

The background of the cover is a photograph of a white truck with a large, tan-colored trailer driving on a paved road. The truck is moving towards the viewer. In the background, a white car is also visible on the road. The road is flanked by lush green trees and foliage. A dark blue semi-transparent rectangular area is overlaid on the bottom half of the image, containing the title and other text.

Failford Road to Tritton Road

Upgrading the Pacific Highway

DETERMINATION REPORT / SEPTEMBER 2008



Failford Road to Tritton Road
Upgrading the Pacific Highway
REVIEW OF ENVIRONMENTAL FACTORS

MAY 2008

Upgrading the Pacific Highway
Great Lakes and Greater Taree Local
Government Area
REVIEW OF ENVIRONMENTAL FACTORS
DECISION REPORT

REF DECISION REPORT

PACIFIC HIGHWAY OFFICE

Failford Road to Tritton Road Pacific Highway Upgrade

INTRODUCTION.

The Failford Road to Tritton Road Review of Environmental Factors (REF) has been prepared by HLA-Envirosciences Pty Limited (HLA) on behalf of the NSW Roads and Traffic Authority (RTA) to take into account all matters affecting, or likely to affect, the environment as a result of the upgrade of the Pacific Highway from Failford Road to Tritton Road, approximately 17 km south of Taree and 112 km north of Newcastle (the 'proposal').

The proposal is part of the RTA's broader plans and strategy to upgrade the Pacific Highway to a high standard dual carriageway for its entire length, from Hexham to the Queensland border. The upgrade of this section of the highway would provide a connection between existing high quality dual carriageways and would result in increased safety and improved traffic conditions on the carriageway.

The objectives of this Decision Report are to:

- Assess the likely environmental impacts detailed in the REF;
- Determine the significance of those impacts;
- Propose conditions of approval to apply should the proposal proceed; and
- Address the position under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

PROPOSAL DESCRIPTION.

The proposal considered by this REF includes the provision of a new northbound carriageway, intersection upgrades, an interchange at Failford Road, service roads and culvert crossings for local drainage lines. The Failford Road to Tritton Road upgrade is approximately 17 km south of Taree and 112 km north of Newcastle.

The section of the highway between Failford Road and Tritton Road is currently dual carriageway. The current northbound carriageway was previously a two-lane section of the highway and the horizontal and vertical alignment is below current standard. It became the northbound carriageway when the southbound carriageway was constructed in the early 1990s.

The proposal includes the construction of a new carriageway adjacent to the existing southbound carriageway on the eastern side. The existing southbound lanes would become the new northbound lanes. Much of the existing northbound carriageway would become a two-way service road, linking Possum Brush Road, Bullocky Way, St Peters Close and local properties to the Failford Road interchange. This proposal would raise the standard of this section to be consistent with adjoining sections of the highway. The proposal has been designed to allow for potential staging during construction. The total estimated cost of the upgraded highway to the ultimate (stage 1 plus stage 2) is \$46 million (\$2006). Although the review of environmental factors has identified two possible stages, there is potential for the proposed upgrade to be developed into multiple smaller work packages.

NEED FOR AND JUSTIFICATION OF THE PROPOSAL

The proposal is needed as part of the RTA's broader plans and strategy to upgrade the Pacific Highway to a high standard dual carriageway for its entire length, from Hexham to the Queensland border. The need to upgrade the section of the Pacific Highway between Failford Road and Tritton Road is based on a number of factors which include regional and coastal population growth, road safety and economic issues. These are discussed in the sections below.

Population growth

Sustained growth in the Hunter and Mid North Coast Region and the coastal areas of NSW on the whole, and forecasts for continued growth in the region, have resulted in an increased pressure on the road transport system. Improvements in road infrastructure are required for safe and efficient transport up and down the coast in order to accommodate growth trends.

The proposal is also needed to ensure that the expected traffic growth on the highway would not increasingly expose the deficiencies of the existing road. In the long term, the proposal would result in increased safety and improved traffic conditions on this section of the Pacific Highway.

Road safety issues

The existing northbound carriageway of this section comprises relatively small radius horizontal and vertical curves which require a lower travel speed and have a higher potential for accidents.

Road safety issues are evident in the high number of recorded accidents in this section of the highway; 86 were recorded between 1999 and 2004 and, of these, three resulted in fatalities. The upgrade of this section of the highway would provide a connection between existing high quality dual carriageways, and consolidate several access points.

The most heavily trafficked local road in the area of the proposal is Failford Road which connects the highway to the coastal towns of Tuncurry, Forster and Black Head. A grade-separated interchange is proposed near the Failford Road, St Peters Close intersection with the highway. The interchange is a multi-directional interchange allowing turning movements from all possible directions at this location and would provide the southern access point for the proposed service road.

An overpass is proposed approximately 350 m south of the current junction of Bullocky Way with the highway. This overpass would connect Bullocky Way to the service road and would allow connectivity between Bullocky Way, The Bullocky Way intersection and cross median access would be closed and access would be via Failford Road and the interchange and service road.

Possum Brush Road would connect directly to the service road and to the northbound on-load ramp to the highway. All Possum Brush Road traffic movements to and from the south would be via the service road and the Failford Road interchange. Access to Possum Brush Road from the north would be via the Failford Road interchange and the service road. The proposal would close the access to Tritton Road from the highway and access to the properties along Tritton Road would be via Possum Brush Road.

Economic issues

A high standard, reliable road network which links large regional and metropolitan centres and small towns is necessary to provide improved access to markets and sources of goods and services. Transport cost is often a major component of production cost; therefore road improvements would have a direct and positive effect on economic efficiency.

The overall economic efficiency of the Project has been examined in the RoadNet traffic study (Appendix E in the REF). An economic analysis for the Project has been carried out for various funding scenarios in accordance with the RTA's Economic Analysis Manual, 1999.

The cost of the project has been determined Analysis has been on the basis of RoadNet's estimates of the cost for the project. These costs are to strategic level and include all costs planning, design, property acquisition, construction and provision for contingencies. The 'A' Class option shows a BCR of 2.18 and the 'M' Class option 2.22 when standard discount rate of 7% is used. This indicates that both options will provide a return to the community of at least twice the investment,

CONSULTATION

As outlined in Section 1 of the Submissions Report, the refined concept design and REF was placed on public display between Monday 26 May 2008 to Friday 27 June 2008. The Submissions Report is attached as Appendix 1 to this Decision Report. The REF was displayed at 7 centres as outlined in the Submissions Report and fifteen submissions were received.

The RTA received written submissions on the refined concept design and REF were received from the Great Lakes Council as well as the following NSW Government agencies:

- Department of Primary Industries (DPI);
- Department of Environment and Climate Change (DECC).

A Submission Report has been prepared collating the received submissions and provides a response as to how the issues raised are being addressed. This is attached as appendix 1 of this Decision Report.

CONSIDERATION OF REVIEW OF ENVIRONMENTAL FACTORS

The REF has been examined and considered. The REF addresses the requirements of Section 111 of the Environmental Planning and Assessment Act, 1979.

In considering the activity this assessment has examined and taken into account, all matters affecting or likely to affect the environment by reason of that activity as addressed in the REF and associated information. This evaluation was considered in accordance with the Department of Planning's *Is an EIS Required?*.

This assessment has considered the potential impacts of the activity on critical habitat and on threatened species, populations or ecological communities or their habitats for both terrestrial and aquatic species.

As part of the consideration of the activity this assessment has also addressed all matters of National Environmental Significance and any impacts on Commonwealth land. In relation to matters of National Environmental Significance, this evaluation has been undertaken in accordance with Government Administrative Guidelines on determining whether an action

has, will have, or is likely to have a significant impact. Matters of National Environmental Significance are assessed in Table 23 Section 12 of the REF.

ASSESSMENT

The activity described in the REF will have some environmental impacts, which can be ameliorated satisfactorily. Having regard to the safeguard measures proposed and to the Conditions of Approval set out below, this assessment has considered that these impacts are unlikely to be significant and therefore an Environmental Impact Statement is not required.

The activity described in the REF will not affect declared critical habitat. The activity described in the REF will not significantly affect threatened species, populations or ecological communities or their habitats. Therefore a Species Impact Statement is not required.

The activity described in the REF will not affect Commonwealth land. It will have no impact on matters of National Environmental Significance.

CONDITIONS OF APPROVAL

1. REF safeguard measures and commitments.

- 1.1. All safeguard measures stated in the Failford Road to Tritton Road REF dated May 2008 (including but not limited to Table 21) and the Failford Road to Tritton Road Submission Report dated September 2008, shall be included as part of the proposed upgrade, including detailed design. All additional commitments in Table 4.1 of the Failford Road to Tritton Road Submissions Report dated September 2007 shall be included as part of the proposed upgrade. Any inconsistencies in requirements shall be referred to the RTA Environmental Services Manager Pacific Highway for further consideration.
- 1.2. The Proponent may elect to construct the Project in stages provided construction is consistent with the conditions of approval. Where stages are proposed, the Proponent shall submit a Staging Report to the Director-General at least eight (8) weeks prior to construction commencing which:
 - a) describes the stages; and
 - b) identifies how the conditions of approval will be addressed across and between the stages of the project.
- 1.3. A detailed design report shall be prepared for the proposal well prior to construction and forwarded to the RTA Environmental Services Manager Pacific Highway for input and review. The report shall Identify inconsistencies between the Review of Environmental Factors and the Detailed Design and include certification that all obligations applicable to the detailed design stage, including REF safeguards, additional commitments in the Submissions Report and conditions of approval, have been included and addressed in the detailed design. The report shall address:
 - i. Identify the vegetation clearing requirements of the detailed design;
 - ii. The design and capacity of sediment basins;
 - iii. The location and design of fauna mitigation measures; and

- iv. The proposed locations for ancillary sites including batch plants, compounds, offices and stockpiles
- 1.4. Further discussions shall be held between the RTA and DECC to formalise agreement on the inclusion of Failford Rd to Tritton Rd upgrade in Section one of the Compensatory Habitat agreement between the RTA and DECC signed by Brian Gilligan, DG – NPWS, on 9 January 2003.
- 1.5. All obligations applicable to the construction contract, including REF safeguards, additional commitments in the Submissions Report and conditions of approval shall be incorporated within the contract environmental specifications for the proposal, including Specification G36, Specification G38, Specification G40, revegetation specifications and applicable Pacific Highway Office fauna requirements. The draft contract specifications and fauna requirement shall be reviewed by the RTA Environmental Services Manager, Pacific Highway prior to tender stage.
- 1.6. Environmentally Sensitive Area mapping highlighting all environmental constraints for the project shall be prepared and be available for any early works, construction and operation.

2. Notification.

- 2.1. The RTA Project Manager shall notify the RTA Environmental Services Manager Pacific Highway by email four weeks before works are to commence.

3. Site Environmental Manager.

- 3.1. A suitably qualified and experienced person shall be appointed during construction to manage construction environmental issues associated with the project and may have responsibility for more than this project. The final arrangements in regards to the appointment, the sharing of roles across projects, hours of work and employment pre construction shall be agreed to by the RTA Environmental Services Manager Pacific Highway or as otherwise agreed by the General Manager Pacific Highway.

4. Licences and liaison with regulatory authorities.

- 4.1. All necessary approvals, permits and licences required by NSW legislation shall be obtained prior to construction commencing. These approvals, permits and licences shall be maintained and complied with. Prior to construction commencing, liaison shall occur with DECC (licences, heritage including Section 87 and 90 permits, water, air and noise pollution issues), DWE (licence and permits, works in waterways, and water use issues, and NSW DPI Fisheries (licences and permits, fish passage/ dredging and reclamation issues/ marine vegetation) and any Local Government approvals (eg sewer) to ensure all agency requirements are met in relation to approvals, permits and licences.
- 4.2. A licensing file/ folder is required to be held on the construction site on consultation with the above agencies for approvals, licences and permits listed above and copies of these documents, including contractor documents.
- 4.3. An Environmental Review Group shall be established to review all environmental issues as the project develops. RTA, Site Representative, relevant regulatory agencies and local Councils shall be invited to meetings of this group.

5. Community liaison and complaints.

- 5.1. Prior to the commencement of activities, and then at three monthly intervals, advertisements shall be placed in the local paper for this project. These shall outline the nature of the works for the forthcoming three months, the areas in which these works are proposed to occur, the hours of operation and a contact telephone number.
- 5.2. A Construction Complaints Management System shall be implemented consistent with AS 4269 "Complaints Handling" before construction commences and maintained for the duration of construction. Prior to the commencement of construction of the project, the following information shall be available for community complaints and enquiries for the duration of construction:
 - i. a 24 hr telephone number on which complaints and enquiries about the project may be registered.
 - ii. a postal address to which written complaints and enquiries may be sent.
 - iii. an email address to which electronic complaints and enquiries may be transmitted.

The telephone number, the postal address and the email address shall be published in a newspaper circulating in the local area prior to the commencement of construction and prior to the commencement of operation of the project. This information shall also be provided on the Project's website. A register of public complaints shall be established at time of construction commencing and maintained for the full duration of construction. The register shall record details of complaints, complainant contact information and action taken to address complaints.

- 5.3. A project website shall be established and maintained for the provision of electronic information associated with the project. The Project shall publish and maintain up-to-date information on the website.
- 5.4. A community information plan shall be developed in consultation with the Pacific Highway Office, the plan shall include measures to inform the community of construction activities, and how nearby residents and affected businesses will be consulted to help minimise the impact of construction activities during the construction phase.

6. Environmental Management Plans (EMPs).

- 6.1. Prior to the commencement of construction of the project or each stage of the project, a Construction Environmental Management Plan (CEMP) shall be prepared, in consultation with relevant RTA and Government Departments and Council, to outline environmental management practices and procedures to be followed during construction of the project. The CEMP shall be developed incorporating the mitigation measures identified in the REF, commitments in the Submissions Report and these Conditions of Approval, specifications and any licences, permits or approvals. The CEMP shall address RTA specification requirements and be reviewed by the RTA Environmental Services Manager Pacific Highway prior to the commencement of any site works.
- 6.2. The CEMP shall include the following Management Plans:
 - i. Soil and Water Management Plan
 - ii. Flora and Fauna Management Plan
 - iii. Traffic Management Plan
 - iv. Air Quality and Dust Management Plan

- v. Noise and Vibration Management Plan
- vi. Waste Management and Reuse Plan
- vii. Landscape Management strategy. This shall be developed in consultation with a landscape architect/ specialist
- viii. Heritage Management Plan. This shall be prepared for the proposal to address indigenous and non indigenous heritage. In addition to other agencies this plan should also be reviewed by the Local Aboriginal Land Council.
- ix. Hazard and Risk Management Plan.

6.3. Prior to the commencement of operation of the project, or each stage of the project, an Operation Environmental Management Plan shall be prepared and submitted for the approval of the RTA Environmental Services Manager Pacific Highway to detail an environmental management framework, practices and procedures to be followed during the operation of the project.

The Plan shall be submitted for the approval of the RTA Environmental Services Manager Pacific Highway no later than one month prior to the commencement of operation of the project, or within such period otherwise agreed by the RTA Environmental Services Manager. Operation of the project shall not commence until written approval has been received from the RTA Environmental Services Manager Pacific Highway.

Nothing in this approval restricts incorporation of the above operational environment plan into existing management systems administered by RTA

7. Environmental inspection and auditing.

- 7.1. Regular and routine environmental inspections by RTA environmental staff shall be undertaken in accordance with the agreed PHO process.
- 7.2. An environmental auditing program for the project, including systems and compliance audits, shall be implemented in accordance with RTA auditing policy and guidelines and be included in the Construction EMP. An electronic copy of all environmental audits shall be forwarded to the RTA Environmental Services Manager Pacific Highway, after each audit.

8. Compliance tracking program.

- 8.1. The Project shall develop and implement a compliance tracking program to track compliance with the requirements of this approval. The program shall be submitted to the RTA Environmental Services Manager Pacific Highway for assessment and approval one month prior to the commencement of construction. The program shall include, but not necessarily be limited to:
 - i. provisions for periodic review of the compliance status of the project against the requirements of this approval;
 - ii. provisions for the notification of the RTA prior to the commencement of construction and prior to the commencement of operation of the project;
 - iii. provisions for periodic reporting of compliance status during construction;
 - iv. a program for environmental auditing;
 - v. mechanisms for recording environmental incidents and actions taken in response to those incidents during construction; and
 - vi. mechanisms for rectifying any non-compliance identified during environmental auditing or review of compliance.

9. Environmental induction and awareness training.

- 9.1. An environmental induction program shall be developed for the project that includes a rundown on all site environmental issues.
- 9.2. Toolbox training on new issues/ issues of concern/ near misses and other matters shall also be adopted to inform construction staff on developments in environmental matters.
- 9.3. Detailed environmental training shall be provided on more major environmental issues to required personnel, including erosion and sediment training to site personnel involved in erosion and sediment control.
- 9.4. A register of environmental awareness training shall be established and maintained at the construction site. The register shall contain details of the type of training, personnel trained, training dates and name/ qualifications of the trainer.
- 9.5. Training and the register of environmental awareness training shall be reviewed every 6 months to ascertain the need for further training.

10. Environmental incident procedure

- 10.1. An environmental incident procedure for handling all environmental incidents shall be developed as part of the CEMP and include reporting requirements to RTA, reporting to regulatory authorities, learning from environmental incidents and environmental incident avoidance training. The environmental incident procedure shall address current RTA requirements in regards to environmental incident management.

11. Ancillary facilities.

- 11.1. As identified in the REF (Section 9.13), proposed ancillary sites including batch plants, compounds, offices and stockpiles shall be determined and assessed by further environmental assessment during the detailed design and construction phases. Wherever possible, impacts from these sites shall be minimised. The location of the approved ancillary facilities shall be identified in the CEMP.

12. Access and Traffic Management

- 12.1 A traffic management plan shall be developed in accordance with RTA Specifications prior to commencement of construction and shall be implemented and maintained for the full duration of construction. This plan shall address safe and adequate passage of traffic and pedestrians around and / or through the construction site as well as safe access of residents to bus stopping points.
- 12.2. Council shall be consulted concerning the use of local roads by construction vehicles prior to the commencement of construction.

13. Erosion, sediment, water quality and chemical issues

- 13.1. A suitably qualified soil conservationist shall be consulted during the detailed design stage of the project and periodically inspect and/or audit soil conservation and water quality control works for the duration of construction, assist in the preparation of the Soil and Water Management Plan and Progressive Erosion and Sediment Control Plans, review reports and input to reports as required.

Inspections shall be on a weekly basis during the early and environmentally sensitive phases on clearing, drainage and earthworks activities and be at least on a fortnightly basis in other stages during construction. An inspection report shall be prepared by the soil conservationist after each inspection. A register of these inspections shall be maintained.

13.2. Erosion and sediment controls shall be inspected by the construction constructor at a minimum of weekly intervals and within 24 hours of all rainfall events exceeding 10mm in a 24 hour period. Regular routine maintenance shall be undertaken to de-silt sediment basins and traps, replace damaged sediment control fences and other structures, clean out sediment basins and all other maintenance requirements. A register of these inspections, maintenance and rainfall levels shall be maintained. Preferably one person shall have overall responsibility on site for erosion and sediment control issues.

13.3. Erosion and sediment control structures and requirements.

- i. A storm erosion and sediment preparedness procedure shall be prepared so that there is effective preparation and resourcing of the project site for upcoming storm events, including checking of erosion and sediment controls, maximising effectiveness of controls, checking of controls and installing temporary controls.
- ii. Soil and water management measures shall be designed and implemented in accordance with DECC requirements, the Blue Book *Volume 1 Soils and Construction: Managing Urban Stormwater* (Landcom 2004), and *Volume 2, Main Road Construction* (DECC 2008), and will include location-specific measures for erosion and sediment control, acid sulfate soils and contaminated soils. The design, sizing and location of the sediment basins shall be undertaken in consultation with the soil conservation officer and reviewed by that person and the DECC, preferably using a workshop to progress both construction and operational basin controls, including location, sizing and design.
- iii. Stormwater capacity of sediment basins after rainfall events shall be re-established quickly. This shall be a routine operation and shall occur within 5 days after rainfall events, meeting Department of Housing Managing Urban Stormwater Soils and Construction and any DECC requirements. This may involve reuse of the water for dust suppression or discharge after treatment of the water that meets specified standards and 5 day time frames.

Where discharge from sediment basins is proposed or likely, chemical dosing of sediment basins using gypsum, or an alternative flocculating agent approved by DECC and the Environmental Services Manager. Sediment basins shall be routinely flocculated to reduce turbidity impacts on downstream waterways.

- iv. A water quality monitoring program for sediment basins and discharge of other ponded water shall be implemented during the construction period to monitor discharges, and ensure that POEO limits and Environment Protection Licence limits are not exceeded. A register of discharge volumes, times and dates, water treatment (flocculation), discharge water quality (e.g turbidity), Environment Protection Licence requirements and daily rainfall levels shall be kept.
- v. Where sediment ponds have filled with sediment to 30% of their capacity they shall be cleaned in order to maintain stormwater design retention capacity.
- vi. Basins proposed as operational basins shall be constructed as early in the construction project as possible and where possible used for additional capture

of construction site runoff water.

vii. Erosion and sediment requirements of this project during the construction phase shall include the following approaches wherever possible:

- The installation and stabilisation of catch, diversion and other temporary drainage prior to the removal of topsoil and commencement of earthworks;
- The provision of contour and diversion drains across exposed areas immediately following clearing and the re-establishment and maintenance of these drains during topsoil removal and earthworks operations;
- The provision of erosion and sediment controls and sediment basins, in advance of and in conjunction with earthworks operations, to minimise contaminated run-off leaving the site;
- All works in drainage lines, including for culverts and bridges and associated scour protection, shall be installed and finalised as quickly as possible to allow stormwater to flow safely through the site and to ensure stability in these areas. A Methods Statement(s) for protection and minimisation of waterway impacts shall be prepared prior to the commencement of construction activities. The Methods Statement(s) shall be included as part of the Soil and Water Management Plan.
- The minimisation of sediment loss during construction of embankments by means such as temporary or reverse super elevation during fill placement and constructing berms along the edge of the formation leading to temporary batter flumes;
- Sediment fences constructed away from the base of all fills to capture eroded material. This shall take into account the slope of the land;
- Topsoiling and revegetation shall take place as early as possible and on a staged basis, in order to reduce erosion and water quality impacts. To improve the rate of stabilisation, sterile exotic annuals shall be used.

13.4. Site water quality monitoring program.

- i. A watercourse water quality monitoring program (routine and event based) shall be implemented during pre construction (reasonably based monitoring) and during the construction period to monitor the effectiveness of erosion, sediment and water quality controls. This monitoring program shall include monitoring at appropriate drainage lines upstream and downstream of the works on site. This program is to be approved by the Environmental Services Manager, Pacific Highway Office prior to construction commencing. Results of the water quality monitoring shall be forwarded promptly to the soil conservationist and Environmental Manager for the project to resolve any issues associated with high or low water quality monitoring results (depending on the criteria assessed).

13.5. Soil and topsoil stockpile management.

- i. Topsoil that is not contaminated by noxious weeds shall be stockpiled in acceptable stockpile locations to a maximum height of 2m for later spreading on fill batters and other areas. Stockpiled materials shall not be placed inside native vegetation protection areas. Other material may also be stockpiled at these sites, but separated from the above stockpile areas. Temporary sediment

controls below the stockpiles and diversion drainage above the stockpiles shall be completed prior to commencement of the stockpile heaps. Stockpiles shall be protected from erosion by the establishment of a cover crop within 7 days of stockpiling.

- 13.6. An Acid Sulphate Soil (ASS) Management Plan to address ASS issues shall be prepared if ASS is identified. Any identified Acid Sulphate Soils (ASS) shall be managed in accordance with the Acid Sulphate Soil Advisory Committee Acid Sulphate Soil Manual (August 1998).
- 13.7. Storage areas for fuels, oils and chemicals shall be surrounded by impervious bund walls to contain any spillage. DECC bunding and spill management guidelines shall be complied with. Storage areas for fuels, oils and chemicals shall be surrounded by impervious bund walls to contain any spillage to 120 % of the volume of the largest container in the bunded area and meet DECC requirements, including bunding requirements. All precautions shall be taken to eliminate fuel or other spills.
- 13.8. Refuelling operations shall not be left unattended whilst refuelling is in progress. Refuelling shall not occur in the vicinity of waterways or sensitive areas, unless a specific bunded structure is built to avoid discharge from the site.
- 13.9. Where required drainage swales and wetlands shall be designed and constructed to reduce sediment discharge to downstream environments. Where required, operational basins shall be designed following construction to act as macrophyte wetlands and water quality ponds. They shall be designed to contain a minimum spillage of 20,000 litres of fuel or other liquid escaping from a tanker.

14. Air Quality

- 14.1. An Air Quality and Dust Management Plan shall be developed for the construction project to reduce general air quality and dust impacts on residents and the environment and be included as part of the Construction EMP. This plan shall include and address the following conditions. The plan shall also include procedures on how to address complaints on general air quality and dust issues.
- 14.2. Dust generation during construction shall be controlled by regular on-site watering or other RTA approved methods. Adequate dust suppression resources shall be available on site to reduce dust emissions.
- 14.3. Additional options to reduce dust emissions shall be addressed in the Air Quality and Dust Management Plan:
 - include alternative timing of dust generating activities;
 - stopping of construction activities in very high wind conditions;
 - movement of these activities to less sensitive locations and consideration of quickening of work in problem areas;
 - use of wind direction to advantage;
 - speed controls developed by the RTA and contractor;
 - appropriately located stockpile and compound sites;
 - stabilisation of exposed areas as quickly as possible; and
 - quick completion of gravelling.
- 14.4. Loads with the potential to generate dust which are to be carried on public streets shall be covered during transportation.

- 14.5. An effective dust monitoring program shall be undertaken for the project to assist in reducing dust nuisance to nearby neighbours. This shall include one monitoring device at as a minimum three monitoring locations. Dust monitoring results shall be incorporated immediately into the dust control program for the project.
- 14.6. Exhaust systems of construction plant, vehicles and machinery shall be maintained in accordance with manufacturer's specifications and the exhaust emissions shall comply with the requirements of relevant legislation.
- 14.7. No open fires shall be permitted on the project.

15. Noise and vibration.

15.1. Construction noise / vibration.

- i. A Noise and Vibration Management Plan shall be developed by the contractor prior to construction commencing, to reduce noise and vibration impacts on residents and the environment. This shall be included as part of the Construction EMP. The plan shall implement construction noise mitigation measures as referred to in the REF. All reasonable practical steps shall be undertaken to reduce construction noise and vibration from the construction site in the plan.

Construction activities shall be restricted to the following hours

- Monday to Friday 7.00 am to 6.00 pm.
- Saturdays 7.00 am to 1.00 pm. Unless audible on residential premises. If audible than 8:00 am – 1:00 pm,
- No construction on Sundays or Public Holidays.

These hours of construction may only be varied in the following circumstances:

- i. any works that do not cause construction noise to be audible at any sensitive receivers; or
- ii. for the delivery of materials required outside these hours by the Police or other authorities for safety reasons; or
- iii. where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or
- iv. any other work as agreed through negotiations with potentially affected noise sensitive receivers. Any such agreement shall be recorded in writing and a copy kept on site for the duration of the works; or
- v. where the work is identified in the Construction Noise and Vibration Management Sub Plan and approved as part of the CEMP, in consultation with DECC; or
- vi. as agreed by the DECC.

Local residents and the DECC shall be informed of the timing and duration of work approved under items (iv) and (v) at least 48 hours before that work commences

Where agreed, works undertaken outside the above hours shall be those activities that generate the least amount of noise and vibration. Activities outside these hours will comply with the procedures outlined in the RTA's Environmental Noise Management Manual 2001, Practice Note vii – Roadwork's outside normal working hours.

- ii. The community directly affected by the roadworks shall be consulted regularly during all phases of construction in respect of noise and other impacts.
- iii. Other actions and considerations shall be included in the Noise and Vibration Management Plan:
 - Identify construction locations where construction noise is most intrusive and develop strategies to reduce impacts for these areas;
 - Monitor and record construction noise on a regular basis. If noise levels exceed EPA guideline levels, appropriate and practical action shall be implemented to minimise noise impacts. This shall include regular monitoring of the maximum noise levels from individual items of plant;
 - Consider acoustical issues in the siting of work compounds, vehicle and plant parking areas, materials stockpiles and equipment storage areas;
 - Maintain haul roads to minimise noise generation due to road condition;
 - Where noise walls/ barriers are to be constructed, these shall be constructed as early as possible in the construction program to reduce noise impacts on residents.
 - Where feasible, conduct any rock breaking at the best available locations on the project to reduce impacts on residents/owners.
- iv. All construction equipment is to be well maintained.

15.2. Operational Noise Issues

- i. A noise monitoring study shall be undertaken within 12 months of the opening each completed stage of the project to traffic to review operational noise levels in terms of criteria and noise goals established in the Environmental Criteria for Road Traffic Noise (EPA 1999) and the Environmental Noise Management Manual' (RTA, 2001).; If the measured levels exceed the specified operational noise criteria for this project then additional noise mitigation measures shall be provided if practical, cost effective and acceptable to the affected residents/ owners. Any noise mitigation measures shall be developed in consultation with affected residents/owners.

16. Waste minimisation, reuse and recycling.

- 16.1. The construction site shall be maintained in a clean and tidy condition. Covered bins shall be provided for waste disposal and the covers shall be kept in place except when the bin is being used for deposit or removal of waste. Waste from the site office and compound shall be disposed of in accordance with the requirements of relevant authorities (including local government and the DECC). Waste shall be managed and disposed of in compliance with relevant legislation and Regulation, DECC and local authority requirements. Measures to reduce, re-use and recycle waste products including soil, road pavement materials, concrete, oils and vegetation shall be implemented.
- 16.2. A schedule of all hazardous materials (as defined by the Waste Avoidance and Resource Recovery Act 2001) in use on the construction project shall be maintained and recorded for the duration of the construction. Copies of licences or licence numbers (under the Waste Avoidance and Resource Recovery Act 2001) shall be obtained for the chosen transporter of industrial/hazardous waste, the chosen industrial/hazardous waste treatment facility and the chosen waste disposal facility prior to moving.

- 16.3. Septic waste shall be disposed of in Council approved absorption/ transpiration trenches or removed from the site to an approved disposal point.

17. Flora and fauna.

- 17.1. The extent of clearing shall be minimised and the limits of clearing shall be clearly marked in the field prior to the commencement of site works, and other land holder boundaries shall be clearly marked to identify these areas. Areas of vegetation for protection shall not be used as stockpile sites or vehicle parking areas. Significant remnants or individuals of native vegetation shall be appropriately protected for the duration of construction and marked prior to construction commencing. All personnel taking part in construction activities shall be instructed with regards to the importance of clearing limits and remnants/individual trees of significant value.
- 17.2. The procedures for fauna surveying and fauna rescue during clearing shall be developed in consultation with the RTA Environmental Services Manager Pacific Highway and the DECC. Fauna surveying shall commence within two weeks prior to any clearing of mature vegetation and also immediately prior to the commencement of clearing of any area of mature vegetation. Fauna surveying and inspections of the vegetation to be cleared shall be undertaken by a qualified ecologist, in order to locate and move any native fauna to safe habitat. All reasonable measures shall be taken to ensure that no protected fauna are harmed or placed at risk during the course of construction activities. WIRES and DECC contact details shall be kept on site.
- 17.3. Vegetation removed during the implementation of the project shall be reused whenever possible. This shall include millable/ saleable timber, for fauna purposes, for use for mulching landscaped areas (exotic species such as camphor laurel shall not be chipped) and consideration of the use vegetation mulch to complement sediment capture on the project.
- 17.4. Seed and planting material used for rehabilitation on the project shall be from species native to the region and wherever feasible within 25 km of the project.
- 17.5. An urban and regional design / landscape and visual assessment shall be undertaken in accordance with the Pacific Highway Urban Design Principles during the detailed design phase of the project to minimise the impact of the upgrade upon the surrounding environment
- 17.6. During detailed design and prior to installation of culverts and the bridge, there shall be consultation with NSW Fisheries on minimisation of impacts on fish passage. The impacts of construction of waterway crossings on aquatic organisms and marine vegetation shall be minimised.
- 17.7. During detailed design and prior to installation of fauna structures, there shall be consultation with DECC in regards to the design and location of fauna structures.
- 17.8. Any culvert structures that are required to also serve as a fauna underpass shall be designed to provide dry passage for fauna. Scour protection shall not impede fauna movement

18. Archaeology and Heritage

- 18.1. If any Aboriginal archaeological sites or artefacts which are not covered by Consent to Destroy permits are discovered during construction then work shall

cease immediately in the vicinity and the RTA's Aboriginal Program Coordinator and DECC shall be contacted promptly for further advice and action.


- 18.2. If any sites or relics of suspected non-Aboriginal heritage value are discovered during construction, work shall cease immediately in the vicinity and the Heritage Office of NSW shall be contacted for further advice and action.

RECOMMENDATION

It is recommended that the proposed upgrade between Failford Road to Tritton Road as described in the Failford Road to Tritton Road Review of Environmental Factors proceed, subject to implementation of all environmental controls and mitigation measures detailed in the REF, the Submissions Report and the above Conditions of Approval.

The REF approval shall remain current for five years from the date of approval, at which time it shall lapse if construction works have not begun.

Prepared by:

 30/09/08
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Approved by:


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30/9/08