MAJOR PROJECT ASSESSMENT: Pacific Highway Upgrade Wells Crossing to Iluka Road – Glenugie Section

Director General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

November 2009

Published November 2009
NSW Department of Planning
www.planning.nsw.gov.au

Cover: Existing Pacific Highway through Glenugie State Forest - courtesy of RTA

CONTENTS

EXECUTIVE SUMMARY

The NSW Roads and Traffic Authority (the Proponent) has sought the Minister for Planning's approval for the upgrade of the Glenugie section of the Wells Crossing to Iluka Road project, which is a component of the Government commitment to upgrade the existing Pacific Highway between Hexham and the Queensland border. The proposal consists of approximately 7 kilometres of dual carriageway starting at Franklins Road and extending north to Eight Mile Lane at Glenugie, about 15 km south of Grafton.

The proposed upgrade includes a bridge over the highway at Franklins Road, retention of the existing highway as a local service access road and a new forestry access road into Glenugie State Forest.

The key benefits of the proposal include:

- a safer section of highway;
- greater transport efficiency and safety for intra-state and inter-state movements;
- supporting growth and the long-term sustainability of the regional economy;
- improved amenity along the existing Pacific Highway;
- reducing financial costs associated with travel on the Pacific Highway; and
- reducing greenhouse gas emissions in the longer term and energy consumption relative to the base case of no upgrade.

The capital cost of the initial stage of the proposal is approximately $60 million.

The Department received 9 submissions on the project including 3 from Government agencies, 5 from special interest groups and 1 from a member of the public. Issues raised included ecology, hydrology, heritage, noise and economic impacts.

The proposal has a direct impact on vegetation and fauna habitats by the clearing of 85 ha of native vegetation in the Glenugie State Forest. This includes 5.3 ha of Subtropical Coastal Rainforest and 36 ha of Square-fruited Ironbark (*Eucalyptus tetrapleura*) habitat and foraging habitat for a number of threatened fauna species. The Glenugie State Forest provides a connecting link from State Forests and a national park to the east and State Forests and open forest habitats to the west.

The Department has assessed the Proponent's Environmental Assessment and Submissions Report (including revised Statement of Commitments) and taken into consideration issues raised by the local community and government agencies. The Department is satisfied that the environmental assessment has considered the key issues to the greatest extent practicable, that mitigation measures are appropriate and that the residual impacts of the proposal are acceptable and manageable. Notwithstanding, it is understood that further refinement of the proposal will occur during detailed design which are likely to result in further reduced impacts regarding flora and fauna impacts, creek hydrology and construction and operational noise. For these reasons, the Department recommends approval of the project.

The Department has recommended conditions of approval which define performance standards and targets which the project must achieve as well as monitoring requirements which are chiefly aimed at measuring the effectiveness of the Proponent's mitigation measures. These include noise, ecological and water quality monitoring.

In summary, the Department is of the opinion that on balance the project is justified and in the public interest. It is anticipated that the Proponent's Statement of Commitments and the recommended conditions of approval, implemented in parallel should ensure that the project is designed, constructed and operated to meet acceptable environmental performance and amenity limits.

1. BACKGROUND

1.1 Pacific Highway Upgrade Program

The Pacific Highway Upgrade Program is one of the largest infrastructure projects in the State and is a joint commitment between the State and Commonwealth governments to provide a continuous four lane carriageway from Hexham to the Queensland Border (see Figure 1). Both governments are providing $3.6 billion as part of the Nation Building Program and Building Australia Fund to continue the upgrade of the Pacific Highway over the next five years to mid 2014.

The objectives of this program are to:

- significantly reduce road accidents and injuries;
- improve transport efficiency by reducing travel times and freight costs;
- develop a route that involves the community and considers their interests;
- provide a route that supports economic development;
- manage the upgrading of the route in accordance with Ecologically Sustainable Development (ESD) principles; and
- provide the best value for money.

As of October 2009, approximately 44% of the Pacific Highway has been upgraded (300 km) with a further 54 km under construction and 50 km with contracts awarded or tenders invited. Recent construction activities have been concentrated south of Port Macquarie and west of Ballina.

The proposal by the NSW Roads and Traffic Authority (the Proponent) to upgrade a section of the Pacific Highway at Glenugie on the NSW mid north coast is part of this program. The proposed Glenugie upgrade is about 7 km in length and traverses the Glenugie State Forest.

The proposal is part of the larger Wells Crossing to Iluka Road upgrade (23 km south of Grafton to 56 km north of Grafton). A concept design for this project was announced in January 2009.

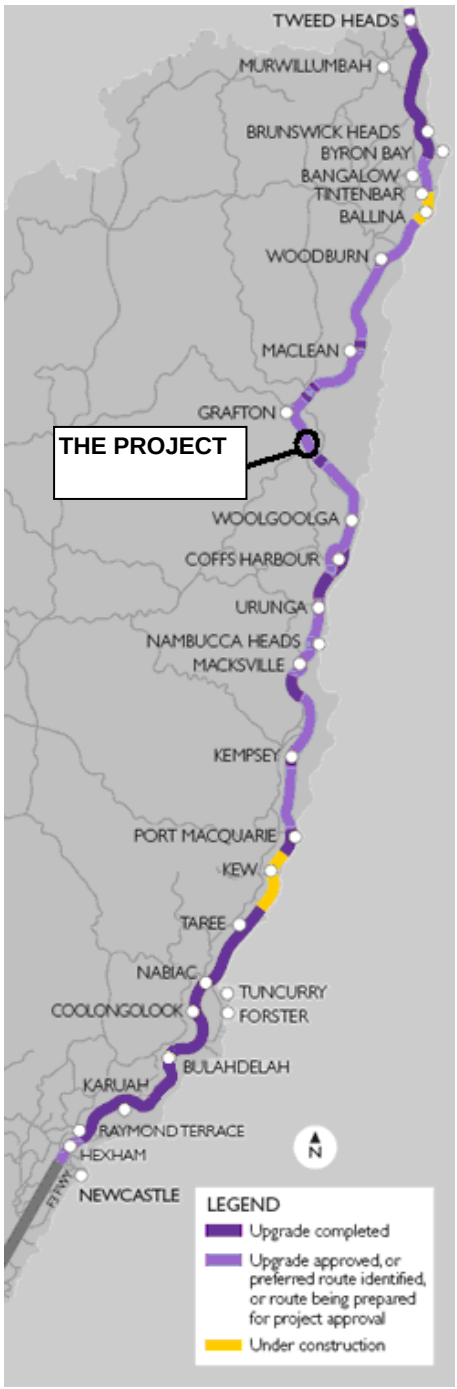

Figure 1: Overview of the Pacific Highway Upgrade Program (as at October 2009)

1.2 Location and Land Use

The project traverses the Glenugie State Forest within the Clarence Valley local government area. The area is characterised by forestry operations and rural and rural residential development to the north west. The main agricultural land uses are grazing and dairying and horticultural activities and orchards/ greenhouses.

2. PROPOSED DEVELOPMENT

2.1 Project Description

The preferred route for the project extends for approximately 7 km starting to the south of Franklins Road and extending north to Eight Mile Lane, approximately 15 km south of Grafton and 68 km north of Coffs Harbour. At the northern end of the upgrade, the concept design for the Wells Crossing to Iluka Road project diverges to the northeast. A new link road would connect the upgrade to the existing Pacific Highway. The proposed alignment is located in a corridor to the east of the existing highway (see Figure 2).

Key components of the proposal include:

- four-lane divided carriageways (two lanes each way), with a wide median allowing for the future addition of a third lane in each direction;
- connection to the existing highway, at the southern end to the south of Franklins Road and at the northern end to the south of Eight Mile Lane. The northern tie in would be via a 2-lane road 1.5 km in length;
- overpass for Franklins Road to the existing highway;
- retention of the existing highway for local traffic;
- new forestry access road between Eight Mile Lane and Lookout Road to provide access to Glenugie State Forest; and
- delivery of the project in discrete stages.

Construction of the proposal may be undertaken in its entirety or in stages. The likely initial stage would comprise a combination of arterial and motorway style roads and would include:

- a section of motorway style road about 2.5 km in length at the northern end. In this section the existing highway would become a local access road;
- a section of arterial style road about 4 km in length at the southern end, to carry southbound traffic. In this section the existing highway would carry northbound traffic; and
- at-grade intersection would connect Franklins Road to the existing highway and the upgrade.

The project requires the relocation of a number of public utilities and services, and works on the eastern side of the existing highway when it is used as the northbound carriageway.

The project would require acquisition of about 100 ha of Glenugie State Forest, however, no private properties are required to be acquired.

The initial stage of the proposal has an estimated capital cost of $60 million and is anticipated to take approximately 18 months to construct.

2.2 Project Need and Justification

The Environmental Assessment (EA) states that the Pacific Highway Upgrade Program is being undertaken to eliminate black spots, improve road safety conditions and reduce overall journey times along its length.

The Glenugie upgrade is consistent with the Pacific Highway Upgrade Program as it would provide a higher standard of road with improvements in road safety and travel efficiency. The proposal would improve road safety by upgrading a 2-lane highway with poor road geometry, narrow shoulders and traffic hazards to a high standard 4-lane divided road.

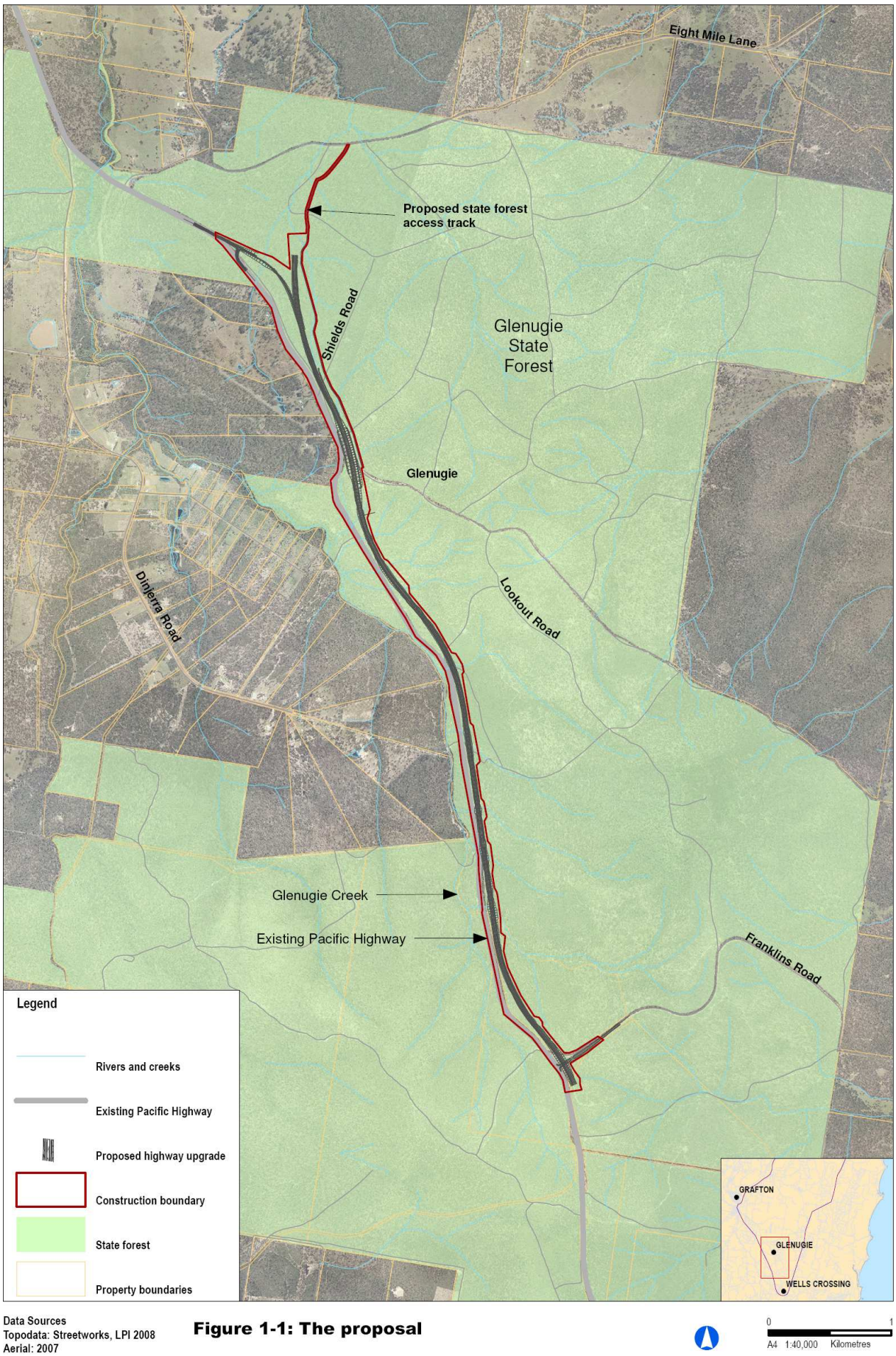

Figure 2: Proposed Upgrade Alignment *(Source: Figure 1.1 Appendix D, EA Vol 2, RTA 2009)*

The *Mid North Coast Regional Strategy* (2009) anticipates the population of the Mid North Coast[1] to grow from 330,000 in 2006 to 424,600 in 2031, an increase of 94,000 people (or 28% increase in the period 2006–31). The Mid North Coast extends from Iluka in the north to Hawks Nest/ Tea Gardens to the south, and west to Dorrigo and Stroud. It includes the inland regional centres of Grafton and Taree and the coastal centres of Port Macquarie and Coffs Harbour. Population growth is expected to occur predominately within the coastal areas: Coffs Harbour, Hastings-Port Macquarie and Great Lakes local government areas. The Proponent notes that increases in population generally leads to increased residential and commercial development and consequent increased traffic demand on local and regional roads.

This predicted growth is likely to result in an increased pressure on the existing regional road network, which currently comprises a single carriageway road with one lane in each direction through Glenugie State Forest. The existing highway is further constrained by:

- the lack of passing opportunities, with overtaking lanes provided in some locations;
- existing posted speed limit of 100 km/h;
- poor horizontal and vertical geometry and substandard curves; and
- narrow shoulders and traffic hazards.

The Pacific Highway is the major north-south corridor in the Mid North Coast and this section of the highway provides an important link for New England Highway/ Gwydir Highway/ Summerland Way traffic to the coastal centre of Coffs Harbour. The majority of traffic on the highway at Glenugie passes through the area without stopping. There are a small number of local trips accessing rural residential development in Shields Road and Franklins Road. Logging traffic also accesses the Glenugie State Forest but daily traffic volumes from the forest are low.

The highway functions as an important regional road linking the inland and coastal regional centres. The highway also has significant traffic flows during the peak holiday periods with visitors to the tourist attractions in the region.

2.3 State Government Policies

The proposal is consistent with State Government policy and strategies. These include:

- the *NSW State Plan 2006*, which includes the key priorities of safer roads and maintaining and investing in infrastructure, with travel times between Hexham and the Queensland border as a key measure of the latter;
- the *NSW State Infrastructure Strategy 2006-7 to 2015-16*, which includes the Pacific Highway Upgrade Program; and
- the *Mid North Coast Strategy 2009*, which cites the Pacific Highway Upgrade Program as a key factor in improving regional accessibility.

[1] The Mid North Coast Regional Strategy applies to the eight local government areas of Clarence Valley, Coffs Harbour, Port Macquarie-Hastings, Great Lakes, Greater Taree, Bellingen, Nambucca and Kempsey

3. STATUTORY CONTEXT

3.1 Major Project and Critical Infrastructure

On 5 December 2006, the Minister declared the Pacific Highway Upgrade Program (including the Wells Crossing to Iluka Road segment): in accordance with section 75B(1) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to be a project to which Part 3A of the EP&A Act applies, and in accordance with section 75C of the EP&A Act to be Critical Infrastructure.

The project requires the Minister's approval.

3.2 Permissibility

The proposal is located on land zoned 1(f) Rural (Forests) under the *Ulmarra Local Environmental Plan 1992.* The zone objectives enables development for other purposes for which land is not available elsewhere and the use will not affect forestry operations

However, clause 94(1) of *State Environmental Planning Policy (Infrastructure) 2007* permits on any land development for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent. Consequently, the proposal is permissible.

3.3 Relevant Environmental Planning Instruments

Under section 75R(2) of the EP&A Act, State Environmental Planning Policies (SEPP) only apply to critical infrastructure projects where the relevant SEPP expressly provides that it applies to a particular project. There are no SEPPS that expressly apply to the Glenugie upgrade project.

3.4 Objects of the Environmental Planning and Assessment Act 1979

The Minister is required to consider the objects of the EP&A Act when decisions are made under the Act. These objects are detailed in Section 5 of the Act, and include:

'The objects of this Act are:

- *(a) to encourage:*
  - *(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
  - *(ii) the promotion and co-ordination of the orderly and economic use and development of land,*
  - *(iii) the protection, provision and co-ordination of communication and utility services,*
  - *(iv) the provision of land for public purposes,*
  - *(v) the provision and co-ordination of community services and facilities, and*
  - *(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
  - *(vii) ecologically sustainable development, and*
  - *(viii) the provision and maintenance of affordable housing, and*
- *(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and*
- *(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.'*

The objects of most relevance to the Minister's decision on whether or not to approve this project are those under Section 5(a) (ii), (vi) and (vii).

The Department is satisfied that the project promotes the orderly and economic use and development of land. The proposal would result in the minor loss of State Forest land (approximately 2% of the total area of Glenugie State Forest). The reduction in the available timber resource would result in a minor loss of productive timber and a minor impact on the viability of forestry businesses in the area. The improvement in road safety and transport efficiency would assist the movement of passengers and goods on a major north-south transport corridor.

The Department has considered the objectives of ecologically sustainable development (ESD) in the assessment of the project. This assessment integrates all significant economic and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences. The Proponent has considered a number of alternative routes, including the alternative of not proceeding. The Proponent has concluded the proposal is consistent with the objectives of Australian and NSW government planning strategies and policies, the objectives of the PHUP and the social and economic benefits of the upgraded highway.

3.5 Commonwealth Legislation

An approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required where a project may have a significant impact on a matter of national environmental significance (threatened species and migratory species) or potential habitat. The Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA) determined on 13 August 2009 the proposal was a controlled action and required an approval under the EPBC Act before it could proceed.

3.6 Minister's Approval Power

The EA was publicly exhibited for 31 days from 12 August 2009 until 11 September 2009. The exhibition was advertised in the *Sydney Morning Herald, the Daily Telegraph* and the *Grafton Examiner*. The EA was exhibited on the Department's website; at the Department's Sydney office; at the Proponent's North Sydney and Grafton offices; and at the Clarence Valley Council's Grafton office.

Submissions were invited in accordance with section 75H of the EP&A Act. The Department has met all of its legal obligations in making the EA publicly available, so that the Minister can make a determination regarding the project.

It is also noted that the EA submitted in support of the proposal adequately addressed the Director General's Requirements issued for the project application.

4. CONSULTATION AND ISSUES RAISED

4.1 Introduction

During the exhibition period, the Department received 9 submissions on the project: 3 from public authorities, 5 from local special interest/ community groups and 1 from a member of the public.

The special interest groups included the Clarence Environment Centre, Climate Change Australia – Clarence Branch, Yuraygir Landcare Group, National Parks Association of NSW – Clarence Valley Branch and Clarence Valley Conservation Coalition.

4.2 Submissions from the General Public and Special Interest Groups

The public submissions raised concerns about various aspects of the proposal.

Key issues raised in the submissions are summarised below and further addressed in the Proponent's Submissions report and section 5 of this report:

Ecological
- adequacy of ecological assessment and impacts on threatened and endangered flora species;
- existing highway corridor should be used rather than a new corridor through the State Forest;
- over-estimation of existing Eucalyptus tetrapleura population in the area; and
- justification for clearing vegetation for a 150 metre wide corridor.

Traffic and transport
- need for the motorway from projected increase in traffic volumes will not materialise because of reduction of future oil and energy supplies;
- other sections of the Pacific Highway have a higher priority for upgrade than the Glenugie section; and
- funds should be applied to rail infrastructure and movement of freight by rail.

Air quality impacts
- greenhouse gas emissions from construction and operation of the project.

4.3 Submissions from Public Authorities

Submissions were received from the Department of Environment, Climate Change and Water, Industry and Investment NSW and NSW Office of Water. The issues raised by these public authorities are summarised below:

The Department of Environment, Climate Change and Water (DECCW) raised no objection but provided a number of comments relating to mitigation measures in the EA and recommended that they be included as a Statement of Commitment, or be considered for inclusion as a draft condition of approval. In particular, DECCW raised a number of issues/ clarification in relation to environmental management plans, Aboriginal cultural heritage, ecology, channel structures and operational and construction noise management.

Industry and Investment NSW (I&I NSW) raised no objection but provided a number of comments regarding the timber resource, channel structure, construction impacts and environmental management plans.

The NSW Office of Water (NOW) raised no objection but provided comments on water supply and riparian areas.

4.4 Submissions Report

The Department required the Proponent to prepare a Submissions Report to address the issues raised. The Submissions Report responded to issues raised in submissions on the EA and included a revised Statement of Commitments. A copy of the report is attached in Appendix C.

The Proponent has made a minor amendment to the project following further detailed design development. This includes an additional ancillary site for a construction compound and concrete/ asphalt batching plant at the northern end of the project. The Proponent has also undertaken an ecological assessment of the impact of the proposal on the Little Lorikeet, which was listed as vulnerable under the *Threatened Species Conservation Act 1995* subsequent to the field work and preparation of the ecology working paper for the project.

The Department considers that these amendments are acceptable and do not significantly change the nature and scope of the original proposal nor will they result in additional adverse impacts. Consequently a Preferred Project Report was not required for the project.

The Submissions Report was forwarded to the DECCW, I&I NSW and NOW for comment. Agencies comments have been taken into consideration in preparing the Department's recommended conditions of approval.

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

5.1 Key Issues

Key issues raised in the submissions in response to the public exhibition of the project and/or identified during the Department's assessment included, in no particular order:

- ecological impacts; and
- hydrological impacts.

A range of other issues, including heritage, noise, economic impacts and environmental management are briefly considered at the end of this section. All other issues raised in submissions are considered to have been adequately addressed in the EA (including technical papers), the Proponent's Submissions Report and/or revised Statement of Commitments and therefore do not require further consideration.

5.2 Ecological Impacts

Issue

The proposal is located to the east of the existing highway and wholly within the Glenugie State Forest. The forestry land extends to the east and west, totalling over 3400 ha in area. The Glenugie State Forest has been identified as a key habitat, linking the coast (via Newfoundland State Forest and Yuraygir National Park) to the west and into Bom Bom State Forest and dry open forest habitats on freehold land in the Coutts Crossing and Shannondale areas.

The Proponent has identified a loss of 85 ha of native vegetation as a result of the project, including 5.3 ha of Subtropical Coastal Floodplain Forest, approximately 36 ha of Square-fruited Ironbark (*Eucalyptus tetrapleura*) habitat and 3 ha of Weeping Paperbark (*Melaleuca irbyana)* habitat. The vegetation is considered to have high conservation value. The direct impact on vegetation is summarised in Table 1.

Vegetation Community / Type	Area / estimated number of individuals impacted
Vegetation communities	
Map Unit 1 – Spotted Gum – Ironbark Forest	33.7 ha
Map Unit 2 - Spotted Gum – Square-fruited Ironbark Forest	21.7 ha
Map Unit 3 – Grey Box – Spotted Gum Forest	19.2 ha
Map Unit 4 – Scribbly Gum – Bloodwood Forest	-
Map Unit 5 – Swamp Turpentine – Paperbark Riparian Forest	5.3 ha
Map Unit 6 – Narrow-leaved Red Gum – Paperbark Woodland	5.1 ha
Map Unit 7 – Forest Red Gum – Grey Box Forest	-
Total vegetation impact	**85 ha**
EEC	
Subtropical Coastal Floodplain Forest	5.3 ha
Threatened flora species	
Eucalyptus tetrapleura	36 ha / 6156 individuals
Melaleuca irbyana	3 ha / 5 -10 individuals

Table 1: Direct Impact on Vegetation *(Source: Table 5-1, Technical Working Paper Ecology, RTA 2009).*

Square-fruited Ironbark

Square-fruited Ironbark (*Eucalyptus tetrapleura*) is listed as a vulnerable species under the Commonwealth *Environment Protection Biodiversity Act 1999* (EPBC Act) and the NSW *Threatened Species Conservation Act 1995* (TSC Act). *Eucalyptus tetrapleura* occurs in coastal lowlands and foothills between Glenreagh to the south and Casino to the north, within an area of about 100 km north-south and 50 km east-west. The current distribution is patchy and the full extent of the population is not known.

The *E. tetrapleura* in the upgrade area forms part of a larger contiguous population of *E. tetrapleura* (Glenugie population) extending to the south, east and west, covering an area of about 1010 ha. The Glenugie population contains an estimated 147,000 trees of varying age classes, and is one of about 50 sub groups of the regional *E. tetrapleura* population, which numbers between 150,000 to 250,000 trees. The extent of the regional population is shown in Figure 3.

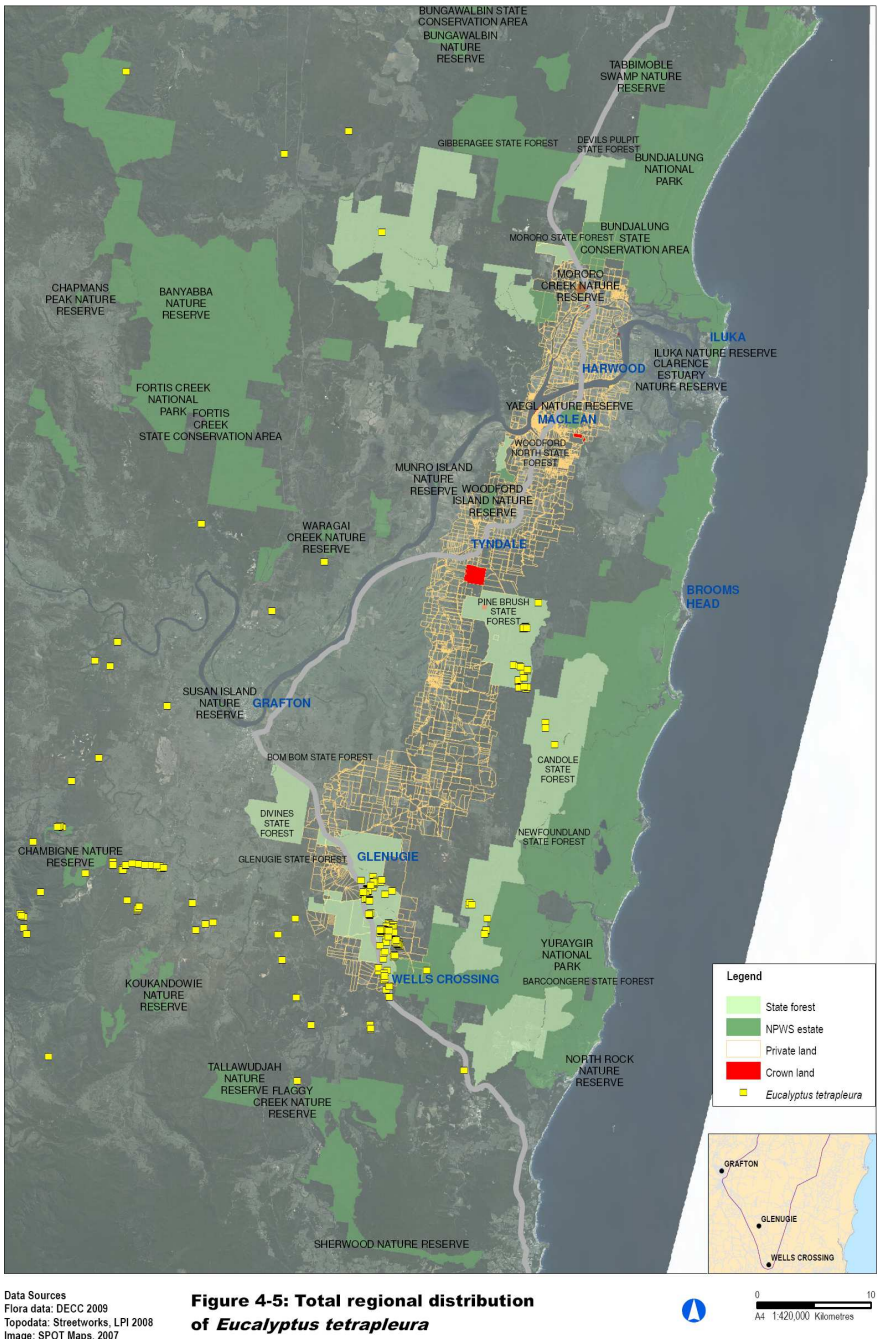

Figure 3: Regional Distribution of Eucalyptus Tetrapleura *(Source: Figure 4-5, Technical Working Paper Ecology, RTA 2009).*

The proposal would result in the removal of 36 ha of *E. tetrapleura* habitat and approximately 6156 individual trees, or 4.2% of the Glenugie population and between 2.5% and 3.6% of the regional population. The extent of *E. tetrapleura* in the project area is shown in Figure 4.

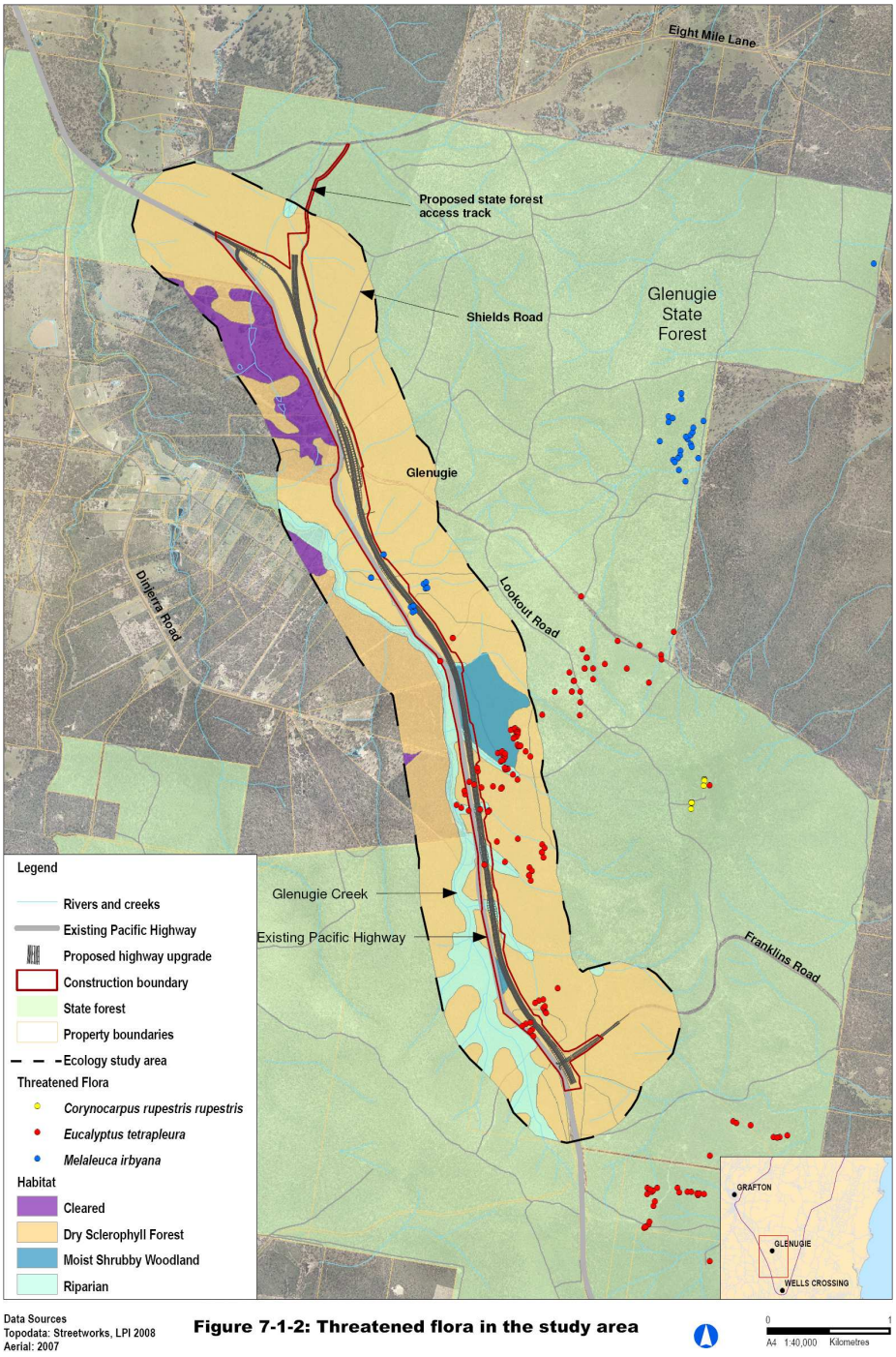

Figure 4: Threatened Flora *(Source: Figure 7-1-2, EA Vol.1, RTA 2009)*

The loss of the *E. tetrapleura* habitat has the potential to impact on the local distribution of the species by removing part of the gene pool and further fragment the populations on the western and eastern sides of the upgrade. However, the Proponent states the proposal is unlikely to significantly impact the local gene pool as gene flow would continue across the existing highway and upgrade due to the high mobility of some pollinator species such as insects, birds and bats, and through wind dispersal of pollen. Inbreeding due to the fragmentation of the population is unlikely to occur as only a small proportion of the population would be impacted and the population on the western side is large enough for the

gene pool to continue to successfully reproduce without causing inbreeding depressions. The Proponent has suggested that the removal of habitat for pollinator species is unlikely to have a significant impact as large populations of potential pollinator species remain in the surrounding forest. However, the Proponent notes that indirect impacts may occur on the eastern population through increased edge effects such as weed invasion and altered hydrology.

The Proponent has committed to develop a biodiversity offset strategy with DECCW and DEWHA to compensate the removal of *E. tetrapleura* habitat. The Proponent has identified areas of *E. tetrapleura* on nearby forestry land and private land which may be suitable as offset areas. The Proponent has also committed to undertake seed collection and propagation of *E. tetrapleura* for planting in suitable habitat adjacent to the upgrade and develop a monitoring strategy to assess the effectiveness of the mitigation measures.

Weeping Paperbark

Weeping Paperbark (*Melaleuca irbyana*) is listed as an endangered species under the TSC Act. The proposal would result in the removal of about 3 ha of *M. irbyana* habitat and between 5 and 10 individual trees. The ecological assessment recorded 31 *M. irbyana* trees in the upgrade area and a larger population of 114 individuals about 2.5 km to the northeast (see Figure 4). The total population of *M. irbyana* in Glenugie numbers around 145 trees and the proposal would potentially remove between 3 and 7% of this population, and between 16 and 32% of the population in the upgrade area.

Apart from the removal of the individual *M. irbyana* trees, the proposal would fragment remaining trees in the upgrade area with individuals retained on either side of the upgrade. There is also potential for *M. irbyana* habitat to be affected through changes to the hydrological and nutrient regimes, and further weed invasion through increased edge effects.

The Proponent has committed to mitigate the loss of *M. irbyana* trees by developing a suitable offset with DECCW and the Department. The Proponent would also undertake seed collection and implement a propagation program to replant *M. irbyana* in suitable habitats in the road boundary. Individual trees impacted by the proposal would also be translocated into adjacent habitats in the road boundary.

Endangered Ecological Communities

The proposal would result in the clearing of approximately 5.3 ha of Subtropical Coastal Floodplain Forest, which is an endangered ecological community (EEC) under the TSC Act. The Subtropical Coastal Floodplain Forest vegetation is present along some watercourses in the upgrade area (see Figure 4).

The loss of 5.3 ha of Subtropical Coastal Floodplain Forest represents a relatively small proportion (0.25%) of the total remaining area of this EEC in the Glenugie area, approximately 2,211 ha in a 10 km radius of the project area.

The Proponent has committed to include areas of this EEC in a biodiversity offset strategy to be developed for the proposal. The strategy may include protection of larger high quality areas of this vegetation community as well as rehabilitated and retained areas of this vegetation in the road boundary.

Fauna Species

Surveys undertaken as part of the ecological assessment of the proposal recorded 114 fauna species in the area. Of the species recorded, seven were threatened species:

- Black-chinned Honeyeater (eastern subspecies) (*Melithreptus g.gularis);*
- Brown Treecreeper (eastern subspecies) *(Climacteris picumnus victoriae);*
- Brush-tailed Phascogale *(Phascogale tapoatafa);*
- Grey-headed Flying Fox *(Pteropus poliocephalus);*

- Little Bentwing-bat *(Miniopterus australis);*
- Rufous bettong *(Aepyprymnus rufescens);* and
- Yellow-bellied Glider *(Petaurus australis).*

All the threatened fauna species are listed as vulnerable under the TSC Act. The Grey-headed Flying Fox is also listed as vulnerable under the EPBC Act.

The results of fauna surveys and review of previous fauna records indicate that a further 9 threatened species under the EPBC Act and/or TSC Act have the potential to occur in the area.

Subsequent to the preparation of the EA, the NSW Scientific Committee made a Final Determination to list the Little Lorikeet (*Glossopsitta pusilla*) as a vulnerable species under the TSC Act. Consequently the Proponent made an assessment of the impact of the proposal on the Little Lorikeet in the Submissions Report.

The fauna assessment concluded the proposal has minimal impact on these threatened species as the foraging and roosting habitat that would be lost is minor compared to the available habitat in the surrounding State Forest. The Proponent states the proposal would impact on the fauna habitat indirectly through edge effects, increased runoff and weed invasion on remnant vegetation and potentially habitat fragmentation affecting fauna corridors.

The Proponent has committed to minimise the impacts on fauna movement across the upgrade and habitat connectivity by providing a number of fauna crossing structures at strategic locations along the upgrade. The proposed crossing structures consist of 11 underpasses (dedicated, combined or incidental structures such as a pipe or culvert) for terrestrial fauna and 4 overhead rope crossings for arboreal fauna (three for the upgrade and one on the existing highway). The proposed mitigation measures include pre-clearance surveys and protocols for clearing of vegetation, particularly habitat trees and rehabilitation of disturbed areas and retained remnant vegetation.

Submissions

Concerns were raised by all five special interest groups about the clearing of native vegetation for the proposal, adequacy of the flora and fauna impact assessment and justification for an alignment through the State Forest.

DECCW commented on:

- mitigation measures to enable fauna to cross the highway;
- protection of threatened flora at the edge of the project footprint;
- development of a rehabilitation/ translocation strategy for *Melaleuca irbyana*; and
- pre-clearance surveys and monitoring post construction.

Consideration

Preferred Route

A number of submissions were concerned the proposal traversed State Forest land and believed the upgrade should be restricted to the existing highway corridor. The Proponent has undertaken further investigations on the preferred route through Glenugie State Forest, considering an alignment:

- 900 m to the east of the preferred route (Option 1); and
- 250 m west of the preferred route and west of the existing highway (Option 2).

The investigations considered Option 1 would have a reduced impact on *E. tetrapleura* but would result in further fragmentation of remnant vegetation, have greater edge effects and affect habitat quality, connectivity and fauna movement. Overall this option would have greater impacts on Glenugie State Forest. The alternative alignment to the west of the

existing highway (Option 2) would impact a substantial population of *E. tetrapleura* and have a greater impact on Glenugie Creek and the EEC Subtropical Coastal Floodplain Forest vegetation. Option 2 also impacted on private property to the west of the highway and would have lower amenity benefits compared to the preferred route.

The Proponent concluded the alternative route alignments had no clear advantages over the preferred route. The Department is satisfied the preferred route of the upgrade to the east of the existing highway and within Glenugie State Forest has the least impact on threatened flora species and EEC and fragmentation of threatened fauna foraging and roosting habitat, compared to the alternative alignments. The preferred route is consistent with the objectives of the Pacific Highway Upgrade Program, in particular:

- ecologically sustainable development – minimises impacts on sensitive habitats and native vegetation;
- route involves community and considers their interests – minimises physical and traffic impacts such as noise, intrusion and loss of access and minimises impacts on Aboriginal and non-Aboriginal heritage; and
- reduces road accidents – route improves road safety and reduces conflict between regional and local traffic.

Biodiversity Offsets

The Proponent has committed to develop a Biodiversity Offset Strategy with the relevant agencies to offset the clearing of 85 ha of native vegetation which provides habitat for threatened flora and fauna species and an EEC. The Proponent has identified suitable habitats in the area on privately owned and forestry land which could offset the clearing of the high conservation value vegetation for the proposal.

DECCW supports the Proponent's commitment to develop a Biodiversity Offset Strategy and suggested new or reworded Statement of Commitments to reinforce mitigation measures in relation to vegetation clearing (pre-clearance surveys and flagging of threatened species), monitoring of mitigation measures and weed management.

I&I NSW requested that the Proponent consult with Forests NSW on offsets that may involve forest land and installation of nest boxes in the State Forest.

DEWHA has determined the project is a controlled action under the EPBC Act and has issued its draft recommendation report. The recommended conditions of approval requires the Proponent to develop management plans to minimise impacts on *E. tetrapleura* and manage the remnant habitat on the western side of the highway and offset the loss of *E. tetrapleura* by acquiring and protecting existing habitat and land with suitable habitat for the establishment of *E. tetrapleura*. DEWHA also requires the Proponent to provide an offset for the loss of foraging habitat for the Large-eared Pied Bat, Grey-headed Flying Fox, Regent Honeyeater and Swift Parrot. The DEWHA report concludes the impacts on the threatened species and loss of foraging habitat will not be unacceptable, provided the recommended conditions are implemented. The Proponent has advised that DEWHA's draft conditions are generally acceptable but that further discussions would occur on the quantum and location of the biodiversity offset areas.

The Department is satisfied that the Proponent has minimised the extent of vegetation clearing required for the project to the greatest extent possible, and the residual impact on vegetation is unavoidable. This impact is considered justified in the context of the need to address traffic safety concerns with the current configuration of the Pacific Highway at this location. The Proponent through the detailed design of the proposal would undertake design refinements to further reduce impacts on native vegetation.

The Department notes that in recent Pacific Highway upgrade projects, the Proponent has made commitments to provide an offset for residual biodiversity impacts, however no formal

strategy was proposed as part of those projects. The Proponent has adopted a process to address biodiversity offsets on a regional basis in agreement with DECCW, whereby the total impact for a specified section of highway (e.g. Ballina to the Queensland border) is estimated and an offset area agreed. The Department has accepted this approach to the provision of vegetation offsets and recommended conditions which required the Proponent to prepare and implement a Biodiversity Offset Strategy prior to the construction of those projects. The Proponent has adopted a similar approach for this project, with the final details of the offset to be developed in consultation with DECCW. However, unlike the previous projects where the offset was part of a regional agreement with DECCW, DEWHA requires the offset area for the proposal to be located within 100 km of Glenugie. The Proponent has identified a number of alternative mechanisms (such as purchase of freehold land or protection of forest land) and location of potential offset areas to meet the offset requirement.

The Department accepts that a suitable offset in the Glenugie area could be provided to offset the clearing of vegetation for the proposal and that the Proponent has committed to develop an offset strategy with DECCW, DEWHA and I&I NSW. Accordingly, the Department has recommended a condition which requires the Proponent to develop an offset strategy for *Eucalyptus tetrapleura*.

The Proponent intends to construct the project in stages, with the initial stage to include the construction of the southbound carriageway between chainages 3000 and 6400 in the southern section of the upgrade. The new northbound carriageway in this section would be constructed at a later date when funding was available. Some submissions expressed concern that all the vegetation in the road reserve would be cleared but that only the southbound carriageway would be constructed, resulting in an area cleared of vegetation remaining vacant land. As there is no indication when the future northbound carriageway would be constructed the Department has drafted a condition which would only permit clearing for the northbound carriageway between Stations 3000 and 6400 and the connection with the future Wells Crossing to Iluka Road project (at the northern end of the Glenugie section) to coincide with the construction of those sections of the project. This would ensure that vegetation is only cleared as part of the construction of the future sections of the upgrade.

Other ecological conditions require the Proponent to:

- implement a strategy to minimise impacts on *Melaleuca irbyana*, including translocation of affected individuals;
- undertake vegetation pre-clearance surveys and install nest boxes; and
- develop and implement a construction flora and fauna management plan.

The Department believes that with the implementation of the Proponent's ecological commitments and the Department's recommended conditions, the construction and operation of the proposal would largely avoid significant ecological impacts.

Fauna Crossings

The Proponent has identified the Glenugie State Forest as an important habitat link between State Forests and a national park to the east with State Forests and habitats to the west. As the proposal would provide a physical barrier for continued east-west fauna movements the Proponent has committed to provide a number of crossing structures to enable movements to be made across the upgrade.

DECCW noted that for some Pacific Highway Upgrade projects fauna impact mitigation structures have not been feasible to construct or have been constructed with design deficiencies which render them ineffective for the their purpose. DECCW recommended a minimum height of 2.4 m for all underpass structures, with the provision of a median break between the northbound and southbound carriageways for the dedicated fauna underpasses and a dry passage cell for the combined fauna and drainage structures. DECCW also

recommended the provision of fauna exclusion fencing to direct towards the dedicated fauna crossing structures.

The Proponent has agreed to provide a box culvert height of 2.4 m for dedicated and combined fauna crossings and determine bed levels for the underpasses and the median break with DECCW and I&I NSW. The Proponent has also agreed to monitor the effectiveness of the flora and fauna mitigation measures for a period of two years post construction. The Proponent has revised the Statement of Commitments to reflect these agreements.

The Department is satisfied the Proponent has included measures to ensure that the connectivity and fauna movement between the eastern and western sections of Glenugie State Forest is not severed. The Department believes that the Proponent's commitment to provide 11 underpass structures (dedicated, combined or incidental culverts) and 4 overhead crossing structures and to consult with DECCW on these structures would ensure that they are effective in facilitating fauna movement across the upgrade.

5.3 Hydrological Impacts

Issue

The upgrade is located in the Glenugie Creek catchment, which drains to the Clarence River to the north. Glenugie Creek is the largest waterway in the area and flows from the east across the upgrade and the existing highway. The upgrade alignment is crossed by nine waterways which join Glenugie Creek on the western side of the highway.

The waterways in the project area are largely intermittent and ephemeral, with small catchments that flow in response to rainfall. The waterways upstream of the existing highway are characterised by:

- incised channels with headcuts (eroding steps in the channel bed);
- bank erosion (toe scour and larger bank failure/ slumping);
- floodplain erosion and drainage channel erosion (slumping and gullying);
- deposition of sand and gravel on channel bed;
- logs and fallen trees within creek lines;
- woody debris and organic matter in the channel; and
- intermittent bed and bank rock outcropping (mainly sandstone and mudstone).

Waterways downstream of the highway culverts were generally stable, however, local bed scour and bank erosion was evident for variable distances downstream of the culvert exit. The erosion was likely caused by combined effect of culvert exist flow and entry of overland flow from table drains, which would cause turbulence, eddying and scour.

The erosion and head ward extension of the drainage network upstream of the highway indicates that the landscape is generally erodible and sensitive to disturbance.

The potential impacts of the proposal include increased runoff from paved surfaces, potential for flow concentration and impacts associated with increases in the intensity and frequency of storm events.

The Proponent has committed to implement a number of measures to minimise impacts on channel structures and receiving environments, including:

- design of drainage structures to accommodate the increase in flows from paved surfaces and future climate change predictions;
- provision of bed/ bank protection and energy dissipation measures would be applied to areas downstream of culverts and unstable areas between the existing and new highway and upstream of the new highway;
- implementation of standard erosion and sediment control measures; and

- designing construction drainage structures and stormwater controls to accommodate overland flow and entry points to Glenugie Creek and tributary creeks.

Submissions
DECCW and I&I NSW provided comments on the assessment of impacts of the proposal on waterways.

Consideration
The Proponent undertook a geomorphic assessment of channel structures and receiving environments both up and downstream of the highway. Areas of instability and potential concern and site specific impact mitigation and management measures were identified. The existing instability of the waterways upstream of the highway indicates that the landscape is generally erodible and sensitive to disturbance. The Proponent believes that the ongoing instability is not caused by the existing highway but rather the result of runoff from the upstream catchment during intense rainfall events.

The Proponent has made commitments to minimise impacts on channel structures in consultation with DECCW and I&IN NSW through the design and size of culverts and other measures to control flow intensity and direction. Stream bank and bed erosion controls would also be designed in accordance with the Government guidelines for soil and erosion control.

DECCW was satisfied with the assessment on channel conditions. I&I NSW considered a more detailed geomorphic assessment of channel structures was warranted rather than a general overview of the geomorphic condition of the receiving waters in the development area.

The Proponent advised in the Submissions Report that a geomorphic assessment of channel structures and receiving waters was undertaken, both upstream and downstream of the highway. The field study indicated that the majority of the headcuts, bed erosion and rejuvenation of the stream network upstream of the existing highway appear to be a recent phenomenon compared to the estimated age of the existing highway. The construction of the highway would have disturbed stream profiles but that they would have stabilised in the intervening years and new profiles established. It would be highly unlikely that the highway would be causing continuing erosion in the upstream area. The other mechanism that could cause erosion is increased flow discharge, flow velocity and/or overland flow patterns. These could change in response to changes in rainfall volume and intensity or increased runoff due to changes in vegetation cover or land use. Although it would be difficult to determine the extent to which any of these parameters changed over time, the Proponent considered the changes to flow patterns and land use characteristics were more likely explanations.

The Department is generally satisfied with the assessment of the channel structures of waterways in the project area and accepts that the current degraded condition of the waterways is unlikely to have been caused by the existing highway. The Proponent has adequately identified and considered appropriate mitigation measures to ensure that the construction of the proposal would not exacerbate existing conditions. The Department is of the view that the proposal will likely result in an improvement over the current degraded condition of existing channels.

The recommended conditions of approval require the Proponent to implement measures to prevent soil erosion and discharge of sediments and pollutants into the watercourses and maintain the structural integrity of the drainage network.

5.4 Other issues

Heritage

Aboriginal heritage
The Glenugie project area was considered to have low Aboriginal archaeological potential because of the absence of permanent freshwater sources, absence of valley floor and basal slope contexts and minimal impact to major ridgeline crests. The cultural heritage assessment and survey of the project area did not identify any Aboriginal sites, places, objects or potential archaeological deposits (PADs). The cultural heritage assessment recommended the development of protocols in the event that previously unidentified objects, relics or human remains are discovered and that a cultural heritage component be included in the induction program for construction personnel. The Proponent has committed to implement these recommendations as part of an Aboriginal Cultural Heritage Management Plan developed in the construction environmental management plan.

DECCW endorsed the recommendation of the cultural heritage assessment and recommended that they be incorporated into the Proponent's Statement of Commitments.

The Department is satisfied with the cultural heritage assessment of the upgrade and with the Proponent's commitment to prepare an Aboriginal Cultural Heritage Management Plan to manage impacts to any previously unidentified objects during the construction of the proposal. This is considered to be an appropriate response in light of the fact that no Aboriginal cultural heritage sites, places or relics have been identified within the upgrade area, which requires active management.

Non-Aboriginal heritage
One non Aboriginal heritage site, part of the remnant 1915 North Coast Railway branch line/ tramway alignment was identified in the project area. The remnant alignment is located between the existing highway and Franklins Road (see Figure 5). The alignment is visible as a levelled, linear ground platform, approximately 3 m wide, which in places is cut or benched according to the land surface. Shallow side embankments are visible in places. The alignment in the project area consists of a gradually curved section about 250 m in length, extending northeast of the highway to Franklins Road. The construction of Franklins Road has removed traces of the tramway to the east of this point.

The section of remnant alignment within the project area represents less than 3% of the original tramway along a ridgeline between the North Coast Railway and a hard rock quarry at Glenugie Peak. There is no intact evidence of tramway construction materials or items associated with its use (such as sleepers, metal objects or the remains of hopper trucks). Buried fabric or relics may be present but would be unlikely to have remained in situ due to the construction of the existing highway.

The heritage assessment considered the part of the tramway within the project area to have moderate heritage value given that it is likely to have been altered or modified and that no evidence of relics associated with its construction or use remains. The remnant tramway has been assessed as an item of local heritage significance. The heritage assessment recommends photographic archival recording of the alignment and the development of a protocol for management of unidentified historic items. The Proponent has committed to implement these recommendations in accordance with the Department's Heritage Branch guidelines.

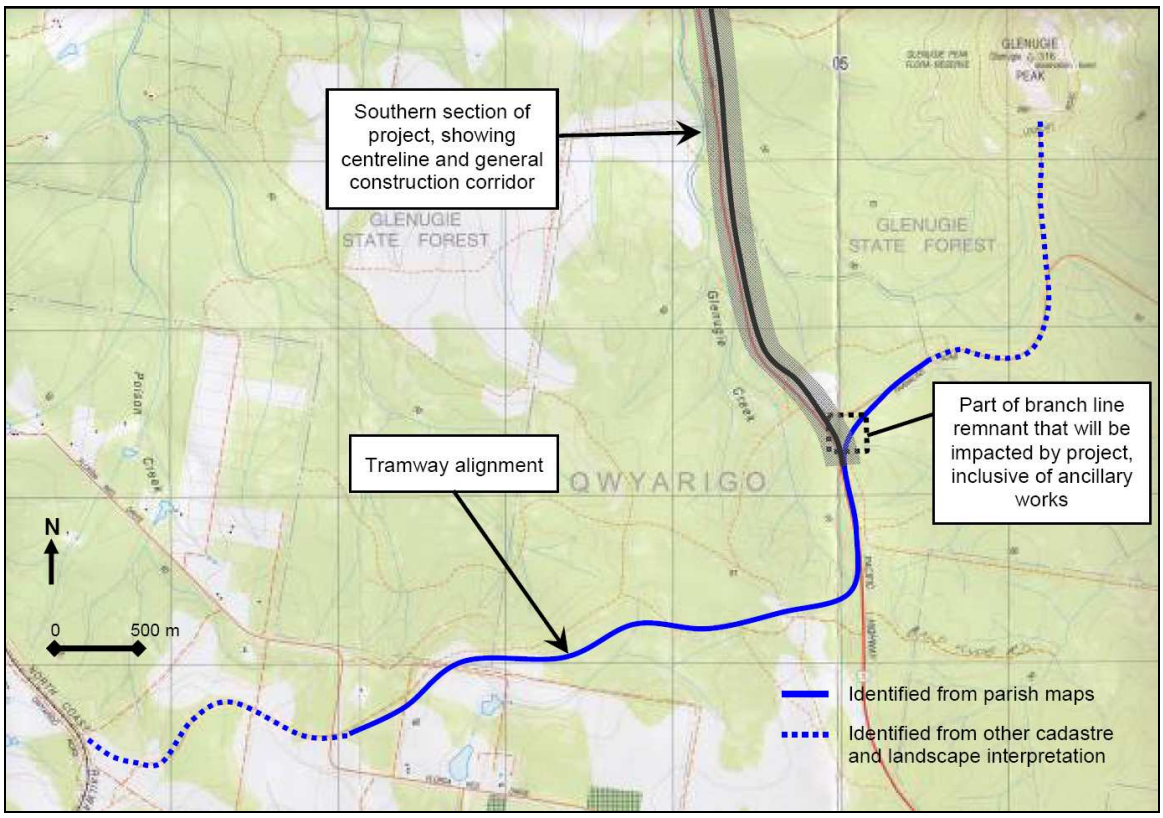

Figure 5: Tramway Alignment *(Source: Figure 7-1, Technical Working Paper Cultural Heritage, RTA 2009).*

The Department is satisfied with the non-Aboriginal heritage assessment of the proposal and that an appropriate response is proposed in relation to the heritage item that would be impacted by the upgrade. A recommended condition of approval requires the Proponent to undertake archival recording of the 1915 North Coast railway branch line/ tramway alignment.

Noise

The noise assessment of the project identified eight residences in a rural/ rural residential community to the northwest of the project as potential noise sensitive receivers (see Figure 6). The residences are located to the west of the existing highway. The noise environment at this location is dominated by road traffic noise (both day and night).

Construction Noise

The construction of the proposal is expected to generate noise from the operation of vehicles and plant/ equipment and activities associated with clearing and grubbing, drainage and earthworks, bridgeworks and paving and asphalting and blasting associated with cuttings. The Proponent has assessed that construction noise would exceed the daytime noise criteria at distances of less than 300 m from the nearest receiver (6 receivers are located between 150 m and 200 m from the construction site). Exceedances of between 8 to 13 dB(A) would be experienced at these receivers.

The Proponent has identified a number of mitigation measures to minimise construction noise impacts on residential receivers and have committed to implement these measures.

DECCW recommended assessment of construction noise in accordance with its *Interim Construction Noise Guidelines* (2009) and conditions relating to out of hours work and blasting hours.

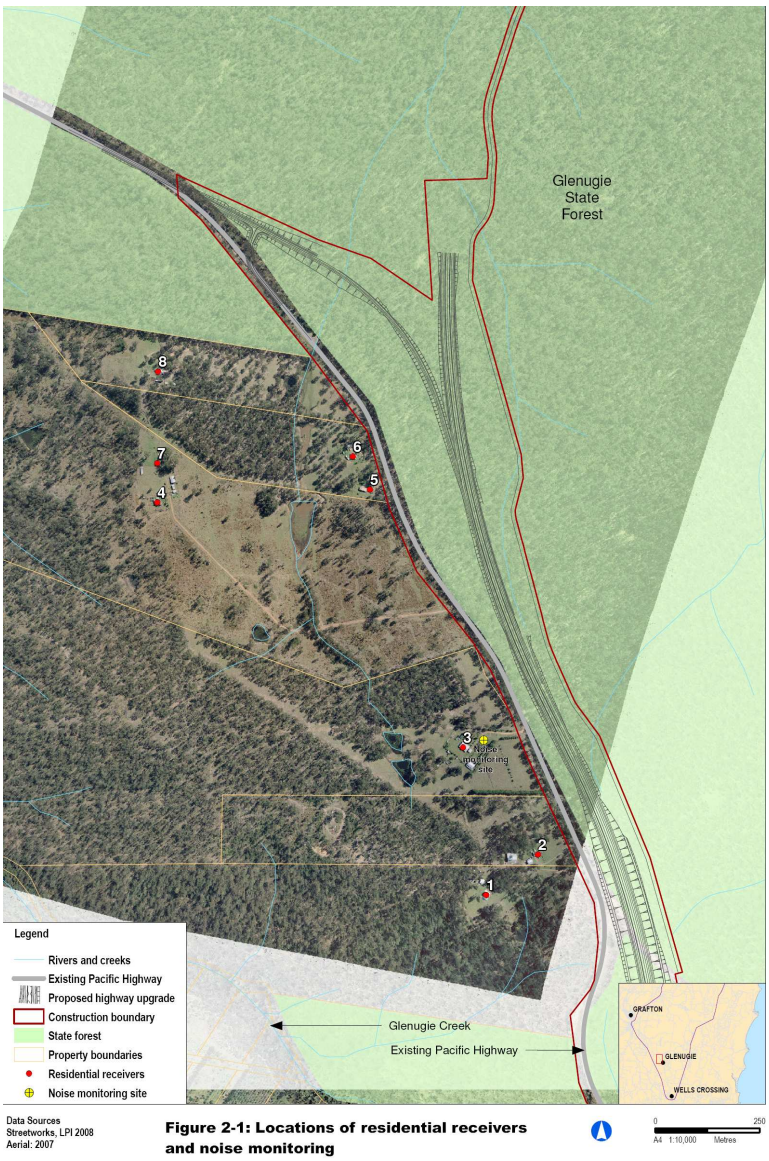

Figure 6: Location of Noise Sensitive Receivers *(Source: Figure 2-1, Technical Working Paper Noise and Vibration Assessment, RTA 2009).*

The Proponent has reviewed the noise assessment in line with DECCW's interim guidelines and considers the objectives of the interim guidelines have been met by assessing construction noise against a conservative noise goal and identifying suitable noise management measures. The Department accepts the Proponent's construction noise assessment and that the proposed mitigation measures are appropriate. The Department's recommended conditions require the Proponent to implement all reasonable and feasible noise mitigation measures to achieve the interim guideline's noise management levels.

Construction Compound

Noise would be generated by activities at a site compound, such as concrete batching and truck movements. Batch plant requirements have not yet been determined but it is expected that either (or both) a concrete or asphalt batching plant would be required. The Submissions Report has identified a likely compound site with either a concrete or asphalt batch plant at the northern end of the upgrade, located between the existing highway and the upgrade. The nearest residential receiver is located about 100 m to the west (on the western side of the existing highway). The compound site would generate noise from vehicle movements, staff transport and material delivery, and with a batch plant, expected noise sources are aggregate loading, mixing drums, a generator and other operational processes.

The Proponent anticipates the batch plant would be required to operate, on occasions, during the evening and nighttime periods. This usually occurs when asphalting or pavement laying may be required to be conducted at night or other non standard hours to ensure quality of product and reduce the requirements for rework.

The assessment has predicted noise levels of 55 dB(A) within 250 m of the batch plant (receivers 5 and 6 are located within 100 m of the construction compound site and would experience noise levels of up to 64 dB(A)). For evening and night time periods, the distances at which the noise criteria would be exceeded are 500 m and 1000 m, respectively. All 8 receivers would be impacted by the batch plant operating during the night time period. The noise assessment states that all feasible and reasonable work practices would be implemented to minimise noise impacts from the operation of the batch plant.

The Department is aware that there are instances where particular construction work cannot be undertaken during standard hours for technical reasons or other unforeseen circumstances. The intent in including a recommended condition for out of hours works is to provide flexibility where certain activities, such as asphalting, pavement laying or saw cutting, or general construction over short periods (days to weeks) require works to be completed at night or other non standard hours, provided the appropriate approvals (including the agreement of DECCW) have been obtained. These must be justifiable on technical grounds, appropriately mitigated and communicated to the affected community.

The Department has recommended a condition which outlines broadly the circumstances where works outside the standard construction hours can be undertaken, as well as identifying a general process for other short term works that may need to be undertaken at night due to timing requirements (*e.g.* cannot be done 'under traffic' at any time). The Department, in deciding whether to approve out of hours works would consider the process identified in the condition, DECCW's comments and the relevant Construction Environmental Management Plan and/or Construction Noise and Vibration Management Plan. Provided that this process is acceptable to the Department and the management plan is approved, its implementation would not necessarily require further Departmental involvement.

It would be expected that on each occasion that out of hours works are required this process would be implemented including the relevant impact assessment, mitigation and management measures and consultation with DECCW and the affected community. The Department considers that his process allows flexibility and ensures that the affected community are aware/ consulted on proposed out of hours work.

Operational Noise

The noise assessment adopted the DECCW's *Environmental Road Traffic Noise Criteria* for the redevelopment of an existing freeway/arterial for the project. The Proponent states that this criterion is appropriate because of the noise influence of the existing highway. The modelling predicted that in the design year (2022) noise levels at all 8 receivers in the vicinity of the upgrade would be below the DECCW criteria of 60 dB(A) (day) and 55 dB(A) (night). All receivers would receive a reduction in existing noise levels, except locations 6, 7 and 8,. The day time noise levels at these 3 receivers is predicted to show no change or only a marginal increase (+ 1 dB(A)). Therefore no additional noise mitigation is proposed for these receivers.

DECCW recommended the Proponent prepare and implement an Operational Noise Management Plan and undertake compliance monitoring to confirm the predicted operational noise levels.

The Department agrees that the operational noise criteria adopted for the receiver locations is appropriate for the project. The proposed upgrade is to the east of the receiver locations, which are presently subject to noise levels higher than the noise criteria. The Department

does not believe an Operational Noise Management Plan is required, given that there are 8 residential receivers and the majority would receive reductions in existing noise levels. Only one receiver is predicted to have an increase in daytime noise levels, an increase of 1 dB(A). However, the Proponent is required to submit for approval a review of the proposed operational noise mitigation measures and undertake operational noise monitoring 12 months after commencement of operation of the project to compare actual noise performance against the predicted noise levels. Where monitored noise levels are higher than the predicted levels, then the Proponent would be required to provide noise mitigation to the affected receiver.

Economic Impacts

The project would require the acquisition of about 100 ha of the Glenugie State Forest, or about 2% of the total forest area. Only 85 ha of this land would be cleared. The uncleared land would be located in the road reserve and the area between the existing highway and the project would be used for temporary construction facilities and sediment construction facilities.

The key productivity concerns for the State Forest would be the loss of forest for timber harvesting and impacts on the recreational and conservation values of the forest. The Proponent notes that there would be a loss of productive forests and areas within the forest that are currently identified as visual amenity buffers. However, the loss of a small proportion of the State Forest would not adversely affect the overall visual amenity, nor significantly impact tourism in the area. The loss of the productive timber area is not expected to have a significant impact on timber production or the viability of forestry businesses in the area.

I&I NSW did not object and requested a condition to require the Proponent to maintain access to the State Forest.

The construction of the project would have a beneficial impact on employment during construction and it is likely that some of the construction jobs and materials would be sourced locally.

The Proponent has given a commitment to provide a new access road to maintain existing access to the State Forest. To ensure that impacts on forest management and maintenance are minimised, the Department has included a requirement that the Proponent consult with I&I NSW, consider the use of the cleared timber as harvestable timber and provide a new forest access road.

Environmental Management

The Proponent has prepared a Framework Construction Environmental Management Plan (CEMP) to guide the construction of the project. The CEMP would provide a framework for the Proponent's environmental commitments and the environmental impact mitigation and management measures, as well as documenting the processes for implementing, monitoring and auditing the project. The Framework CEMP would have a number of sub-plans, which provide the details of risks and impacts of the key environmental issues.

DECCW and I&I NSW were concerned that the Framework CEMP was very general with few details and recommended the Proponent prepare a Project CEMP when all the required information was available.

The Proponent advised the Framework CEMP provided a general overview of what would be covered in the CEMP. A detailed CEMP would be developed in consultation with the agencies.

The Department is satisfied the Framework CEMP provides sufficient details of how the proposal would be managed during the construction phase. The Proponent would prepare a detailed CEMP on the basis of the scope of the plan outlined in the environmental assessment. The Department believes that this provides sufficient guidance for the Proponent to develop the CEMP, and following consultation with the Department and relevant government agencies, approve the final CEMP.

The recommended condition of approval requires the Proponent to consult with the Department and agencies on the preparation of the CEMP, provide the agencies with a copy of the draft CEMP and provide 14 days for agency comments to be made. The Proponent is required to take into account any comments received from the Department and the agencies on the draft CEMP. A copy of the final CEMP approved by the Proponent is required to be provided to the Department prior to construction commencing. The Department believes the requirement for consultation with agencies would ensure that agency comments are taken into account by the Proponent and that the final CEMP would show how those comments were dealt with. The Department considers that this approval process is appropriate for the finalisation of the CEMP.

6. CONCLUSION AND RECOMMENDATIONS

The Department has undertaken a detailed assessment of the Environmental Assessment of the project, the Submissions Report and submissions received on the proposal and is satisfied that the likely impacts of the proposal can be mitigated or managed to an acceptable level of environmental performance, subject to the implementation of recommended conditions.

The Department notes that there are a number of constraints which will need to be carefully managed. These include the development and implementation of mitigation measures for creek hydrology and biodiversity impacts (particularly fauna movement and development of a comprehensive biodiversity offset package). These issues were raised in submissions from local community groups and public agencies. The Department has drafted recommended conditions of approval to support and enhance the Proponent's Statement of Commitments.

The proposal would result in the removal of threatened species, particularly the *Eucalyptus tetrapleura* species. A significant proportion of the regional population of this species is located in the Glenugie State Forest. Although some 6000 individual trees spread over 36 ha of habitat would be removed, the Proponent states that the project would not have a significant impact on the survival of the remnant population on the western side of the existing highway, significantly reduce its potential gene pool or impact on accessibility of potential pollinators. The Proponent has committed to compensate the removal of the threatened species by providing a biodiversity offset in the area.

Based on its assessment, the Department is satisfied that the project would alleviate the traffic safety issues associated with the existing highway. The Department believes that the project will provide benefits to local and regional road users through the provision of a high standard motorway to aid in the efficient movement of traffic between Sydney, the Mid North Coast and Brisbane.

The recommended conditions of approval provide for the mitigation and management of other impacts associated with the project including noise, air and water quality and heritage and general requirements for overall environmental management of the project and consultation with the community. The Department believes that compliance with the recommended conditions and implementation of the mitigation measures proposed in the Environmental Assessment and Statement of Commitments would ensure that sustainable best management practices are considered throughout the construction and operation of the project. This would also ensure that any potential impacts are minimised to an acceptable level and the project does not unduly impact on the amenity local residents and the community.

Accordingly, the Department recommends that the Minister approve the project, subject to the recommended conditions of approval provided in Appendix A.

APPENDIX A – RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX B – STATEMENT OF COMMITMENTS

CONTAINED IN THE ATTACHED REPORT

APPENDIX C – RESPONSE TO SUBMISSIONS

CONTAINED IN THE ATTACHED SUBMISSIONS REPORT

APPENDIX D – ENVIRONMENTAL ASSESSMENT

ON THE ATTACHED CD ROM