



Planning &
Environment

**MODIFICATION REQUEST:
*Pacific Highway Upgrade
Woolgoolga to Ballina (SSI 4983 MOD 6)***

***Realignment Portion A Glenugie
Interchange to Eight Mile Lane
Interchange***



Secretary's Environmental Assessment Report
Section 115ZI of the
Environmental Planning and Assessment Act 1979

February 2018

Cover Photo — Glenugie State Forest at Picaninny Creek (EIS 2012)

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1. BACKGROUND

1.1. Project Approval

The Pacific Highway Upgrade – Woolgoolga to Ballina (W2B) project was identified as a key priority transport infrastructure project in the Government's *Long Term Master Plan (2012)* and was declared critical State Significant Infrastructure in accordance with clause 16 and Schedule 5 of *State Environmental Planning Policy (State and Regional Development) 2011*. The then Minister for Planning granted planning approval for the project under section 115ZB of the *Environmental Planning and Assessment Act 1979* (the Act) on 24 June 2014.

1.2. Project Description

The Woolgoolga to Ballina (W2B) project involves an upgrade of the Pacific Highway, from about six kilometres north of Woolgoolga at Arrawarra Beach Road to Pimlico Road about six kilometres to the south of Ballina, to dual carriageways, for a distance of approximately 155 kilometres, in the Coffs Harbour, Clarence Valley, Richmond Valley and Ballina local government areas. The key components of the project include:

- Bypasses of Grafton, South Grafton, Ulmarra, Woodburn, Broadwater and Wardell;
- 10 interchanges enabling access to and from the project;
- 170 bridges over rivers, watercourses, floodplains and local roads;
- Fauna connectivity structures; and
- Service roads and access roads to existing local roads and properties.

The project location and alignment is shown in **Figure 1**.

Staged construction of the W2B project commenced in mid-2015. Sections 1 and 2 between Woolgoolga and Glenugie opened to traffic in the fourth quarter of 2017. The remainder of the project (Sections 3-11) is expected to be opened to traffic in 2020.

1.3. Subsequent Modifications

The project approval has been modified three times subsequent to the Minister's approval, two modifications, including this request, are under assessment and one modification has been withdrawn. A summary of the modifications is provided in **Table 1**.

Table 1: Summary of project modifications to date

Modification	Status	Description
Modification 1 – Administrative changes	Approved 15 January 2015	<ul style="list-style-type: none"> • Change the definition of construction and update public authority references.
Modification 2 – Heritage assessment	Approved 7 October 2015	<ul style="list-style-type: none"> • To permit heritage investigations and impacts for additional works outside the project boundary.
Modification 3 – Glenugie Interchange to Eight Mile Lane Interchange	Withdrawn 1 December 2017	<ul style="list-style-type: none"> • Realign approximately 2.5 kilometres of the road between the Pacific Highway and Eight Mile Lane, Glenugie, (Chainage 33500 to Chainage 36000) approximately 250 metres to the east of the approved alignment.

Modification 4 – Moonimba borrow site	Under assessment	<ul style="list-style-type: none"> • Temporary use of the borrow site to extract one million tonnes of material per annum for a period of two years. • Associated infrastructure such as a site office and staff amenities. • Average of 230 to 250 heavy vehicles movements per day to and from the borrow site. • Proposed haulage along Boggy Creek Road, Reardons Lane and Woodburn-Coraki Road.
Modification 5 – Oxleyan Pygmy Perch habitat	Approved 27 September 2017	<ul style="list-style-type: none"> • Modify conditions B8, B9 and B13.
Modification 6 – Glenugie Interchange to Eight Mile Lane Interchange	This Modification	<ul style="list-style-type: none"> • Realign approximately 3 kilometres of the road between the Pacific Highway and North of Eight Mile Lane, Glenugie, (Chainage 34000 to Chainage 36600) approximately 200 metres to the west of the approved alignment.

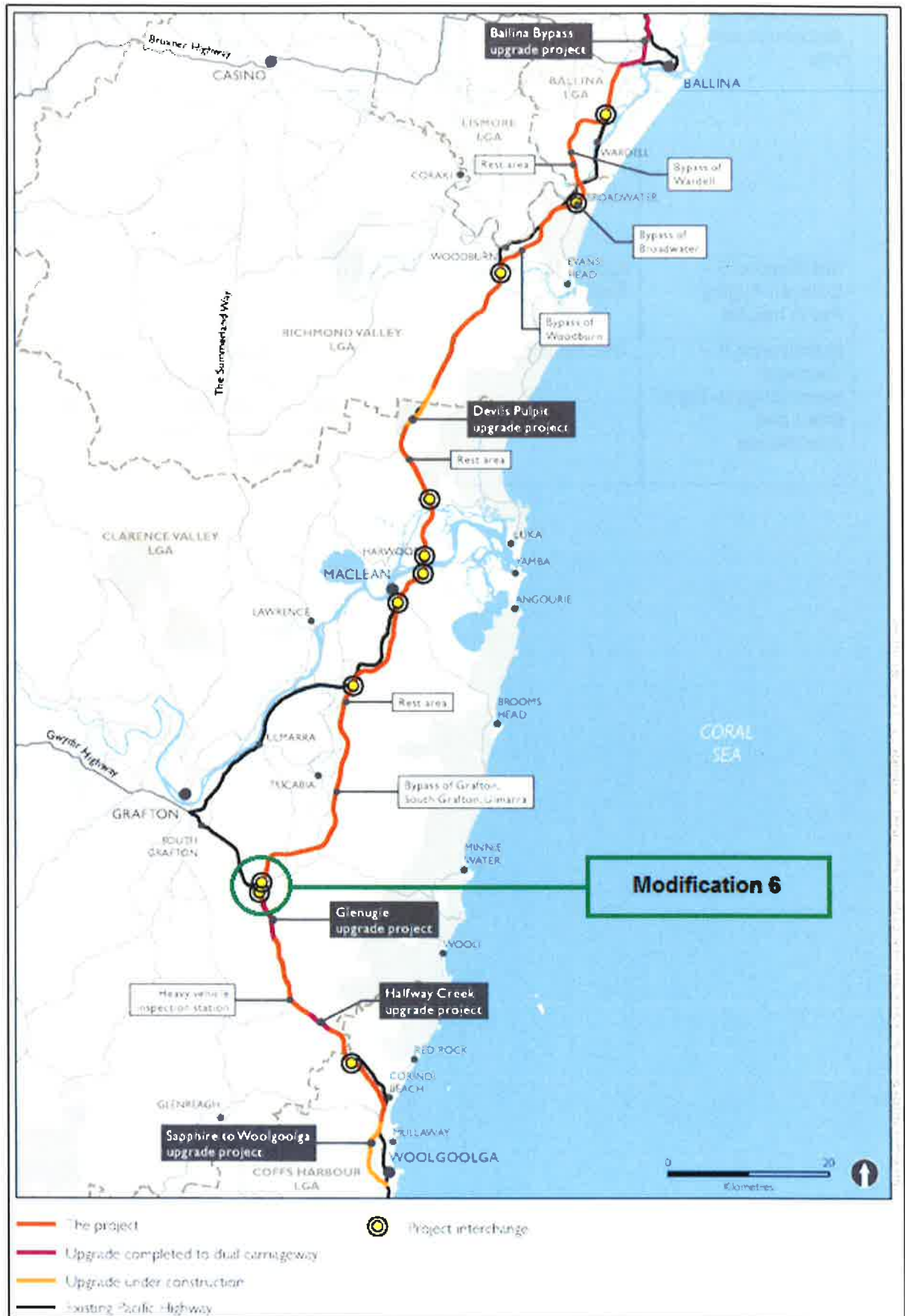


Figure 1: Project Location (Source: Roads and Maritime Services)

2. CURRENT MODIFICATION

Roads and Maritime Services (the Proponent) seeks to modify the Minister's approval to realign approximately 3 kilometres of road between the Pacific Highway, Glenugie and north of Eight Mile Lane, Glenugie (Ch 33000 to Ch 37000). The proposed new alignment would be located up to 200 metres to the west of the approved project boundary.

The approved project and the proposed alignment are illustrated in **Figure 2** and **Figure 3**.

This section of the project has two interchanges, one located at the southern end of the proposed modification area at Glenugie (Pacific Highway) and one located at the northern end at Eight Mile Lane. The Glenugie interchange would consist of a southbound entry ramp and a northbound exit ramp. The Eight Mile Lane interchange would consist of a northbound entry ramp from Eight Mile Lane onto the new alignment and southbound exit ramp to Eight Mile Lane at a T-intersection. Both interchanges would be located slightly west of the original locations in the approved project.

The footprint would be reduced to minimise clearing and ground disturbance within the Glenugie State Forest. Cross drainage for the western tributary of Picanniny Creek would be included and Pheasant Creek would be realigned where it crosses the highway at Ch36400. Impacts to Picanniny Creek would be reduced as it is located to the west of the approved alignment. A minor realignment of Nine Mile Creek would also be undertaken as part of the proposed modification.

The proposed alignment would be constructed through the use of fill embankments. Some subsurface excavations may be required for geotechnical investigations. No rest areas or ancillary facilities are proposed within the modification area in the Glenugie State Forest.

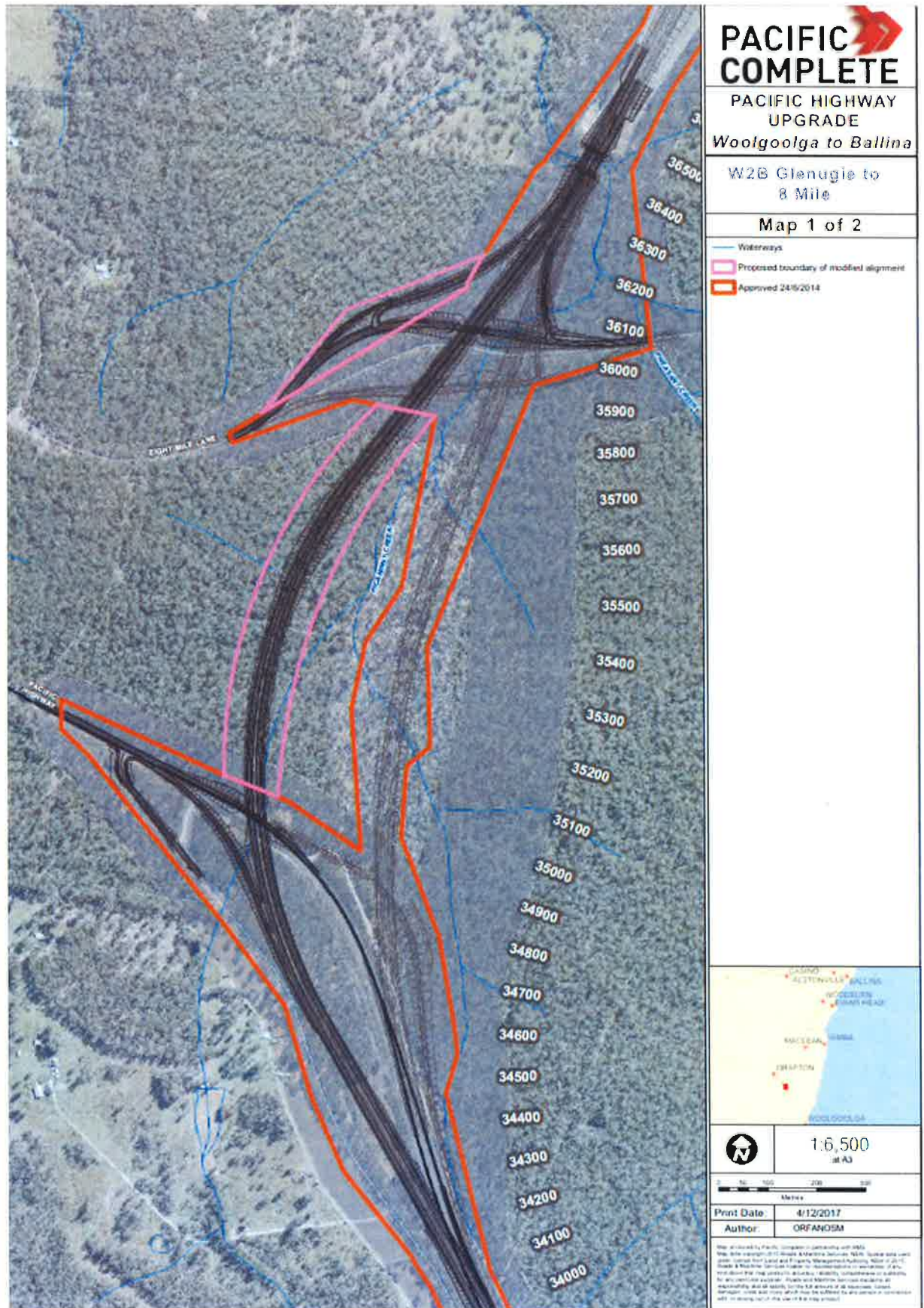


Figure 2: Approved Project and Proposed Alignment, Layout 1 (Source: Roads and Maritime Services, December 2017)

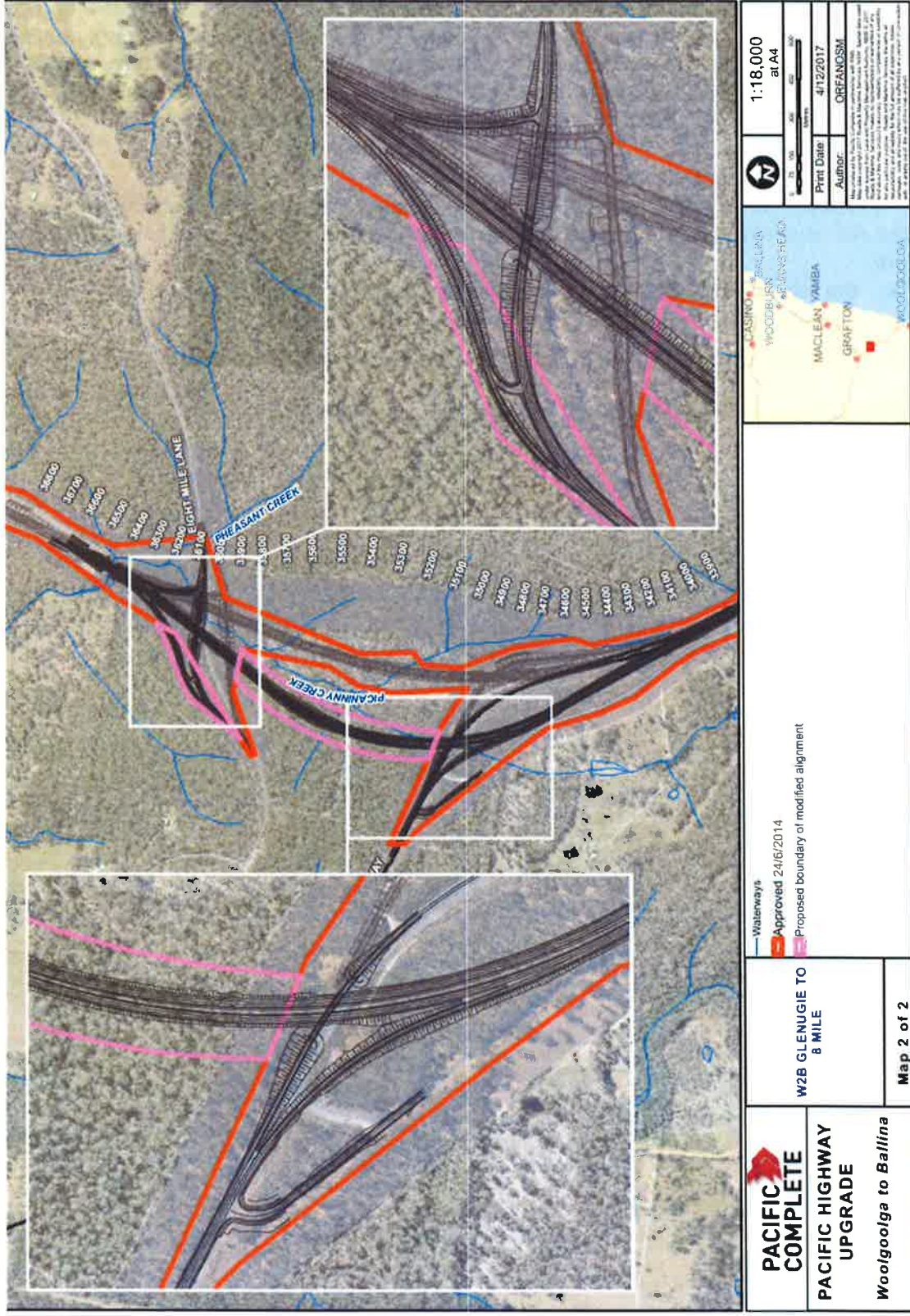


Figure 3: Approved Project and Proposed Alignment, Layout 2 (Roads and Maritime Services, December 2017)

3. STATUTORY CONTEXT

3.1 Modification of the Minister's Approval

In accordance with section 115ZI of the Act, a proponent may request the Minister to modify the Minister's approval for State significant infrastructure. The Minister's approval is not required if the project, as modified, will be consistent with the original approval. The subject modification is not consistent with the approval, but does not constitute a project in its own right, and therefore a modification in accordance with section 115ZI of the Act is considered appropriate.

3.2 Delegated Authority

On 11 October 2017 the Minister for Planning delegated his powers and functions under Part 5.1 of the Act to senior executive officers of the Department of Planning and Environment in cases where:

- the relevant local council has not made an objection; and
- a political disclosure statement has not been made; and
- there are less than 25 public submissions in the nature of objections.

The proposed modification meets the terms of this delegation.

4. CONSULTATION AND SUBMISSIONS

4.1 Modification of the Minister's Approval

Under section 115ZL(1)(g) of the Act, the Secretary is required to make the modification request publicly available. Accordingly, the Department placed a copy of the modification request on its website and notified adjoining landowners in Glenugie and Eight Mile Lane by letter.

The Environment Protection Authority (EPA), Office of Environment and Heritage (OEH), the Forestry Corporation, the Department of Primary Industries (DPI) – Fisheries and Clarence Valley Council were also notified that the modification request was available for review.

4.2 Submissions

A total of five (5) submissions were received. Two (2) submissions were received from the general public and three (3) submissions from government agencies. A summary of the key issues raised in the submissions is presented below.

Submissions from the Public

The main issues raised in the submissions were:

- increased traffic, noise and dust resulting from the proposed location of the Eight Mile Lane interchange;
- decrease in property value resulting from increased traffic, noise and dust from proposed interchange location;
- bridge design to alleviate potential flooding impacts;
- potential increase in flooding depths; and
- erosion of soil and vegetation resulting from increased flooding.

Similar concerns about increased traffic along Eight Mile Lane were raised in phone conversations with several residents.

State Government Agency Submissions

Department of Industries (DPI) - Fisheries expressed no objection to the proposed modification, and noted the commitment to consultation with NSW DPI regarding the realignment and structures for connectivity of both Nine Mile Creek and Picanniny Creek.

Office of Environment & Heritage (OEH) acknowledged that the proposed modification has been designed to avoid and minimise impacts to a sensitive heritage area within the Glenugie State Forest.

Environment Protection Agency (EPA) noted potential pollution and poor water quality discharges from the new road, impact on vegetation and soils from flooding non-conformances as well as sediment and erosion controls.

The Proponent's response to the public and agency comments are discussed in Section 5 of this report.

5. ASSESSMENT

The proposed new alignment traverses the Glenugie State Forest, as does the approved project. The footprint of the proposed new alignment would be reduced to minimise clearing and ground disturbance.

The Glenugie interchange is largely located within the Pacific Highway road corridor and the Proponents land. No privately owned land is required for the proposed modification.

The Department's assessment of the changes to the approved project are provided below:

Biodiversity

The vegetation communities and potential threatened flora and fauna species in the approved project and the proposed new alignment are similar. The proposed new alignment requires clearing of approximately 24 hectares of *Spotted Gum – Grey Ironbark – Pink Bloodwood open forest of the Clarence Valley* vegetation, which is a reduction of approximately half a hectare when compared to the approved project. In addition, approximately 7.5 hectares of *Forest Red Gum – Swamp Box of the Clarence Valley* is required to be cleared, which is a reduction of approximately two hectares from the approved project. As such, the overall clearing calculations (including those from unknown vegetation) indicate an overall net reduction of approximately 2.85 hectares of vegetation in comparison to the approved project. A hollow bearing tree (HBT) survey recorded 38 HBTs in the proposed new alignment area, which is an increase of 12 HBTs to be impacted. The additional impacts of the proposed new alignment would be offset by the provision of nest boxes in accordance with the project's Nest Box Management Plan.

Vegetation in the modification area provides habitat for a number of threatened species (Brush-tailed Phascogale, Green-thighed Frog, Rufous Bettong and the Yellow-bellied Glider). The proposal would have some impact on the habitat used by these species, however, the impacts are consistent with the approved project and no further consideration of these impacts is required.

An existing fauna connectivity structure, near where the proposed realignment intersects with the existing Pacific Highway, is proposed to be demolished as part of the proposal. The existing structure is a three-metre high Bebo arch, which functions as a combined structure, providing fauna connectivity and drainage function (Nine Mile Creek). This structure wasn't impacted by the approved project. The Bebo arch would be replaced with a four (4) cell box culvert under the north bound exit ramp to Grafton and a similar set under the main alignment close to the existing arch structure. The four cells (each 2.4m high x 3.0m wide) would consist of two fauna connectivity culverts and two drainage culverts. Excluding the drainage culverts, a one square metre loss in aperture to fauna connectivity would result from the proposed design (14.4m²) compared with the existing Bebo Arch (15.4m²). The EPA provided in principle support, in earlier discussions with the Proponent, for a five (5) cell structure consisting of two fauna connectivity culverts (each 2.4m high x 3.0m wide) and three drainage culverts (each 1.5m high x 3.0m wide). Furthermore, the agency requested to remain informed during the project design process. The proposed 4-cell culvert design does not alter the fauna connectivity dimensions supported in principle by the EPA and only seeks to modify the drainage component of that earlier indicative design. As such, the Department considers the proposed fauna connectivity structure to be an appropriate replacement of the Bebo arch and encourages continued communication with EPA during further and final design of the box culverts.

In addition to the strategic fauna connectivity structures, it is determined that the proposed vehicular access culvert (2.7 high x 3.6 wide) along Dungal Road (a forestry access track), which maintains permeability within the Glenugie State Forest, would also service as a fauna connectivity structure.

The approved project included a glider pole as a fauna mitigation measure. Because of the 'no dig policy' the glider pole would not be installed along the new alignment. The Proponent states that in view of the reduced footprint and width of the realignment, as well as the nature of vegetation on either side of the alignment (mature trees), connectivity would be achieved. Further consultation with EPA would be undertaken to determine if alternate mitigation would need to be implemented.

Biodiversity impacts would be managed in accordance with the *Woolgoolga to Ballina Pacific Highway Upgrade (sections 3-11) Construction Flora and Fauna Management Plan*, this includes pre-clearing survey and installation of nest boxes. In addition, a number of W2B Threatened Fauna Management Plans, for frogs, emus, mammals, gliders and microbats would be implemented within the proposed modification area. This includes such actions as targeted surveys of frog species (including the Green-thighed Frog) to be undertaken prior to construction commencing.

The Department considers that while the proposed modification has some relatively minor changes on habitat and biodiversity, the impacts are similar to the approved project. The Department is satisfied that an appropriate level of survey has been undertaken to inform the biodiversity assessment. In addition, the W2B Threatened Species Management Plans are considered to be appropriate in managing the construction impacts on flora and fauna.

Hydrology, Water and Soil

Impacts to hydrology, water quality and soil management are similar to the approved project. The proposed modification reduces impacts on Picaninny Creek, which would have been diverted as part of the approved project. The new realignment does not require its diversion, with the only modification to this part of the waterway being to Pheasant Creek (downstream of its confluence with Picaninny Creek), which would be channelled underneath the motorway (Bridge A03).

The local diversion of Nine Mile Creek at the Pacific Highway interchange is also proposed, which would be integrated into the realignment works already undertaken for the approved project. The creek diversion will be of a similar profile, grade and length as the original creek. Potential impact to fish passage throughout the proposed modification would be mitigated in consultation with the DPI.

Concerns were raised by an adjoining landowner that the modification would result in increased flooding levels and greater erosion of soil and vegetation along Pheasant Creek. The Proponent states that no additional flooding impacts from the realignment of Pheasant Creek are expected to the downstream property. However, it is noted that non-conformances in flooding variables because of the approved project are unchanged due to the realignment of Pheasant Creek. Notwithstanding, the Proponent has committed to the provision of flood modelling diagrams and to investigate the placement of additional rock at potential erosion locations. A minor increase in flooding is experienced upstream of the proposed bridge (Bridge A03) in the Glenugie State Forest, which does not adversely impact uses in the State Forest.

Water quality management and treatment of road surface runoff would occur in longitudinal swales or integrated into water quality basins (located outside the State Forest at the proposed interchanges) under the current EIS that forms part of the original project works.

The Department notes hydrology and water quality issues would be managed in accordance with the CEMP, flood management, as well as soil and water management plans for the W2B project. The Department is satisfied that flooding impacts of the new alignment would be consistent with the approved project and that appropriate measures have been identified to manage water quality.

Heritage

The proposed new alignment has no additional impacts on Aboriginal heritage in the area. Two previously identified potential archaeological deposit sites (Pheasant Creek 1 and Pheasant Creek 2) are located to the east of the proposed new alignment and south of Eight Mile Lane in the

Glenugie State Forest. The proposed new alignment is located in the vicinity of previously identified Aboriginal cultural places, including Glenugie Peak, Pillar Valley men's and women's sites and Pillar Valley corridor of movement, however, there would be no direct impacts on these cultural places. A Registered Aboriginal Parties (RAP) working group would be established and maintained through the construction of the proposed new alignment.

No non-Aboriginal heritage is impacted by the proposed new alignment. The State Heritage Register listed High Conservation Value Old Growth Forests are located to the east of the modification area within the Glenugie State Forest. No areas identified as Old Growth Forests are located in the proposed new alignment area.

The Department is satisfied the Proponent has designed the proposed new alignment to minimise impacts on Aboriginal cultural sites and places, as well as ongoing engagement with the RAPs during the construction of the proposed new alignment. In addition, the W2B Construction Heritage Management Plan would manage potential impacts to undiscovered heritage during the construction of the proposed new alignment.

Traffic and Access

The proposal modifies the approved interchanges (Glenugie and Eight Mile Lane). Both interchanges would be located immediately west of the approved location, with the northbound entry ramp at Eight Mile Lane interchange positioned 50m west of the approved location. A forestry access track (Dungel Road) would be intersected by the proposed modification. Provision to maintain connectivity within the Glenugie State Forest has been made with an underpass at Ch 35250.

The proposed realignment entails a similar scope to the approved project. As such, construction traffic volumes, impacts on local roads, impacts on highway function and access are anticipated to be consistent with the original approval. Despite this, submissions from the local community raised concerns over the Eight Mile Lane interchange and the potential increase in vehicles using Eight Mile Lane, with an increase in traffic numbers resulting in road safety, noise and dust issues.

The Eight Mile Lane interchange is part of the approved project and its function is not changed by the proposed modification. The traffic assessment of the original project noted that 57% of the traffic between Tyndale and Grafton would use the new highway and 43% would use the existing highway. Currently 20% of the existing traffic between Grafton and Tyndale are heavy vehicles, which would reduce to 4% once the new highway between Tyndale and Glenugie opens.

The Department is satisfied that the proposed modification would not result in additional impacts regarding traffic and access. The interchange at Eight Mile Lane outlined in the new alignment is similar to that of the approved project, the difference being a shift of approximately 50m westward. In addition, the project is subject to be carried out in accordance with the W2B Construction Traffic and Access Management Plan.

Visual Amenity and Landscaping

The proposed realignment is located within the Glenugie State Forest and adjacent road reserve, which was originally assessed as having 'low' landscape character impacts as part of the approved project. However, the modification results in the highway moving further west towards existing residents and impacts on an existing vegetated area. Consequently, there would be a reduced visual buffer between the old Pacific Highway and the new Pacific Highway. As such, this impact would result in a moderate impact when compared to the low impact outlined in the EIS.

To address this impact a landscape design package will be developed which will incorporate landscaping and rehabilitation of the riparian corridor surrounding Picaninny Creek.

The Department is satisfied that the Proponent can address landscape treatments and measures to minimise the visual impact of the refined alignment through submission of an updated Urban Design and Landscape Plan for approval in accordance with condition D20.

Noise and Vibration

The proposed new alignment is located within the Glenugie State Forest and not subject to highway noise. Up to five sensitive receivers are located within 500 metres of the proposed modification, near the tie-ins at the Pacific Highway at Glenugie and Eight Mile Lane. Both interchanges are located slightly west of the original locations in the approved project. The location of the new alignment is up to 200 metres west of the approved project and would decrease distances between the roadway and sensitive receivers. As such, further investigations would be required during detailed design to determine the subsequent impacts of the proposed realignment. Of the five nearest sensitive receivers, the closest residential receivers would be located approximately 110 metres from the mainline construction works. There are no sensitive receivers to the east (Glenugie State Forest).

To ensure that potential impacts on adjacent sensitive receivers are incorporated, the noise catchment has been extended about 1 km to the south. The Proponent has refined the noise impact assessment to capture the revised alignment through this catchment, with the various construction scenarios modelled to determine exceedances against the noise management levels for each construction period.

The construction noise assessment in the EIS predicted maximum noise level of 68 dB(A) in noise catchment 3-d (Glenugie) during daytime earthworks. Eleven receivers were predicted to exceed the noise management level. There is a relatively minor change in the construction noise impacts experienced by sensitive receivers compared with the approved project. A maximum exceedance of up to 19 dB is predicted for daytime works and overall noise impacts from construction works fall below the "Highly Noise Affected" level. The Proponent states that construction noise impacts are similar to the approved project and would be managed through the Construction Noise and Vibration Management Plan.

Regarding operational noise, the EIS predicted compliance with the operational traffic noise criteria therefore no noise mitigation was required. The modification relocates the main alignment further to the west and closer to receivers west of the Pacific Highway (nearest receiver is located approximately 110m from the realigned highway). The Proponent has advised that operational noise mitigation would be determined during detailed design of the project and further detailed noise modelling would be undertaken to determine the operational noise impacts of the refined alignment. This will consider mitigation options for each of the identified receivers such as barriers, pavements and at house treatments.

The Department is satisfied the construction noise and vibration impacts are similar to those of the approved project. Further noise modelling would be undertaken once the detailed design had been completed and the requirements for noise mitigation measures resulting from the proposed new alignment, will be included in an updated Operational Noise Review under condition D11. The Department considers that the projects existing noise and vibration management and mitigation measures are appropriate in managing potential risks from the construction of the proposed new alignment.

Other Issues

The Department notes other impacts of the proposed new alignment such as air quality, social and economic, and waste management are similar to those of the approved project, and that these impacts can be managed through the W2B CEMP and air quality and waste management plans.

In relation to impacts on property values, the Department does not consider the proposed realignment would reduce the amenity (and value) of existing residences in Eight Mile Lane to the west and east of the Eight Mile Lane interchange.

6. CONCLUSION AND RECOMMENDATIONS

The Department notes the proposed new alignment has similar environmental impacts to the approved project. It is considered that in general the existing conditions of approval can manage the construction and operation of the proposed new alignment. Some conditions of approval have been modified to reflect the new alignment and to facilitate improved delivery of the project.

It is recommended that the Executive Director, Priority Projects Assessments, as delegate of the Minister:

- note the information provided; and
- approve the modification request by signing the attached modifying instrument **(Tab A)**.

 20/2/18

Michael Young
Principal Planner
Transport Assessments

Recommended by:



Glenn Snow
Director
Transport Assessments

DECISION

This recommendation is approved by:



David Gainsford 21/2/18
Executive Director
Priority Projects Assessments
As delegate of the Minister for Planning

APPENDIX A MODIFICATION REQUEST

See the Department's website at

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8956