or associated works. This will require further assessment under Part 5 of the Environmental Planning and Assessment Act 1979.

Additional surveys

5. The RTA must employ a qualified botanist to carry out further targeted surveys for the threatened flora species:

- *Tetratheca juncea*; and
- *Cryptostylis hunteriana*.

These must be undertaken prior to construction in appropriate habitat and during the flowering period for these species. The results of these surveys must be provided to the Manager CPPD Central Directorate for review and approval. The RTA must also notify the Manager CPPD Central Directorate in writing of any new sightings of threatened flora detected within the footprint of the activity prior to the commencement of clearing.

Reason: To determine more definitively whether these species occur in the study area, and if so, to develop and implement appropriate mitigation and/or compensation measures to minimise the impacts of the activity on these species in accordance with conditions 8, 9, 10 and 11.

6. The RTA must employ a qualified zoologist/ecologist to conduct further targeted surveys within the study area, as defined by the FIS, in all suitable habitats and under conditions conducive to the detection of the following threatened fauna species:

- Squirrel Glider;
- Koala;
- Powerful Owl;
- Masked Owl;
- Green and Golden Bell Frog;
- Grey-headed Flying Fox; and
- Regent Honeyeater.

These must be undertaken prior to construction and the results must be provided to the Manager CPPD Central Directorate for review and approval. The RTA must also notify the Manager CPPD Central Directorate in writing of any new sightings of threatened fauna within the footprint of the activity prior to the commencement of clearing.

Reason: To determine more definitively whether these species occur in the study area, and if so, to develop and implement appropriate mitigation and/or compensation measures to minimise the impacts of the activity on these species in accordance with conditions 8, 9, 10 and 11.

7. The RTA must undertake a survey of the extent of weed infestation within, and adjacent to, the construction footprint and prepare a Weed Management Strategy (WMS) to control weeds during the construction and operational phases of the activity. The WMS will form part of the construction and operational EMPs for the activity. It will prioritise areas along the route

for the weed control and identify target species, as well as the appropriate removal and disposal methods for managing these weeds.

Reason: To ensure that the impacts on threatened species, populations and endangered ecological communities from weed invasion are minimised.

Mitigation measures

8. The RTA must implement all measures for the mitigation of impacts on threatened species, populations and endangered ecological communities as described in section 5 of the FIS, section 8 of the Representations Report and the conditions of this Concurrence Report. This must include mitigatory measures required for any threatened species identified in the additional survey work outlined in conditions 5 and 6 above. Any subsequent changes to the mitigatory measures must be agreed to in writing by the Manager CPPD Central Directorate.

Reason: To ensure that the activity is undertaken as described in the EIS/FIS/Representations Report, and the subsequent documentation noted above, and that it incorporates the mitigatory measures for threatened species, populations and endangered ecological communities agreed to by the Director-General of National Parks and Wildlife in this Concurrence Report.

9. Prior to construction, and in consultation with the Manager CPPD Central Directorate, the RTA must engage an appropriately qualified and experienced rehabilitation ecologist to provide advice and assist in the design, construction and monitoring of mitigation measures for this activity. This condition has been previously stipulated by NPWS in relation to a number of Pacific Highway upgrade projects and consequently the RTA should be able to call upon the expertise gained from these projects.

Reason: To ensure that the mitigatory measures employed to ameliorate the impacts of the activity on threatened species, populations and endangered ecological communities are designed and implemented to maximise their effectiveness.

10. The RTA must provide the Manager CPPD Central Directorate with the final design, location and construction details of the mitigation measures for this activity as outlined in section 5 of the FIS and section 8.2 of the Representations Report and amended by these concurrence conditions, including:

- fauna over- and underpasses;
- fauna exclusion fencing;
- nest boxes;
- salvaged trees containing hollows;
- glider and refuge poles; and
- any features associated with these mitigatory structures to encourage their use by fauna.

The final design, location and construction of these mitigatory measures should be subject to any refinements arising from the outcomes of current research studies including the Pacific Highway fauna underpass studies being undertaken for the RTA by AMBS and the Koala Research and Monitoring Survey (AMBS) and should be detailed in the construction EMP for the activity.

Reason: To minimise the barrier impacts on threatened fauna species resulting from the activity and reduce the likelihood of road kill and to ensure that any refinements maximise the opportunity for threatened fauna to effectively make use of these mitigatory measures.

11. The RTA must ensure that appropriate fauna shelter and refuge structures are installed in all bridges and culverts nominated as incorporating provisions for fauna movement in sections 5.1.3 and 8.2 of the Representations Report. These structures are to be installed at varying heights to maximise their potential use by fauna. The RTA must also ensure that these structures are not prone to inundation during flooding. The maximum area possible beneath bridges is to be vegetated with appropriate locally endemic species to encourage fauna use (at least 70% of the area beneath the bridge excluding the width of the creek bed). The RTA must provide the Manager CPPD Central Directorate with detailed specifications in relation to these fauna refuge and movement structures as part of the construction EMP for this activity.

Reason: To maximise the opportunity for fauna to utilise these structures for movement across areas bisected by the activity.

12. The RTA must assess the feasibility of translocation for any individuals of the following, or any other, threatened species identified within the construction area which would otherwise be destroyed:

- *Grevillea parviflora* subsp. *parviflora*; and
- *Persoonia pauciflora*.

A report detailing the findings of this assessment and any proposed actions is to be provided to the Manager, CPPD Central Directorate. Any translocations must be undertaken in consultation with, and with the written approval of, the Manager, CPPD Central Directorate and must be the subject of a formal translocation proposal. Translocation proposals must be submitted to the Manager, CPPD Central Directorate and demonstrate that relevant issues from the following documents have been considered:

- NPWS's *Draft circular on the translocation of threatened flora*;
- NPWS's *Interim policy for the translocation of threatened fauna in NSW*; and
- *Guidelines for the translocation of threatened plants in Australia* a report by the Australian Network for Plant Conservation.

Translocated species should be established in suitable, but secure, areas as close as possible to their point of origin.

Reason: Despite the provision of compensatory habitat, there will still be a net loss of threatened species, populations and endangered ecological communities as a result of this activity. The above protocols will determine the circumstances, if any, where translocation of threatened species is both appropriate, as well as feasible, and ensure that translocation and re-establishment is carried out in such a way as to minimise impacts on the threatened species.

Compensatory habitat

13. The RTA must formally negotiate a comprehensive compensatory habitat package with the Manager CPPD Central Directorate at least 12 months prior to the commencement of clearing for construction of the activity. This compensatory habitat package must be agreed to in writing by the Manager CPPD Central Directorate before clearing for construction can commence. It is to include the acquisition and transfer of lands to the NPWS, as well as adequate funding for the rehabilitation and management of these lands for conservation in accordance with the criteria set out in section 2.5 of this report. It must also include funds for the revegetation of cleared land, where sufficient intact habitat cannot be purchased to meet

the requirements of the compensatory habitat package. The basis for negotiating this compensatory habitat package is detailed in section 2 of this Concurrence Report.

Reason: To provide adequate compensation for the direct and indirect impacts of the activity on threatened species, populations and endangered ecological communities which cannot be fully mitigated by ameliorative measures and to enhance the conservation status of these threatened species, populations and communities in the region.

Recovery plans

14. The RTA will contribute \$100,000 (in 2001 dollars) towards the costs incurred by the NPWS in the development, and subsequent implementation, of recovery plans for threatened species, populations and endangered ecological communities significantly affected by this proposal including:

- Kurri Sand Swamp Woodland;
- *Eucalyptus parramattensis* subsp. *decadens*;
- *Grevillea parviflora* subsp. *parviflora*; and
- *Persoonia pauciflora*.

Reason: The activity impacts on the recovery potential of a number of threatened species populations and ecological communities. Recovery plans and actions are statutory mechanisms to co-ordinate the long-term recovery of threatened species, populations and communities.

Environmental Management Plans (EMPs)

15. The RTA must provide all construction and operational EMPs to the Manager CPPD Central Directorate for review and comment. This should occur 2 months before the commencement of clearing of threatened species, populations and endangered ecological communities for a construction EMP and at least 6 months before the activity becomes operational for an operational EMP. The written approval of the Manager CPPD Central Directorate must be obtained on any matters relating to the management of threatened species, populations and endangered ecological communities prior to finalisation of these EMPs. Matters to be addressed in these EMPs include, but are not limited to, those detailed in section 9 of the EIS. These EMPs must incorporate the most current advice on ‘best practice’ management of native flora and fauna and must specifically address:

- the requirement for minimal clearing and disturbance of native vegetation which provides habitat for threatened species and populations;
- procedures for clearing which will identify threatened species and their habitat and prevent construction activities from adversely impacting on them including: specific methods for undertaking comprehensive pre-clearing surveys in the footprint of the activity for evidence of threatened species or their habitat; provisions for visual identification of threatened species and/or their habitat; fencing and buffers of sufficient width to provide protection for threatened species and/or their habitat; and protocols for minimising impacts on these species and their habitat during construction (eg accommodation of threatened species that breed, roost or hibernate in habitat proposed for clearing);
- the management of fauna that are displaced or injured during clearing;
- the retention of hollow-bearing trees;

- procedures for the felling of hollow-bearing trees that must be removed to minimise the impacts on native fauna generally and threatened species, in particular, which may use those hollows;
- the management of construction activities in the vicinity of habitat trees or trees to be retained as likely crossing points for arboreal mammals; and
- the feasibility of a staged approach to clearing and construction in areas identified as containing threatened species or where the footprint of the activity crosses wildlife corridors.

They should also include the following matters:

- the outcomes of feasibility studies relating to the translocation of threatened flora;
- a Weed Management Strategy, as referred to in concurrence condition 7;
- a Landscape Master Plan which demonstrates a commitment to propagate a representative selection of native plant species impacted by construction, particularly those that are important as habitat (eg feed or roost trees) for threatened fauna, using appropriate methods (seed, cuttings etc.);
- propagation trials for native flora species to be used in compensatory plantings and rehabilitation/revegetation works;
- details of treatments for fauna mitigation structures (for example design, materials to be used, dimensions, extent of areas to be revegetated and species to be used, and the nature of any associated structures to encourage fauna usage);
- monitoring programs for the construction and operational phases of the activity to assess any impacts on threatened species, populations and endangered ecological communities and the efficacy of measures to mitigate these impacts. The monitoring is to be undertaken by an appropriately qualified ecologist engaged by the RTA and annual written reports are to be submitted to the Manager CPPD Central Directorate for review and comment for a period of 5 years following the commencement of operation; and
- details and timeframes of associated habitat restoration and enhancement projects.

Reason: To ensure compliance with the measures outlined in section 5 of the FIS, section 4 of the Fauna and Flora Report and section 8.2 of the Representations Report, as modified by the subsequent documentation noted above and these conditions of concurrence. And, to make sure that the impacts of the activity on threatened species, populations and endangered ecological communities are minimised through effective mitigatory measures.

* all references to the RTA in this document include contractors employed by the RTA to design, construct and manage the activity.