



Woolgoolga to Ballina

Pacific Highway Upgrade

*Temporary Intensification of Operations at Moonimba  
Borrow Site*

Submissions Report

November 2017

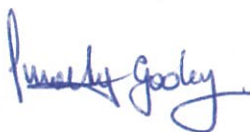
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## GLOSSARY / ABBREVIATIONS

ABS	Australian Bureau of Statistics
AFG	Aboriginal Focus Group
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management Systems
Approved Project, the	Woolgoolga to Ballina Pacific Highway Upgrade - <i>project which has been approved by the Minister for Planning</i>
AQIA	Air Quality Impact Assessment
CO	Carbon monoxide
CAQMP	Construction Air Quality Management Plan
CCEMP	Contractor's Construction Environmental Management Plan
CCLMP	Construction Contaminated Land Management Plan
CEMP	Construction Environmental Management Plan
CFFMP	Construction Flora and Fauna Management Plan
CHA	Cultural Heritage Assessment
CSWMP	Construction Soil and Water Management Plan
CTAMP	Construction Traffic and Access Management Plan
CWREMP	Construction Waste, Resource and Energy Management Plan
DA127/95	The current development application for the existing quarry located at the Moonimba Borrow Site.
DA2015.0069	A recent development application that was approved for the expansion of the existing quarry at the Moonimba Borrow Site that was not activated at the time this modification report was prepared.
dB	decibel
DP&E	Department of Planning and Environment
DoE	Department of Environment
DPI	Department of Primary Industries
EEC	Endangered Ecological Communities
EIS	Environmental Impact Statement
EMS	Environmental Management Systems
ENM	Excavated Natural Material
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	Environment Protection Authority
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence
ER	Environmental Representative: <i>A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance. Equates to Environmental Management Representative under Ballina Bypass project Ministerial conditions of approval.</i>
ERG	Environment Review Group. A group of relevant government agencies, Roads and Maritime, Pacific Complete and Contractor staff members who meet monthly to discuss environmental matters on the Approved Project.
EWMS	Environmental work method statements
FCNSW	Forestry Corporation of NSW
GDE	Groundwater dependent ecosystem
ha	Hectares
km	Kilometres

LAeq	Describes the sound level that is representative over a certain period of time that is prescribed
LALC	Local Aboriginal Land Council
LEP	Local environmental plans
L	Litres
m <sup>3</sup>	Cubic metres
MCoA	NSW Minister for Planning Conditions of Approval
Minister, the	Minister for Planning
Moonimba Borrow Site	Previously known as the Moonimba Quarry, the subject of this modification assessment
NIA	Noise Impact Assessment
NOx	Nitrogen oxides
OEH	Office of Environment and Heritage
OPM	Operational Plan of Management
PACHCI	Procedure for Aboriginal Cultural Heritage Consultation and Investigation
PC	Pacific Complete: <i>entity composed of Laing O'Rourke and Parsons Brinckerhoff/WSP appointed by Roads and Maritime as Delivery Partner for the project</i>
PoEO	<i>Protection of the Environment Operations Act 1997</i>
Project, the	The Woolgoolga to Ballina Pacific Highway Upgrade Project (Sections 3 to 11)
RBL	Rating background level
RL	Relative level
RMS, Roads and Maritime	Roads and Maritime Services
RTA	Roads and Traffic Authority. Previous name for Roads and Maritime Services
Secretary	Secretary of the Department of Planning and Environment
SEPP	State environmental planning policy
SO <sub>2</sub>	Sulphur dioxide
SPIR	Submission / Preferred Infrastructure Report
SSI 4963	State Significant Infrastructure
TEC	Threatened Ecological Community
TIA	Traffic impact assessment
TMP	Traffic management plan
TSP	Total suspended particulate
TTIA	Traffic and transport impact assessment
TSC Act	<i>Threatened Species Conservation Act 1995</i>
VENM	Virgin Excavated Natural Material
VIS	Vegetation Information System
VOC	Volatile Organic Compound
W2B	Woolgoolga to Ballina Pacific Highway Upgrade project

## EXECUTIVE SUMMARY

A modification of the Woolgoolga to Ballina Project Approval is being sought for the use of the Moonimba Borrow Site (previously known as the Moonimba Quarry), for the supply of material for the construction of the Woolgoolga to Ballina Pacific Highway Upgrade. The proposed modification would allow for the extraction and supply of one million tonnes of material per annum (equivalent to 400,000 cubic metres) for a period of two years or until the material demand for the project ceases. This would provide two million tonnes of material in total which would meet the deficit of material in demand for the delivery of the Approved Project.

NSW Roads and Maritime Services is seeking a modification of the Minister for Planning's approval under Section 115ZI of Part 5.1 of the EP&A Act. An application letter was submitted to the Department of Planning and Environment on 21 August 2017. In accordance with the EP&A Act, the *Temporary Intensification of Operations at Moonimba Borrow Site – Environmental Assessment Modification Report* ('the modification report') was prepared to assess the potential impacts of the proposed modification. This submissions report aims to outline the submissions received from members of the public, organisations and government agencies and provide response and clarification to issues raised. Where applicable, mitigation measures have been updated to reflect issues raised in the submissions received.

The *Temporary Intensification of Operations at Moonimba Borrow Site – Environmental Assessment Modification Report* was exhibited by the Department of Planning and Environment for 15 days from 11 September and 25 September 2017. Twenty-seven submissions were received during the exhibition period addressing a range of issues including:

- Impacts to road safety, road condition and traffic conditions due to increased haulage truck movements
- Request for upgrade of the haulage route
- Impacts to road safety, road condition and traffic delays because of current and increased haulage truck movements on the local road network
- Noise impacts due to haulage truck movements
- Borrow site operating hours.

Mitigation measures proposed for the modification have been amended to reflect issues raised during the exhibition process. After consideration of the issues raised in the public submissions, no further changes to the proposed design or operations have been proposed.





# 1 INTRODUCTION

## 1.1 BACKGROUND

On behalf of the Australian and NSW governments, NSW Roads and Maritime Services (Roads and Maritime) is progressively upgrading the Pacific Highway to dual carriageway between the Hunter and NSW/Queensland border.

The Woolgoolga to Ballina Pacific Highway Upgrade, (the Approved Project), involves upgrading approximately 155 kilometres (km) of highway to four-lane dual-carriageway road between Woolgoolga (north of Coffs Harbour) and Ballina on the NSW north coast (refer Figure 1-1). The project bypasses the towns of Grafton, South Grafton, Ulmarra, Woodburn, Broadwater and Wardell. The project will include road duplication, alignment modification and new road sections. Once complete, the project will create a four-lane divided road, with two lanes in each direction. It would also allow for the road's upgrade in the future to a six-lane divided highway.

The Approved Project was declared critical State significant infrastructure (SSI) under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Before approving the application, the Woolgoolga to Ballina Pacific Highway Upgrade Environmental Impact Statement (RMS, 2012), was publicly displayed for 60 days between December 2012 and February 2013, inclusively. The exhibition generated 145 submissions, which were responded to in the Woolgoolga to Ballina Pacific Highway Upgrade Submissions / Preferred Infrastructure Report, issued in November 2013 (RMS, 2013). The project was approved by the Minister for Planning on 24 June 2014.

The Approved Project has also been subject to approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The project was declared by the Commonwealth Minister for Sustainability, Environment, Water, Populations and Communities (now the Department of the Environment and Energy) to be a controlled action under this Act on 20 June 2012. Approval was granted by the Commonwealth Government on 14 August 2014.

Roads and Maritime Services has engaged Pacific Complete (which comprises Laing O'Rourke and WSP (formerly WSP | Parsons Brinckerhoff) to partner with the Pacific Highway Office to deliver the 155 km Woolgoolga to Ballina Pacific Highway Upgrade.

## 1.2 THE APPROVED PROJECT

The Approved Project consists of the upgrade of the Pacific Highway between Woolgoolga to Ballina to a four-lane standard highway (known as a class M highway). This section of the highway is approximately 155 km long (refer to Figure 1-1).

The W2B EIS identifies the key sources of material for the project as major cuttings or borrow sites along the project alignment. Several borrow sites were identified in the W2B EIS and/or the W2B SPIR to provide material for the construction of the project. The current earthworks balance for the Approved Project identifies a large deficit of material, therefore the required material cannot be sourced from within the project boundary. Material would therefore be required to be imported from external quarries or other borrow sites near the project. The potential to develop other borrow sites near the project is discussed in the W2B EIS in the circumstance where there is a shortfall of material for the construction of the project.

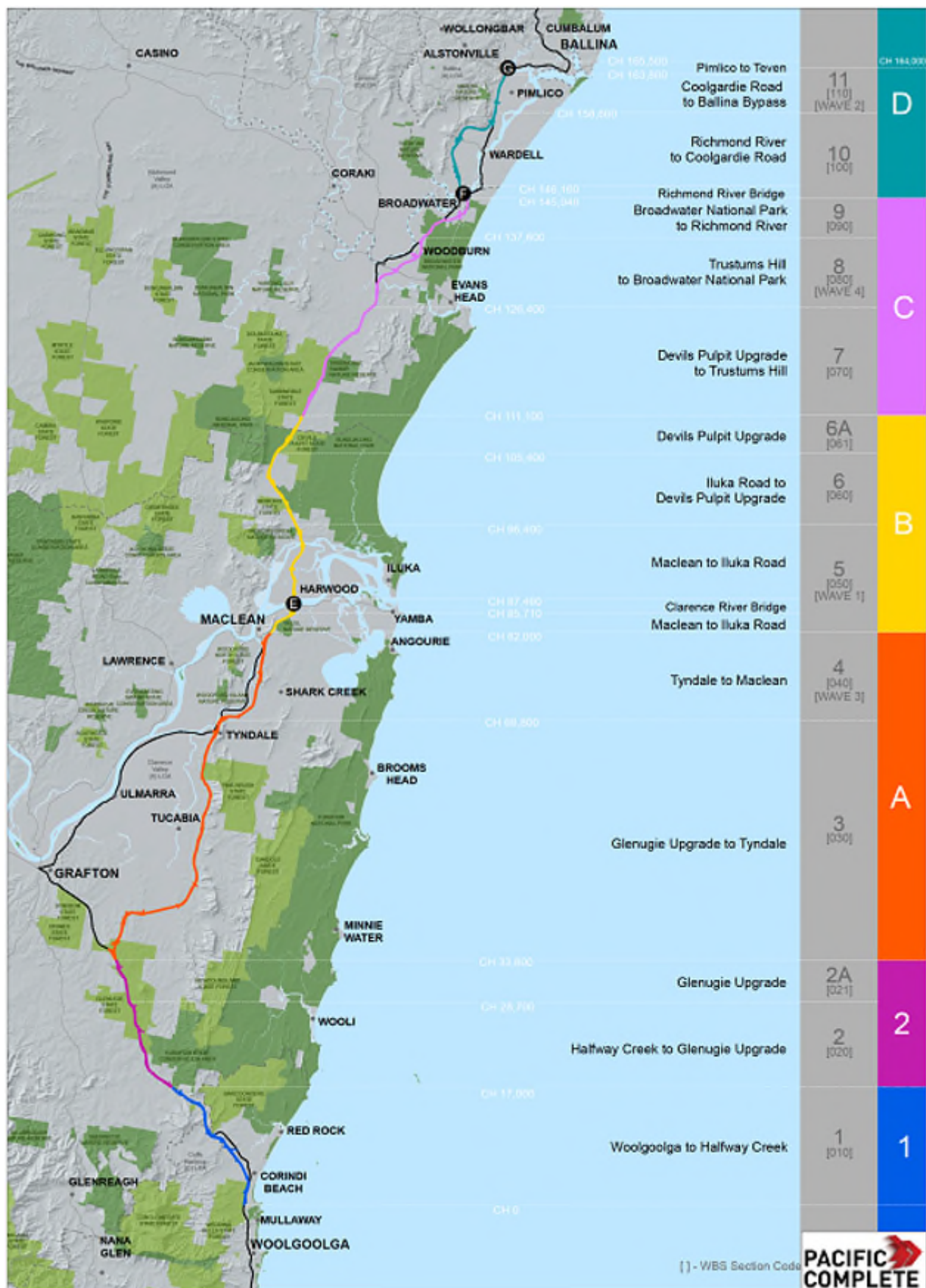


Figure 1-1 Pacific Highway Upgrade Woolgoolga to Ballina Approved Project

### 1.3 THE MOONIMBA BORROW SITE

The Moonimba Borrow Site currently operates under Development Application (DA127/95). A new Development Application was submitted by the current site operator in 2015 (DA2015.0069) for the expansion of the excavation areas and an increase in the amount of material which can be extracted and transported annually. The *Moonimba Quarry Expansion Bungawalbin NSW Environmental Impact Statement* (Newman's Quarry & Landscape Supplies, 2014) (Moonimba EIS) was prepared to accompany DA2015.0069. Development consent was granted by Richmond Valley Council in May 2015, with 34 conditions of approval, however this consent has not been activated and associated works have not commenced.

### 1.4 THE PROPOSED MODIFICATION

A modification of the Woolgoolga to Ballina Project Approval is being sought for the use of the Moonimba Borrow Site (previously known as the Moonimba Quarry), for the supply of material for the construction of the Woolgoolga to Ballina Pacific Highway Upgrade. The proposed modification would allow for the extraction and supply of one million tonnes of material per annum (equivalent to 400,000 cubic metres) for a period of two years or until the material demand for the project ceases. This would provide two million tonnes of material in total which would meet the deficit of material in demand for the delivery of the Approved Project.

The proposed Moonimba Borrow Site consists of:

- Two excavation areas, known as the eastern pit (13 hectares (ha)) and the western pit (8 ha)
- An access track leading from Boggy Creek Road to the two excavation areas
- Associated infrastructure including a site office and staff amenities located adjacent to the access track to the north of the two excavation areas
- Clearing of approximately 9.5 ha of vegetation within the footprint of the excavation areas.

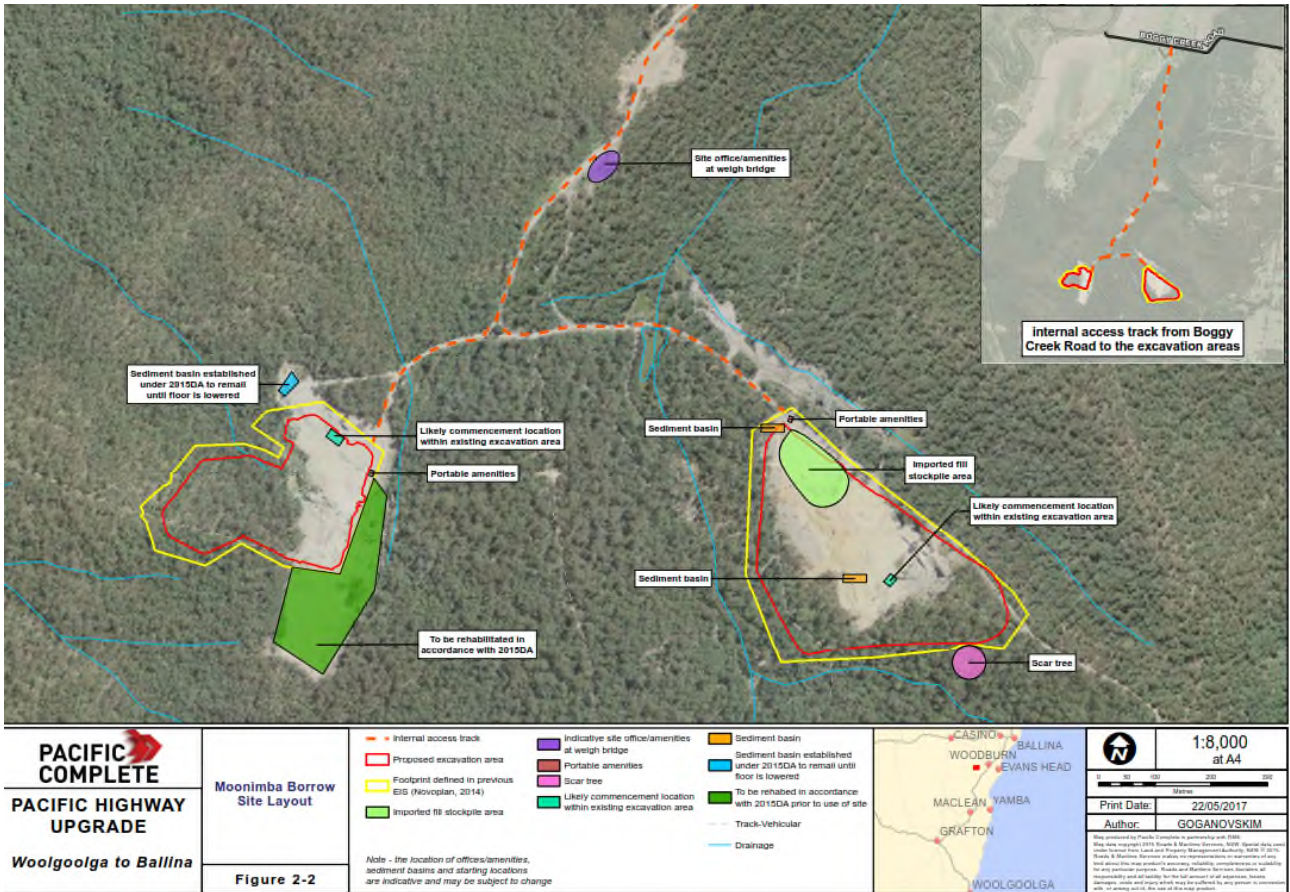
Figure 1-2 provides an indicative layout of the Moonimba Borrow Site. A more detailed description of the proposed modification is found in the *Temporary Intensification of Operations at Moonimba Borrow Site – Environmental Assessment Modification Report* prepared by Pacific Complete on behalf of Roads and Maritime Services in August 2017.

Environmental impacts associated with operation of the Moonimba Borrow Site are assessed in Section 4 of the *Temporary Intensification of Operations at Moonimba Borrow Site – Environmental Assessment Modification Report* ('the modification report') prepared on behalf of Roads and Maritime Services in August 2017. Notable additional impacts include:

- Generation of up to 300 heavy vehicle movements per day which would utilise the local road network to delivery material to the Approved Project
- Noise impacts for sensitive receivers located along the haulage route (including Woodburn Coraki Road) during the hours of operation
- Clearing of 9.5 hectares of vegetation within the footprint area which was previously approved under DA2015.0069
- Potential to generate sediment-laden runoff from erosion of stockpiles, earth barriers, work areas, haul roads and other disturbed areas.



[insert figure]



### Figure 1-2 The proposed modification

## 1.5 STATUORY CONTEXT

Roads and Maritime considers that the proposed modification as outlined above is not consistent with the approval for the project. Accordingly, Roads and Maritime is seeking a modification of the Minister's approval under Section 115ZI of Part 5.1 of the EP&A Act. An application letter was submitted to the Department of Planning and Environment on 21 August 2017. In accordance with the EP&A Act, the *Temporary Intensification of Operations at Moonimba Borrow Site – Environmental Assessment Modification Report* ('the modification report') was prepared to assess the potential impacts of the proposed modification.

## 1.6 ENVIRONMENTAL ASSESSMENT MODIFICATION REPORT EXHIBITION

The *Temporary Intensification of Operations at Moonimba Borrow Site – Environmental Assessment Modification Report* was exhibited by the Department of Planning and Environment for 15 days from 11 September and 25 September 2017. The modification report was exhibited at the following three Richmond Valley Council locations:

- Evans Head Library, Woodburn Street, Evans Head
- Casino Administration Office, Corner Walker Street & Graham Place, Casino
- Coraki Library, Adams Street, Coraki.

The modification report was also available at the Pacific Highway Office in Grafton, and on display during two community information sessions held at Woodburn Visitor Information Centre, 114 River Road, Woodburn.

The sessions were held on:

- Thursday 14 September Noon – 2pm
- Monday 18 September 5.30pm – 7.30pm.

Pacific Complete leads from construction, environment, quarry management and community consultation were in attendance. The display locations and website link were advertised in the Lismore Northern Star on 9 September 2017. During this time, the public was invited to provide feedback and make comments. This was supported by holding two community feedback/consultation sessions with residents and businesses that would be directly affected by the proposed modification.

## 1.7 COMMUNITY CONSULTATION INFORMATION SESSIONS

Two community consultation sessions were held during the exhibition of the modification report. The events took place at Woodburn Visitor Information Centre. Sessions were held from 12pm to 2pm on Thursday 14 September, and from 5:30pm to 7:30pm on Monday 18 of September. These sessions were attended by the Pacific Complete Project Manager, Environmental Advisor, Moonimba Quarry Manager and Pacific Complete Senior Communications Officer.

Two bound copies of the modification report were displayed and relevant sections were tagged for easier access (ex. haulage, access, etc). A total of 21 people attended the two sessions, with only one person in attendance at both sessions. Key areas of concern and discussion included:

- Increased vehicle movements
- Management of vehicle speeds
- Drive code of conduct
- Access to antennas
- Encroachment on landowner boundaries
- Road junctions
- Road markings
- Ongoing road condition and maintenance

- School bus zones
- Sunday hours.

## **1.8 PURPOSE OF THIS REPORT**

During the exhibition of the modification report, 27 submissions were made. The Secretary of the Department of Planning and Environment provided copies of the submissions to Roads and Maritime Services. In accordance with section 115Z(6) of the EP&A Act, the Secretary required Roads and Maritime Services to submit to the Secretary:

- a) A response to the issues raised in those submissions
- b) A preferred infrastructure report if required that outlines any proposed changes to the State significant infrastructure to minimise its environmental impact or to deal with any other issue raised during the assessment of the application concerned.

This report identifies the issues raised during exhibition of the modification report and provides responses to each issue (refer to Chapter 2). It identifies new or revised environmental safeguards and management measures (refer to Chapter 3).

## 2 RESPONSES TO ISSUES

### 2.1 RESPONDENTS

Roads and Maritime received 27 submissions from individuals and government agencies, accepted up until 25 September 2017. This included submissions from six government agencies and 21 community members. Table 2-1 lists the respondent's submission number and where comments raised by each submission have been addressed in Chapter 3 of this report.

**Table 2-1 Respondents to the modification report**

Respondent	Number	Section where issues are addressed
Community member: individual	1	2.6.2, 2.6.5, 2.7.2, 2.11,
Community member: individual	2	2.6.2, 2.6.5, 2.7.2, 2.8
Community member: organisation	3	2.4, 2.6.2, 2.11, 2.12, 2.13
Community member: individual	4	2.6.2, 2.6.5, 2.7.2, 2.8, 2.10, 2.11
Community member: individual	5	2.6.2, 2.6.5, 2.8, 2.11, 2.13
Community member: individual	6	2.3, 2.6.4, 2.6.5, 2.7.1,
Community member: individual	7	2.6.4, 2.6.5, 2.7.3, 0
Community member: individual	8	2.5, 2.6.5, 2.6.8
Community member: individual	9	2.6.4, 2.8, 2.10
Community member: individual	10	2.4, 2.6.4, 2.6.5
Community member: individual	11	2.5, 2.6.4, 2.6.5
Community member: organisation	12	2.7.3, 2.8, 2.12, 2.13
Community member: individual	13	2.5, 2.6.4, 2.6.5, 0
Community member: individual	14	Project Support
Community member: individual	15	Project Support
Community member: business (existing quarry operator)	16	2.3, 2.6.1, 2.6.2, 2.6.3, 2.6.4, 2.6.6, 2.7.1
Community member: business (existing quarry operator)	17	2.5, 2.7.3, 0
Community member: individual	18	2.6.1, 2.6.3, 2.6.5, 2.6.8
Community member: individual	19	2.6.1, 2.6.3, 2.6.4, 2.6.5, 2.6.6
Community member: individual	20	Project Support

Respondent	Number	Section where issues are addressed
NSW EPA	21	No comments raised
NSW Rural Fire Service	22	2.6.7
Department of Primary Industries	23	2.9
NSW Telco Authority	24	2.6.7
Richmond Valley Council	25	2.4, 2.5, 2.6.3, 2.6.4, 2.6.5, 2.6.9, 2.7.1, 0
Planning & Environment: Resources & Geosciences	26	2.5
Community member: business	27	2.6.7

## 2.2 OVERVIEW OF THE ISSUES RAISED

The Department of Planning and Environment received a total of 27 submissions in response to the exhibition of the modification report comprising six government agencies and 21 community responses.

Each submission has been examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided. Where similar issues have been raised in different submissions, only one response has been provided. The issues raised and Roads and Maritime Services response to these issues forms the basis of this chapter.

Of the community submissions:

- 14% percent supported the proposed modification
- 81% percent objected to the proposed modification
- 5% percent did not offer a position on the proposed modification.

Table 2-2 summarises the main comments raised by each responding groups.

**Table 2-2 Summary of main issues raised by respondent group**

Respondent group	Main comments or issues
Agency	<ul style="list-style-type: none"> <li>• Impacts to road safety, road condition and traffic conditions due to increased haulage truck movements</li> <li>• Request for upgrade of the haulage route</li> </ul>
Community	<ul style="list-style-type: none"> <li>• Impacts to road safety, road condition and traffic delays because of current and increased haulage truck movements on the local road network</li> <li>• Noise impacts due to haulage truck movements</li> <li>• Borrow site operating hours</li> </ul>



## 2.3 PROPOSED MODIFICATION JUSTIFICATION

### SUBMISSION NUMBER(S)

6, 16

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Insufficient evidence has been provided to demonstrate that the proposed modification provides improved public value for money in comparison with other existing quarries closer to the alignment
2. Eaton's Quarry can provide the required material to Portion C of the project via the existing alignment of the Pacific Highway – the same can also be applied to the adjacent Montis Quarry
3. Gittoes Quarry at Broadwater is closer to the project than the Moonimba Borrow Site and therefore haulage costs are less and would utilise the existing alignment of the Pacific Highway from the north. However the quarry was advised that it did not meet probity requirements and would not be fair to other operators
4. Woodburn Quarry is closer to the project alignment
5. Petersons and Coraki quarries can also supply the required material and, being existing operations, would also have less impact
6. Intensification in use of the borrow site for the Approved Project would reduce the material available to local construction businesses who would be required to purchase materials from more distant quarries and experience increased transportation costs.

### RESPONSE

As discussed in section 2.5 of the modification report, three of the four quarries identified in the area are located on the northern side of the Richmond River (for example Eaton's & Montis quarry) and would require haulage of material on the existing Pacific Highway, & through the village of Wardell, prior to the completion of the new Richmond River bridge. Pacific Complete made a commitment in the *Construction Traffic and Access Management Plan* and the Submissions / Preferred Infrastructure Report (refer to mitigation measure EMM T&T 2) to limit heavy vehicle haulage through Wardell as far as is feasible for the duration of construction. Therefore, the use of the northern quarries would not be feasible to regularly supply areas located south of Broadwater until the new bridge is constructed over the Richmond River. Delaying haulage from these quarries until the bridge over the Richmond River is operational will not meet the overall project timelines. The Moonimba Borrow Site is located on the southern side of the Richmond River and is not restricted by use of the Richmond River Bridge.

The Peterson and Coraki quarries are both located further away from the alignment than the Moonimba Borrow Site and are currently operating as commercial quarry sites and as such were not selected. Additionally, the Moonimba site was selected as it is not currently being operated, holds the specific type and quantities of materials needed to support construction of the highway, is large enough to supply the materials needed in one location (rather than spread across several), and meets the environmental requirements for a borrow site as set forth in the conditions of approval for the project.

The use of Moonimba Quarry provides RMS with a guaranteed certainty of supply with the timing required for the delivery of this section of the project.

Operation of commercial quarry sites (for instance, Woodburn or Gittoes quarries) would not meet project requirements since these quarry sites do not contain sufficient type or quantities of material to supply the project and sourcing material from these sites would reduce the amount of available material for other local projects and independent buyers in the area.

The operation of quarries as a local supplier was considered as part of the site selection process and quarries which supply a high percentage of local material were less favoured. The Moonimba site was selected as it is not currently being operated, holds the specific type and quantities of materials needed to support construction of the highway, is large enough to supply the materials needed in one location (rather than spread across several). This would ensure that the needs of local businesses are still able to be met from current quarries.

## **2.4 STATUTORY AND PLANNING**

### **SUBMISSION NUMBER(S)**

3, 10, 25

### **ISSUE DESCRIPTION**

The respondents raised the following issues:

1. The three options provided on the submissions form for respondents to express their position on the project are limited
2. The submissions received are not properly considered by the proponent
3. Requests additional information regarding the interaction between the currently approved development application and the proposed modification.

### **RESPONSE**

The online submissions form is provided by the Department of Planning and Environment and is common to the approval process for all major projects. Space is provided for respondents to provide details of their response. All submissions are considered by the proponent and DPE and assist in the assessment of the proposed modification by DPE.

There is a current DA in place for the quarry (DA 127/95) which grants consent for the extraction of 30,000 m<sup>3</sup>/year. A new DA (DA2015.0069) was applied for and granted by Richmond Valley Council to allow the extraction of 90,000 m<sup>3</sup>/year. DA2015.0069 has not yet been activated and will only do so when a number of conditions are met, at which time, the current DA (DA127/95) will cease to be active. Once approval for the modification is received, the DA2015.0069 will be suspended for the duration of the modification. Extraction will occur under the modification and any associated conditions of approval for the two million tonnes of material required for the project. By 2020, and on completion of the highway, the modification will be extinguished and the DA2015.0069 will recommence with the relevant extraction limits in place.

## **2.5 BORROW SITE OPERATION**

### **SUBMISSION NUMBER(S)**

6, 8a, 11, 13, 17, 25, 26

### **ISSUE DESCRIPTION**

The respondents raised the following issues:

1. Clarification regarding the proposed length of operations associated with the proposed modification
2. Suggested that the Borrow Site operating hours be limited to 1pm on Saturdays rather than the current time of 5pm
3. The Borrow Site should limit blasting activities to hours between 9am and 3 pm Monday through Friday
4. The quantity of water necessary for operations

5. Annual production data be provided to the NSW Division of Resources and Geoscience as a condition of consent.

## RESPONSE

As discussed in section 2.2.3 '*Length of Operation and Proposed Hours of Operation*', operations under the proposed modification would be enacted for approximately two years (or until demand for the Approved Project ceases). The two-year timeframe reflects the current program of construction for the Approved Project which is aimed to reach completion in 2020. Where there are program delays for the delivery of the Approved Project, the allowance has been made to extend operations under the proposed modifications to continue supplying to the Approved Project until construction ceases. Given the operation of the Moonimba Borrow Site would be associated exclusively with the Approved Project through a modification of the SSI approval, use of the Moonimba Borrow Site for supply to any other projects would require additional project approvals.

Operating hours on Saturdays would be maintained to 5 pm in line with the current approvals for the project. Haulage may be required from 1-5 pm on Saturdays, however where possible, most haulage would be done from Monday to Friday during approved hours and Saturday to 1 pm.

Blasting regimes would be carried out in accordance with current project approvals. Where possible, the majority of blasting will be undertaken Monday to Friday 9 am to 3 pm, however additional blasting may be required outside these hours.

Proposed operations under the modification would utilise up to 100,000 litres of water per day at peak. However during production, the average operations would require about 20,000 litres of water per day. Water would be sourced from existing sediment basins. Where further supply is needed, the appointed contractor would be required to obtain all relevant permissions, permits and/or licenses. As discussed in Appendix H of the modification report, activities proposed are not anticipated to impact adjacent waterways, subsurface expressions of groundwater or groundwater dependent ecosystems.

Accurate records will be kept by the operator of the Moonimba Borrow Site which would include production data. The production data would be made available through existing reporting to meet the requirements by the Department of Planning and Environment, and the Environment Protection Authority.

## 2.6 TRAFFIC, TRANSPORT AND ACCESS

### 2.6.1 ASSESSMENT ADEQUACY

#### SUBMISSION NUMBER(S)

16, 18, 19, 25

#### ISSUE DESCRIPTION

The respondents raised the following issues:

1. 2014 traffic counts used for the traffic assessment were no longer representative of the existing traffic environment
2. Traffic assessment does not sufficiently cover the Reardons Lane and Woodburn-Coraki intersection or rural residential land releases as part of the Richmond Valley Rural Residential Land Strategy.
3. Cumulative impacts associated with the Coraki Quarry were not considered.

## RESPONSE

As discussed in section 4.1 of the modification report, traffic volumes calculated within the 2014 Moonimba EIS were conservatively grown using local traffic rates, to account for current traffic volumes within Woodburn. This was considered to be representative of the existing traffic conditions in the area.

In addition, all known land releases, changes to land use and cumulative impacts of nearby quarries were considered as part of the traffic assessment for the proposed modification (refer to Appendix C of the modification report).

Based on the existing intersection traffic volumes anticipated at the Woodburn-Coraki Road and Reardons Lane intersection and the AUSTROADS *Part 4a: Unsignalised and Signalised Intersection Criteria*, the existing Type BA intersection would have adequate capacity.

## 2.6.2 IN VEHICLE MONITORING SYSTEMS

### SUBMISSION NUMBER(S)

1, 2, 3, 4, 5, 16

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. In vehicle monitoring systems in trucks is not sufficient/effective at preventing speeding and unsafe driving behaviours.

### RESPONSE

In vehicle monitoring systems (IVMS) are a requirement of all site vehicles for the project and have been working well for some time on the project. In addition to the IVMS, all drivers will undertake driver induction and awareness training which will include a Code of Conduct as well as regular drug and alcohol testing. Intersection upgrades will be carried out as described in the modification report to improve road safety. These intersection upgrades are consistent with the requirements of the DA Approval DA2015.0069 and AUSTROADS *Part 4a: Unsignalised and Signalised Intersection Criteria*.

A traffic management plan (TMP) would be prepared in accordance with the W2B CTAMP (Appendix B1 of the CEMP). This would include the above controls as well as traffic controllers, variable message signs and adequate tapering to manage road safety during the operation of the proposed modification.

## 2.6.3 INTERSECTIONS

### SUBMISSION NUMBER(S)

16, 18, 19, 25

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. The need to upgrade the Woodburn-Coraki Road and Pacific Highway intersection to include a right-turn movement onto Woodburn-Coraki Road
2. Reardons Lane and Woodburn-Coraki Road intersection was not adequately assessed and will be dangerous. Particular mention is made of right-turn movements from Reardons Lane onto Woodburn-Coraki Road which would form part of the proposed haulage route and the lack of slip lanes eastbound on Woodburn-Coraki Road
3. Casuarina Drive and Reardons Lane Intersection was not adequately assessed and is dangerous due to 100 km speed limit
4. Suggested upgrade of the Casuarina Drive intersection.

### RESPONSE

Channelisation of the right-turn along the southbound movement of the Pacific Highway, is warranted based upon AUSTROADS Part 4A: *Unsignalised and Signalised Intersections Criteria*. (refer Figure 5-5 in

Appendix C of the modification report). This recommendation accommodates the anticipated 300 truck movements daily and 16 truck movement hourly. This equates to approximately one truck every four minutes. There is provision for the right turn bay to accommodate at least two trucks simultaneously.

The Reardons Lane and Coraki-Woodburn Road intersection has been assessed and will be upgraded with a deceleration lane on Coraki-Woodburn Road for left-turning vehicles into Reardons Lane. These works will be carried out as part of the requirements prior to activation of the DA2015.0069.

Additionally, a Road Safety Audit along the haulage route, including the Pacific Highway, will be carried out before operation of the proposed modification begins. The Road Safety Audit will identify the necessary safety, sight distance, speed, vertical and horizontal design provisions, for adequate conversion to channelisation. Recommendations from the audit will be implemented before operation of the proposed modification begins.

## 2.6.4 ROAD CONDITION

### SUBMISSION NUMBER(S)

6, 7, 9, 10, 11, 13, 16, 19, 25

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. The current condition of Woodburn-Coraki Road
2. Whether maintenance would be undertaken on Woodburn-Coraki Road
3. Requested the proposed road works under DA2015.0069 be applied to the proposed modification
4. Requested that road contributions be imposed on the proposed modification
5. Requested that the standard of pavement required in DA2015.0069 be increased to 500 metres down Boggy Creek Road due to increased truck movements associated with the proposed modification
6. Requested additional upgrades to the Reardons Lane / Woodburn Coraki Road intersection.

### RESPONSE

As detailed in the approved Woolgoolga to Ballina (sections 3-11) *Construction Traffic and Access Management Plan*, a dilapidation survey would be carried out before work begins and following the completion of work for the proposed modification. Roads and Maritime would return the road to a condition equal to that before the commencement of work in consultation with Richmond Valley Council and relevant stakeholders.

Road upgrades specified by approved DA2015.0069 would be completed prior to the commencement of increased haulage of extracted material from the borrow site. In accordance with Clause 16 of the executed lease between Roads and Maritime and the quarry owner, Roads and Maritime will be responsible for ongoing compliance of DA 127/95 and DA 2015/0069 as it relates to road maintenance contributions and licences. Roads & Maritime have an agreement with the quarry owner for the quarry owner to pay for road maintenance contributions & licenses, in accordance with DA 127/95 and DA 2015/0069.

A Road Safety Audit will be undertaken on the haulage route and recommendations from the audit will be implemented prior to commencement of site operations.

## 2.6.5 ROAD SAFETY

### SUBMISSION NUMBER(S)

1, 2, 4, 5, 6, 7, 8a, 8b, 10, 11, 13, 18, 19, 25

## ISSUE DESCRIPTION

The respondents raised the following issues:

1. The dangerous nature of the road network due to current truck movements
2. Greater risks to the local community due to the proposed increase in truck movements
3. Requested that a widening works take place on Reardons Lane between Casuarina Drive and Boggy Creek Road
4. Requested that a Road Safety Audit be carried out before approval is achieved
5. Requested decrease in speed limit from 100 km/hr to 80 km/hr on the proposed haulage route.

## RESPONSE

A site-specific traffic management plan (TMP) would be prepared in accordance with the approved Woolgoolga to Ballina (sections 3-11) *Construction Traffic and Access Management Plan* (Appendix B1 of the CEMP). This would include traffic controllers, variable message signs and adequate tapering to manage road safety during the operation of the proposed modification. The TMP would include provisions for driver training and induction and for all drivers to sign a Code of Conduct acknowledging that they agree to comply with the requirements of the TMP as well as regular drug and alcohol testing. The Code of Conduct would detail the approved haulage route, operation hours for travel to and from the site, speeds, measures to reduce traffic noise, safe distances between trucks, traffic safety and courteousness, locations of sensitive receivers, identification and enforcement. In Vehicle Monitoring Systems (IVMS) would also be used to provide real-time tracking of individual truck speeds, heavy braking, travelling proximity to buses and other haulage vehicles. In addition, all mitigation and management measures as described in the Moonimba EIS (refer to section 5.6.3 of the Moonimba EIS) and modification report (refer to section 4.1.5) would be included.

Intersection upgrades to provide a right-turn bay on the Pacific Highway into Woodburn-Coraki Road would be carried out as described in the modification report to improve road safety. Road improvement work will be carried out as described under DA2015.0069.

A Road Safety Audit will be carried out before the start of work for the proposed modification. The outcome of the Road Safety Audit will determine what speed limit can be imposed on the haulage route. Any changes to the speed limit on the haulage route would be made based off recommendations from this report.

Speed limits along the haulage route were outlined under DA2015.0069 including a limit of 60 km/h on Reardons Lane between Boggy Creek Road and Woodburn-Coraki Road. A Road Safety Audit will be carried out before operation of the proposed modification begins. The Road Safety Audit will identify the necessary safety, sight distance, speed, vertical and horizontal design provisions along the haulage route. Where identified by the Road Safety Audit, speed limits will be implemented for the duration of the proposed modification.

### 2.6.6 TRAFFIC DELAYS

#### SUBMISSION NUMBER(S)

16, 19

#### ISSUE DESCRIPTION

Two respondents expressed concern that the additional truck movements would cause delays in the local road network, particularly at the Woodburn-Coraki Road intersection particularly during peak periods

## RESPONSE

A traffic impact assessment was conducted for the proposed modification (refer to section 4.1 and Appendix C of the modification report). This assessment concluded that where road and intersection upgrades are undertaken, that the haulage route would provide adequate capacity to service the predicted vehicle numbers.

The traffic impact assessment identified the Woodburn-Coraki Road/Pacific Highway intersection as the most critical on the haulage route. As such, intersection improvements in the form of a channelised right turn bay would be carried out and would consist of implementing a right turn bay with sufficient room on the left for vehicles to pass if they are continuing straight. This would improve road safety and manoeuvrability for construction and local vehicles. In addition, traffic controllers, variable message signs and tapering would be provided to manage this intersection during peak construction periods in line with the proposed modification traffic management plan. The traffic management plan would be prepared in line with the approved Woolgoolga to Ballina Pacific Highway Upgrade (sections 3 to 11) *Construction Traffic and Access Management Plan* (CTAMP), Appendix B1 of the CEMP. Once upgrades under approved DA2015.0069 are completed, the haulage route would have adequate capacity to service the haulage vehicle movements.

### 2.6.7 ACCESS

#### SUBMISSION NUMBER(S)

22, 24, 27

#### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Requested an access management strategy for service providers and emergency services to the communication facilities located via the internal access road in the Moonimba Borrow Site on Reardons Lane.

## RESPONSE

Access agreements will be established in consultation with the relevant authorities prior to the commencement of operations within the site. An access management plan will be prepared for the construction and operation of the proposed modification to ensure access to communication facilities is maintained. This management plan would outline details of sign in and out, visitor induction, vehicle safety and PPE requirements.

### 2.6.8 BUS STOPS

#### SUBMISSION NUMBER(S)

8a, 18

#### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Changes to bus and school bus routes.

## RESPONSE

All trucks will be required to maintain a safe distance from school buses and haulage times will be restricted to outside peak school periods where possible. Trucks will be equipped with In Vehicle Monitoring Systems (IVMS) to monitor adherence. The TMP would include provisions for driver training and induction and for all drivers to sign a Code of Conduct acknowledging that they agree to comply with the requirements of the TMP (refer to DA2015.0069). The Code of Conduct would detail the approved haulage route, operation



hours for travel to and from the site, speeds, measures to reduce traffic noise, safe distances between trucks, traffic safety and courteousness, locations of sensitive receivers, identification and enforcement

## 2.6.9 MITIGATION MEASURES

### SUBMISSION NUMBER(S)

25

### ISSUE DESCRIPTION

The respondent raised the following issue:

1. Impacts to the local road network are acknowledged, however no mitigation measures have been proposed for the impacts to road pavements.

### RESPONSE

Traffic impacts associated with proposed modification would be managed under the mitigation and management measures as outlined in the approved Woolgoolga to Ballina Pacific Highway Upgrade (sections 3-11) *Construction Traffic and Access Management Plan* (CTAMP), Appendix B1 of the CEMP and Section 4.1.5 of the modification report. As detailed in the approved Woolgoolga to Ballina (sections 3-11) *Construction Traffic and Access Management Plan*, a dilapidation survey would be carried out before work begins and following the completion of work for the proposed modification. Roads and Maritime would return the road to a condition equal to that before the commencement of work in consultation with Richmond Valley Council and relevant stakeholders.

## 2.7 NOISE AND VIBRATION

### 2.7.1 ASSESSMENT ADEQUACY

### SUBMISSION NUMBER(S)

6, 16, 25

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Perceived that a number of residences adjoining Reardons Lane were omitted from the noise assessment conducted for the modification due to the labels within Figure 4-4 in the modification report
2. 2014 traffic counts used for the traffic assessment were no longer representative of the existing traffic environment and the noise assessment should be redone with more recent data
3. Suitability of the proposed noise wall for material and truck movements under the modification.

### RESPONSE

As discussed in Section 4.3.4 in the modification report (refer to sub-section labelled 'Road Noise'), the Noise and Vibration Assessment examined compliance with the NSW Road Noise Policy for the haulage route identified for the proposed modification. NSW Road Noise Policy requires assessment in two areas:

- Potential exceedances of the daytime noise criteria
- Potential increases of over 2dB of noise generated by traffic (within the specified sampling period).



The assessment identified one address located on Reardons Lane which would likely experience an exceedance of the daytime noise levels specified in the NSW Road Noise Policy along the haulage route associated with the proposed modification, and a total of eight addresses on Boggy Creek Road / Reardons Lane were identified which would likely experience increases greater than 2dB in noise generated by traffic.

The reason the eight properties in this location were identified is largely attributed to heavy vehicles slowing down and speeding up around the intersection of the Boggy Creek Road / Reardons Lane intersection and the sparse amount of traffic being generated in the area currently. The addresses shown in Figure 4-4 correspond with the eight potentially impacted addresses (these are listed in Table 17 of Appendix D '*Noise Impact Assessment*'). It is acknowledged in Appendix D '*Noise Impact Assessment*' that properties along or near Woodburn Coraki Road would likely experience increases in noise due to increased heavy vehicle movements, but the projected increases fall within the guidelines set by the NSW Road Noise Policy (below 2dB increase).

Additionally, it is important to note that Figure 4-4 shows addresses associated with the potential exceedances of the NSW Road Noise Policy and does not provide a full overview of all sensitive receivers in the area.

The 2014 traffic count is considered to be representative of the existing traffic conditions in the area and increases in traffic volume since this time would not be expected to be significant.

Section 7.3.1 of the Noise and Vibration Assessment addresses the suitability of the noise wall and found that a standard construction wall would break line-of-sight and therefore be sufficient, by providing a 5 dB reduction - provided the recommendations contained within 7.3.1 are adhered to.

## 2.7.2 OPERATIONAL NOISE

### SUBMISSION NUMBER(S)

1, 2, 4

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Reduced amenity due to truck noise and vibration from increased truck movements
2. Reduced amenity due to noise from operational activities such as drilling and blasting.

### RESPONSE

A Noise and Vibration Assessment was conducted as part of the modification report (refer to section 4.3 and Appendix D of the modification report) to assess potential noise impact generated by facility operations and transportation of materials along the elected haulage route. Mitigation measures identified by this report will be implemented during the construction and operation of the proposed modification. These measures include a program of regular noise monitoring, to ensure that noise emissions do not exceed relevant criteria and predicted noise values. Should a noise complaint be received in relation to the Borrow Site or haulage route, subsequent monitoring would be undertaken and relevant mitigations discussed with the landowner.

A blast management plan would be prepared by the contractor prior to any blasts occurring at the site to ensure compliance with overpressure and vibration limits outlined in the W2B Conditions of Approval, specifically MCoA B22 and B23. MCoA details the criteria for airblast overpressure generated by the project, whilst MCoA B23 details the criteria for ground vibration generated by blasting associated with the project.

## 2.7.3 VIBRATION

### SUBMISSION NUMBER(S)

7, 12, 17

## ISSUE DESCRIPTION

The respondents raised the following issues:

1. Potential for structural damage to property as a result of vibration from truck movements
2. Potential vibration impacts to the radio tower as a result of blasting activities.

## RESPONSE

A pre-construction condition report will be carried out of houses on the proposed haulage route as agreed with land owners. This report would identify any pre-existing issues such as cracking or building defects at the properties before the start of operations for the proposed modification.

A Blasting and Vibration Impact Assessment was conducted for the Moonimba EIS. This report assessed the impacts of proposed blasting on the nearest residential lots and potential flyrock, ground vibration and airblast overpressure impacts. The report found that blasting monitors located at the residential properties have not been triggered in the previous 10 years of quarry operation. It was therefore concluded that blasting can be undertaken at the site which would not exceed the acceptable criteria of 115 dB(L) for airblast overpressure or 5 mm/s for vibration at the nearest residences, provided that best practice techniques (as outlined in the EIS) are implemented and work is carried out in accordance with AS 2178.2 - 2006 or as approved by the regulatory authority. The report also provides an outline of the management practices to reduce flyrock, which correlates with the reduction of vibration and airblast overpressure.

A blast management plan would be prepared by the contractor prior to any blasts occurring at the site to ensure compliance with overpressure and vibration limits outlined in the W2B Conditions of Approval, specifically MCoA B22 and B23.

## 2.7.4 MITIGATION MEASURES

### SUBMISSION NUMBER(S)

7, 13, 17, 25

## ISSUE DESCRIPTION

The respondents raised the following issues:

1. Requested noise and vibration management plans for houses on the proposed haulage route
2. Requested installation of noise walls and at-property treatments such as double glazing
3. Impacts to residents along Woodburn Coraki Road have not been adequately assessed and no mitigation measures are proposed at this location.

## RESPONSE

All activities associated with the Moonimba Borrow Site will be managed in accordance with the Woolgoolga to Ballina Pacific Highway Upgrade (sections 3-11) *Construction Noise and Vibration Management Plan* (CNVMP). Mitigation measures pertaining to noise and vibration are discussed Appendix B3 of the CEMP.

A noise wall would be erected in accordance with DA2015.0069 at the affected receiver on Reardons Lane. An inspection of the noise wall will be undertaken and noise monitoring carried out to ensure sufficient noise reductions are being provided for this receiver. Other mitigation and management measures including a regular monitoring program and monitoring following valid complaints from sensitive receivers, have been recommended in the Moonimba EIS and modification report. Implementation of these measures would achieve compliance with the relevant Road Noise Policy amenity criteria.

## 2.8 BIODIVERSITY

### SUBMISSION NUMBER(S)

2, 4, 5, 9, 12

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Direct impacts to the 15 identified threatened species in the area as a result of quarry activities and vegetation clearing at the site
2. Impacts to species habitat as a result of vegetation clearing for the proposed modification
3. Requested further information on proposed protection to threatened species as a result of disturbances to habitats
4. Requested further information on regeneration planned for the site.

### RESPONSE

The biodiversity assessment (refer to section 4.5 of the modification report) confirmed that the proposed modification is unlikely to have a significant impact on threatened species, populations, ecological communities or habitats. The proposed modification will remain within the footprint assessed under the Moonimba Quarry Flora and Fauna Assessment within the Moonimba Quarry EIS, therefore the findings and outcomes of that assessment were considered to be appropriate and relevant for the proposed modification. No additional impacts are anticipated and no further management and mitigation measures above and beyond those in the Moonimba EIS and modification report are proposed.

Vegetation clearing was assessed under approved DA2015.0069 and no additional clearing would be conducted for the proposed modification. The clearing approved under DA2015.0069 will be carried out by Pacific Complete under the approved Woolgoolga to Ballina Pacific Highway Upgrade (sections 3-11) *Construction Flora and Fauna Management Plan* (CFFMP), Appendix B2 of the CEMP. This would include (but not be limited to) implementation of approved clearing procedures such as pre-clearing surveys, monitoring and management of the clearing and fencing of vegetation in line with the Biodiversity Guidelines Guide 1 (Roads and Traffic Authority, 2011). The clearing under the proposed modification would be staged, as opposed to in a single event, as approved under DA2015.0069.

Vegetation regeneration work would be carried out in line with DA2015.0069 and the Vegetation Management Plan prepared for the proposed modification. The Vegetation Management Plan would include information on proposed regeneration measures and timeframes for commencement of regeneration work such as seed collection and propagation, planting, monitoring and weed control. Regeneration would use species native to the area and replicate vegetation communities present at the site where possible.

## 2.9 HYDROLOGY, WATER QUALITY AND SOIL MANAGEMENT

### SUBMISSION NUMBER(S)

23

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Requests that the proponent quantify the increased water requirements associated with the proposed modification
2. Advises that the work approved under DA2015.0069 will require approval under the *Water Management Act 2000* before commencement of activities under this approval.

## RESPONSE

Proposed operations under the modification would utilise up to 100,000 litres of water per day at peak. However during production, the average operations would require about 20,000 litres of water per day. Water would be sourced from existing sediment basins. Where further supply is needed, the appointed contractor would be required to obtain all relevant permissions, permits and/or licenses.

## 2.10 AIR QUALITY

### SUBMISSION NUMBER(S)

4, 9

### ISSUE DESCRIPTION

Two respondents expressed concern about dust created as a result of drilling, blasting, crushing and stockpiling and as a result of truck movements from the Borrow Site.

## RESPONSE

An air quality impact assessment was prepared for the proposed modification and is described in section 4.9 of the modification report. The air quality modelling results found that cumulative particulate and pollutant levels at sensitive receivers as a result of the proposed modification would comply with the relevant ambient air quality criteria. Dust emissions would be managed in line with the Woolgoolga to Ballina Pacific Highway Upgrade (sections 3-11) *Construction Air Quality Management Plan* (CAQMP), Appendix B6 of the CEMP including use of water carts and misters for dust suppression and continuous dust monitoring on site.

## 2.11 LAND USE AND PROPERTY

### SUBMISSION NUMBER(S)

1, 3, 4, 5

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Impact of the borrow site and associated truck movements on the value of their properties
2. That fencing on properties had been destroyed by contractors
3. That blasts from borrow site activities would damage property and radio equipment.

## RESPONSE

Land values are based on Notices of Valuation provided by the Valuer General every three to four years as per the local council revaluation schedule. Valuations are not impacted by temporary changes to land use such as temporary haulage routes and as such it is not anticipated that there would be any impacts to land values in the area. In addition, the implementation of management and mitigation measures (as identified throughout the modification report and Moonimba EIS) as part of the construction and operation of the proposed modification are considered to be sufficient to minimise any potential impacts to the land values of surrounding properties.

No fences would be removed and no access would be required through private property for the proposed modification. All work at the quarry site would be contained within the sit boundary of the quarry and all haulage and work would be carried out via the identified haulage route.

A blast management plan would be prepared by the contractor in line with the W2B Conditions of Approval prior to any blasts occurring at the site. This would ensure that no blast material would impact nearby property or infrastructure.

## 2.12 BUSHFIRE

### SUBMISSION NUMBER(S)

3, 12

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. The area is prone to bushfire due to dry conditions, presence of leaf litter and lack of recent bushfires
2. Requested inspection and advice on the site from the Rural Fire Service
3. Why is the proposed modification exempt from a bushfire safety authority under section 100B of the *Rural Fires Act 1997* as a result of its status as part of an SSI project
4. Degraded condition and planned maintenance of the access road to the site and accessibility by firefighting services through the site.

### RESPONSE

The contractor for the proposed modification would be required to prepare a Bushfire Management Plan containing details of bushfire management, bushfire emergency response measures and evacuation plans. The Bushfire Management Plan would be based on consultation and feedback from the Rural Fire Service.

As the Approved Project and the proposed modification are designated as SSI, approval under the *Rural Fire Act 1997* is not required. Despite this, the requirement for bushfire assessment was considered as part of the Moonimba EIS. The EIS concluded that the borrow site is not a Special Fire Protection Purpose development, is not a subdivision for residential or rural residential purposes and there will be no fuel or explosives storage involved. As such, no special bushfire assessment report was required and the proposed modification does not require referral to the Rural Fire Service. This is consistent with the formal advice received from the Richmond Valley Council at the Pre-DA meeting with the Development Assistance Panel.

Improvements to the site access road will be carried out in accordance with approved DA2015.0069.

## 2.13 STAKEHOLDER AND COMMUNITY CONSULTATION

### SUBMISSION NUMBER(S)

3, 5, 12

### ISSUE DESCRIPTION

The respondents raised the following issues:

1. Insufficient notice and advertising was provided for the community consultation sessions
2. Lack of consultation with the radio station 88.9FM
3. Richmond Valley Council did not consult with landowners regarding the proposed modification.

### RESPONSE

Roads and Maritime endeavours to consult with all potentially affected stakeholders and community members. An initial notification letter was distributed in August 2017 to potentially affected receivers and stakeholders that contained information regarding the background and scope of the proposed modification,

traffic management, work hours and an outline of the modification approval process. A drop-in session was scheduled during the exhibition period at the Woodburn Visitor Information Centre and doorknocking and one-on-one meetings were scheduled as required.

The environmental assessment modification report was exhibited by the Department of Planning and Environment for 15 days from 11 September and 25 September 2017. Consultation will continue through the approval, construction and operation processes including with the executive of 88.9FM.

Moonimba is part of the Woolgoolga to Ballina Pacific Highway Upgrade Project and therefore deemed an SSI project. Approval for the proposed modification will therefore be sought through Department of Planning and Environment. Consultation will be carried out by Roads and Maritime.

Refer also to section 1.6 for further information about the community consultation undertaken.

## 3 REVISED ENVIRONMENTAL MANAGEMENT MEASURES

### 3.1 ENVIRONMENTAL MANAGEMENT PLANS

A range of environmental requirements and control measures have been previously prescribed for the Approved Project including mitigation measures listed within in the Submission/Preferred Infrastructure Report (November 2013) (S/PIR), the Conditions of Approval, relevant Roads and Maritime documents and the approved *Woolgoolga to Ballina (sections 3-11) Construction Environment Management Plan (W2B CEMP)* and associated sub-plans.

The environmental assessment modification report for the proposed modification identified additional measures specific to the Moonimba Borrow Site. The proposed modification would be established, operated and maintained in accordance with the requirements included in the W2B CEMP and associated sub-plans. These plans describe safeguards and management measures and provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

As outlined in Section 4.2.3 of the approved W2B CEMP, the contractor operating the Moonimba Borrow Site would be required to develop project specific environmental management documentation to address the operational control requirements outlined in the W2B CEMP. This includes the development of a borrow site management plan that would be reviewed by Pacific Complete to ensure its compliance with the relevant requirements of the W2B CEMP. Additionally, an environmental work method statement (EWMS) would be developed by the contractor for the Moonimba Borrow Site. The environmental assessment modification report identified management measures which would be incorporated into the site EWMS prepared by the contractor.

### 3.2 SUMMARY OF SAFEGUARDS AND MANAGEMENT MEASURES

After consideration of the issues raised in the public submissions, the environmental management measures for the proposed modification (refer to Chapter 4 of the modification report) have been revised. Should the proposed modification proceed, the environmental management measures in Table 3-1 will guide the subsequent phases of the development. Additional and/or modified environmental safeguards and management measures to those presented in the environmental assessment modification report have been underlined, and deleted measures, or parts of measures, have been struck out. The mitigation measures presented in Table 3-1 are in addition to mitigation measures presented in the W2B CEMP and associated sub-plans. Updates have been made to three of the mitigation measures in response to submissions received during the exhibition phase of the project. All changes to mitigation measures in Table 3-1 have been made in red.

**Table 3-1 Environmental safeguards and management measures for the proposed modification**

No	Impact	Environmental safeguards	Responsibility	Timing
MM 1	Traffic and transport	Road upgrades specified in approved DA2015.0069 would be completed prior to the commencement of increased haulage of extracted material from the Borrow Site.	Landowner / Pacific Complete	Preconstruction
MM 2	Traffic and transport	Right-turn treatment on the Pacific Highway, for vehicles to safely and efficiently access Woodburn-Coraki Road with the appropriate treatment being a channelised right turn bay on the Pacific Highway, southbound will be installed to provide a right-turn treatment on the Pacific Highway for vehicles to safely and efficiently access Woodburn-Coraki Road. This treatment requires the reconfiguration of the intersection's layout and realignment of the existing line marking.	Pacific Complete / Contractor	Preconstruction
MM 3	Traffic and transport	A traffic management plan (TMP) will be prepared in accordance with the W2B CTAMP (Appendix B1 of the CEMP). This will include <b>measures for the safe operation of the Reardons Lane / Woodburn Coraki Road intersection which may include reduced speed limits, increased signage and use of radio communication to prevent the simultaneous turning of heavy vehicles in and out of the intersection. Other measures may include</b> traffic controllers, variable message signs and adequate tapering, which will be provided to manage <b>this intersection the haulage route</b> during peaks in construction haulage activities.	Pacific Complete / Contractor	Preconstruction
MM 4	Traffic and transport	The implementation of IVMC in haulage vehicles will be investigated to monitor the location of haulage trucks during the morning and afternoon school peak traffic times so as to ensure impacts of school bus operations are minimised.	Pacific Complete / Contractor	Preconstruction Construction
MM 5	Noise and vibration	A blast management plan will be prepared by the contractor prior to any blasts occurring at the site to ensure compliance with overpressure and vibration limits outlined in the Approved Project's Conditions of Approval, specifically MCoA B22 and B23.	Pacific Complete / Contractor	Preconstruction Construction
MM 6	Noise and vibration	A program for regular noise monitoring will be established. As a minimum, noise monitoring will be undertaken for the following:  The first time any new or altered operations occur at the facility to meet the increased extraction rate (with the exception of Site Establishment works) Any time equipment changes are made	Pacific Complete / Contractor	Construction



No	Impact	Environmental safeguards	Responsibility	Timing
		Any time operations are commenced concurrently for the first time Where operations move to a new location within the approved work area As a result of a valid complaint from a surrounding noise sensitive receiver.		
MM 7	Noise and vibration	<p>Where any exceedances of the criteria are measured, the operator of the facility is to implement all reasonable and feasible measures to reduce noise levels towards the criteria. Measures may include:</p> <ul style="list-style-type: none"> <li>Erecting noise barriers, screening or forming bunds around activities which are found to cause exceedances of the criteria. Depending on the surrounding topography, localised screening around equipment may reduce noise emissions by up to 10-15 dB(A).</li> <li>Performing all noise intensive activity such as crushing and/or screening at deep excavation areas in existing pits, irrespective of extraction location.</li> <li>Managing activities that are undertaken concurrently in order to meet noise criteria. This may change dependent on the location on site due to topographical screening and distance to the surrounding receivers. In certain areas more work may be permissible concurrently than when the same work is undertaken on a different part of the site.</li> <li>Where reversing alarm noise is identified to be a source of disturbance, the alarm noise level will be checked against the appropriate regulatory and health and safety requirements and the necessary mitigating action taken to achieve an acceptable noise reduction without compromising safety standards.</li> </ul> <p>In line with the CEMP, alternative methods to traditional beeper alarms may be used.</p> <p>In the event that rumble grid noise is considered to be a source of disturbance, mitigation applied in the form of lower posted speeds at the grids or localised screening to be installed if appropriate.</p>	Pacific Complete / Contractor	Construction
MM 8	Noise and vibration	In order to manage the haulage route noise impacts, the measures detailed in the CNVMP will be followed and implemented where feasible and reasonable.	Pacific Complete / Contractor	Construction
MM 9	Noise and vibration	An inspection of the noise wall outlined in DA2015.0069 to be constructed at the affected received on Reardons Lane will be undertaken and noise monitoring carried out to ensure sufficient noise reductions are being provided for this receiver.	Pacific Complete / Contractor	Construction

No	Impact	Environmental safeguards	Responsibility	Timing
MM 10	Biodiversity	<p>A Habitat Offset arrangement of a minimum of 68 hectares with a legally binding mechanism for the protection in perpetuity of the habitat offset will be implemented in accordance with the requirements outlined in DA2015.0069. Prior to approval of the offset a suitably qualified person will be engaged to:</p> <ul style="list-style-type: none"> <li>• Undertake detailed assessment of the 90 hectare area to determine the location of the final 68 hectare area. The area shall provide habitat on a like for like basis proportional to the impacted vegetation communities.</li> <li>• The offset shall comprise a single contiguous area incorporating logical management and/or landscape boundaries that are easily identifiable and designed to minimise edge effects.</li> <li>• Investigate opportunities for securing the Habitat Offset. Preference shall be given to use of the BioBanking Scheme or <del>alternatively</del> a Conservation Agreement pursuant to the National Parks and Wildlife Act 1974. <b>Other options may include a binding restriction on use applied to the title of the land that would conserve the biodiversity values of the nominated offset area.</b></li> <li>• Submit for approval of Richmond Valley Council details of the investigations referred to.</li> <li>• Undertake any such recommendations or requirements in association with the approved method of securing the Habitat Offset.</li> </ul> <p>The offset shall remain in force in perpetuity and the final offset area and mechanism for securing the habitat offset shall be approved by Richmond Valley Council.</p>	Landowner / Pacific Complete	Preconstruction
MM 11	Biodiversity	Revegetation areas required under DA2015.0069 will be further examined to ensure compliance with conditions of approval and ensure DA operation is possible in a timely manner.	Landowner / Pacific Complete	Preconstruction
MM 12	Biodiversity	During pre-clearing surveys targeted surveys for the Powerful and Masked Owl will be undertaken to determine whether nesting is occurring within or near the proposed clearing footprint. In the event that a nest tree or roost tree is located and an active breeding pair are utilising the hollow, it must be clearly marked and a buffer of a minimum 50 metre radius must be applied and clearly delineated. Clearing of identified roosting tree would be removed outside breeding season (March – September) and when individuals have vacated the nest.	Pacific Complete / Contractor	Construction
MM 13	Biodiversity	To reduce the potential for injury to resident fauna (especially macropods), speed limits along access roads and tracks will be limited to 40-50 kilometres per hour to reduce likelihood of	Pacific Complete /	Construction

No	Impact	Environmental safeguards	Responsibility	Timing
		road collision and road mortality. Warning signs along regularly used roads will be erected to warn road users of potential wildlife within the vicinity along road verges.	Contractor	
MM 14	Soils and hydrology	An erosion and sediment control plan (ESCP) will be prepared by the contractor to detail how the site will be managed. This will be prepared in accordance with the Woolgoolga to Ballina Construction Soil and Water Management Plan (CSWMP, Appendix B4 of the W2BCEMP) and the Blue Book.	Pacific Complete / Contractor	Preconstruction
MM 15	Soils and hydrology	A surface water monitoring program will be established prior to the operation of the site in order to establish baseline levels of the drainage lines near the Borrow Site and continue through the operation of the site. Water quality monitoring will be undertaken in accordance with the approved Woolgoolga to Ballina (sections 3 to 11) Water Quality Monitoring Program.	Pacific Complete / Contractor	Preconstruction Construction
MM 16	Soils and hydrology	In the unlikely event that the Moonimba Borrow Site does encounter a permanent water table in the bedrock, and penetrates this water table, to a depth in excess of 5 metres, a review of management measures shall be undertaken which will include re-evaluation of the groundwater impact and return of captured water (inflows) to local drainages after treatment in an appropriate sedimentation pond (to capture suspended solids).	Pacific Complete / Contractor	Construction
MM 17	Soils and hydrology	During the decommissioning of the site ( <b>for the activities associated with the modification approval</b> ), the exposed areas will be stabilised prior to the site being handed back to the landowner.	Pacific Complete / Contractor	Post construction
MM 18	Heritage	A temporary high visibility fence, with a minimum 30 metre radius, will be established around the scar tree, located to the south of the eastern pit prior to the commencement of works. The advice of a specialist preferably an Arborist, will be sought to determine appropriate buffer zones for the ongoing management and protection of the tree taking into account the topography of the landscape, the proposed extensive extractive works and the potential for long term damage.	Landowner/ Pacific Complete / Contractor	Preconstruction



### 3.3 LICENSING AND APPROVALS

Table 3-2 summarises the existing and additional licenses and approvals required for the proposed modification.

**Table 3-2 Licenses and approvals**

Instrument	Requirement	Timing
Environment Protection Licence	Land-based extractive activity involving the extraction, processing or storage of more than 30,000 tonnes per year of extractive materials (as per Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i> )	Duration of the works

## 4 PROPOSED AMENDMENTS TO CONDITIONS OF APPROVAL

After consideration of the issues raised in the public submissions, no further changes to the conditions of approval in the *Moonimba Quarry Expansion Bungawalbin NSW Environmental Impact Statement* are proposed.