

# Richmond Valley Council Comments on Temporary Intensification of Operations at Moonimba Borrow Site

## EXECUTIVE SUMMARY

*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.*

- If the quarry starts in 2018, and the highway is to be finished 2020, that could be the start of 2018 and the end of 2020 – being a total of 3 years.
- “or until the material demand for the project ceases.” – Does this mean the quarry could operate for longer than 2 years?

*The proposed modification involves the increased extraction of material at an existing quarry site, therefore it is anticipated that the impacts would be less than those associated with the establishment of a new borrow site.*

- The existing active consent (DA 127/95) is for 30,000m<sup>3</sup>.
- The non-activated approval (DA 2015.0069) lifts the output to 90,000 m<sup>3</sup>. Road network upgrades necessary for activation of this consent have not been undertaken.
- The Modification takes the output to 400,000m<sup>3</sup>, 13.3 times the current operational consent.
- The Modification takes the output to 400,000m<sup>3</sup>, 4.4 times the approved but non activated consent.

*A traffic impact assessment determined that the local roads that would be used for the haulage of material would provide adequate capacity for the proposed haulage rate.*

- Woodburn Coraki Road is already deteriorating significantly under the current material transport to the Pacific Highway Upgrade project.

*A right-turn treatment would be required on the Pacific Highway, for vehicles to safely and efficiently access Woodburn-Coraki Road.*

- Proposal is to provide a right turn bay from the Pacific Highway into Woodburn Coraki Road. A similar right turn bay has already been constructed from the Pacific Highway into Watson Street for access to the north side of the Tuckombil Canal. Both of these intersections have better sight distance, with Watson Street only accessing a small section of the project at much less than 1,000,000 tonnes per year.
- An upgrade of the intersection at Reardons Lane & Woodburn Coraki Road is warranted due to the large increase in heavy vehicles. This intersection has poor alignment and limited sight distance towards Coraki. This is particularly critical for vehicles on Woodburn Coraki Road turning right into Reardons Lane having to wait for a large increase in heavy vehicles returning to Moonimba Borrow Site that are slowing for a left turn into Reardons Lane. There will still be considerable heavy vehicles that travel through the intersection towards Coraki.
- The cumulative traffic impacts generated in 2017 by surrounding quarries in conjunction with the Moonimba Borrow Site are not reflected in the Transport and Traffic Impact Assessments report produced in 2014.

## 2 DESCRIPTION OF THE PROPOSED MODIFICATION

### 2.2 PROPOSED MODIFICATION

*Materials extracted from the site would be used primarily for the construction of Portion C (Sections 7, 8 & 9) of the Approved Project (and other nearby portions if required, however the materials would not be used for any other projects)*

- Will the consent for DA2015.0069 run concurrently with the Moonimba Expansion approval? Or will it be surrendered/suspended?
- If both approvals are active at the same time, then cumulative impacts need to be considered.
- Each approval may have different hours of operation, truck movements, etc. How will this work?

#### 2.2.1 STAGING

##### STAGE 1 ENABLING WORKS

*In order to prepare the site for operation under the proposed modification, the following works would be undertaken by the landowner prior to site establishment:*

- *Landscaping and planting of previous extraction areas as shown in Figure 2-2*
- *Capital improvement upgrades required under DA2015.0069 (refer to Appendix A) including road and intersection upgrades and the installation of a noise wall for a nearby receiver*
- *Establishment of a certified weighbridge for weighing and recording tonnage of all quarried material*
- *Habitat offset requirements for proposed clearing, including a legally binding mechanism for the protection in perpetuity of the habitat offset (refer to Section 4.3.5).*
- The existing active consent (DA 127/95) is for 30,000m<sup>3</sup>.
- The non-activated approval (DA 2015.0069) lifts the output to 90,000 m<sup>3</sup>. Road network upgrades necessary for activation of this consent have not been undertaken.
- The Modification takes the output to 400,000m<sup>3</sup>, 13.3 times the current operational consent.
- The Modification takes the output to 400,000m<sup>3</sup>, 4.4 times the approved but non activated consent.
- Additional upgrade of the Reardons Lane Woodburn Coraki Road is warranted due to the additional large increase in heavy vehicles at an intersection with poor alignment and limited sight distance. This is particularly critical for vehicles turning right into Reardons Lane having to wait for a large increase in heavy vehicles that are slowing for a left turn into Reardons Lane. There will still be considerable heavy vehicles that travel through the intersection towards Coraki. The turning opportunity times will be considerably reduced by the large increase in trucks slowing to turn.
- Is the noise wall proposed for 40,000m<sup>3</sup> adequate for 400,000m<sup>3</sup>?

#### 2.2.3 LENGTH OF OPERATION AND PROPOSED HOURS OF OPERATION

*The borrow site would operate under the construction hours outlined in conditions B15 and B16 of the Minister's Conditions of Approval for the Approved Project (SSI-4963). In accordance with condition B15, construction activities associated with the SSI shall be undertaken during the following standard construction hours:*

- Monday to Friday: 7am to 6pm
- Saturday: 8am to 5pm
- At no times on Sunday and Public Holidays.
- The existing approval for DA2015/0069 specifies the hours of operation for quarry operations and transport shall be limited to:
  - Monday to Friday: 7am to 6pm
  - Saturday: 8am to 12pm
  - No operations or transport on Sunday and Public Holidays.
- Other quarries within the Richmond Valley Council area supplying material to the Pacific Highway project have similar operating hours.

*In accordance with condition B21, blasting activities associated with the Approved Project shall only be undertaken during the following hours:*

- 9:00am to 5:00pm, Monday to Friday, inclusive
- 9:00am to 1:00pm on Saturdays
- At no time on Sunday or public holidays.
- The existing approval for DA2015/0069 specifies that hours for blasting shall be limited to:
  - Monday to Friday: 9am to 3pm
  - No operations or transport on Sunday and Public Holidays.
- Other quarries within the Richmond Valley Council area supplying material to the Pacific Highway project have similar approved blasting hours.

## 4 ENVIRONMENTAL ASSESSMENT

### 4.1.2 METHODOLOGY

*A Road Safety Audit (RSA) would not be performed as the results from the RSA undertaken for the TTIA (Greg Alderson and Associates, 2014) remain relevant and applicable to the haulage route for the proposed modification.*

- Richmond Valley Council believes that since the 2014 Road Safety Audit by Greg Alderson and Associates was completed, the conditions along Woodburn Coraki Road have changed in the last 3 years such that an updated Road Safety Audit is warranted.

### 4.1.4 IMPACT ASSESSMENT

#### PROPOSED HAULAGE OPERATIONS

*The proposed haulage route is inconsistent with the haulage routes identified within the W2B EIS and would result in additional impacts to Reardon's Lane, Boggy Creek Road and Woodburn-Coraki Road throughout the duration of the proposed increase in annual extraction from the Moonimba Borrow Site.*

- Whilst it is acknowledged in the report that there will be impacts on the local road network, there are no mitigation measures proposed for the impacts to the road pavements of the proposed haulage route.

#### INTERSECTION IMPACTS

Three intersections have been identified within the TIA which would be impacted throughout the duration of operations under the proposed modification including:

- Site Access / Boggy Creek Road,
- Reardon's Lane / Woodburn – Coraki Road, and
- Woodburn – Coraki Road / Pacific Highway.

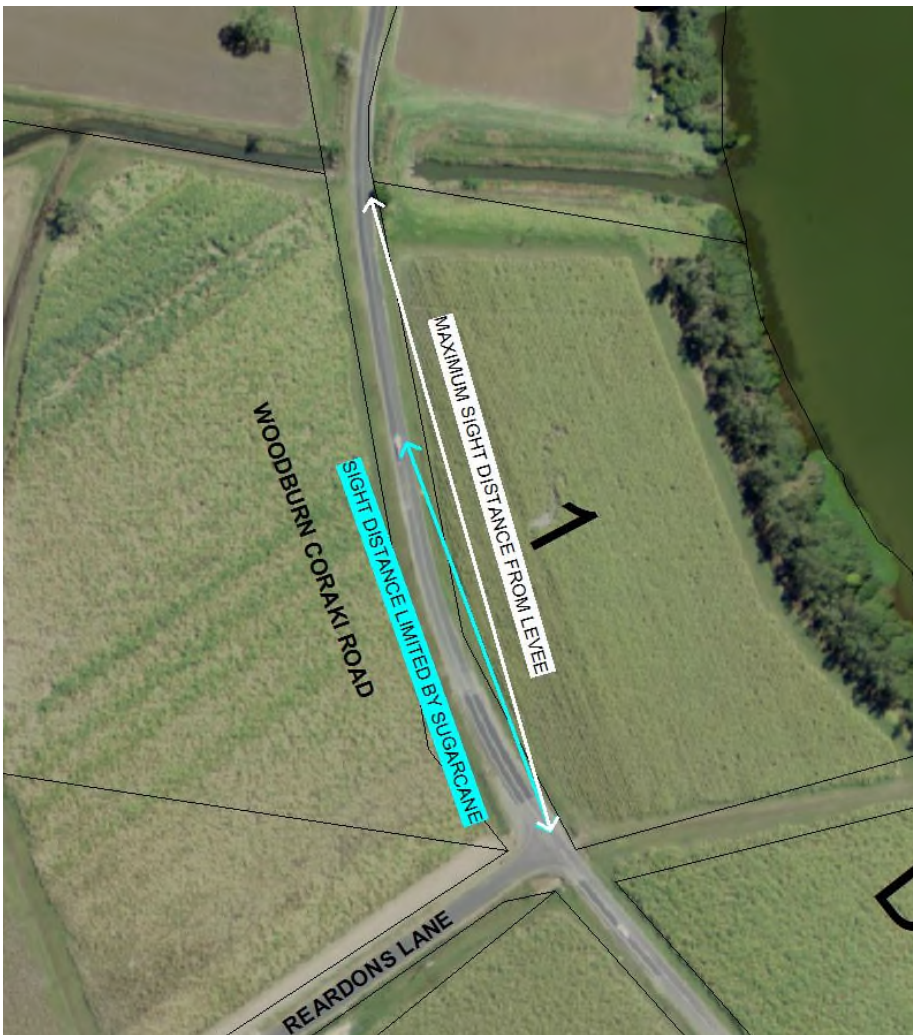
Based on the assumption that the road upgrades specified by approved DA2015.0069 have been completed prior to commencement of haulage for the modification, Boggy Creek Road, Reardons Lane and the borrow site access road would provide adequate capacity to service the one million tonnes per annum (400,000 m<sup>3</sup> per annum) extraction and associated backfill vehicle movements.

Of the three intersections identified, the intersection between Woodburn-Coraki Road and the Pacific Highway is the most critical. The resulting increase in traffic associated with the proposed increase in extraction of material from the borrow site would necessitate a right-turn treatment on the Pacific Highway, for vehicles to safely and efficiently access Woodburn-Coraki Road. The appropriate treatment is a channelised right-turn bay on the Pacific Highway, southbound, as shown in Figure 4-2.

- Council considers that the Reardons Lane and Woodburn Coraki Road intersection to also be critical. Additional upgrade of the Reardons Lane and Woodburn Coraki Road intersection is warranted due to the additional large increase in heavy vehicles at an intersection with poor alignment and limited sight distance. This is particularly critical for vehicles turning right into Reardons Lane having to wait for a large increase in heavy vehicles that are slowing for a left turn into Reardons Lane. There will still be considerable heavy vehicles that travel through the intersection towards Coraki. The turning opportunity times will be considerably reduced by the large increase in trucks slowing to turn.
- Whilst the intersection analysis identified vehicles exiting Reardons Lane via a left hand turn towards Coraki, the intersection analysis failed to look at this returning traffic and the impacts that the returning quarry trucks have on the waiting times at the intersection.
- Using the data provided in this report and the Austroads AGRD04A - Warrants for turn treatments on the major road at Unsignalised intersections graph, the right turn movement from Woodburn Coraki Road into Reardons Lane warrants improvement.
- The approach sight distance for traffic coming from Coraki along Woodburn Coraki Road towards Reardons Lane is restricted by a drainage levee (250m) and during times of Sugarcane crops, this sight distance is reduced to 160m.
- Austroads AGRD04A specifies the minimum sight distance for a 100km/hr flat road, with 2.5 second reaction time to be 262m.
- Austroads AGRD04A Section 3.2.2 Safe Intersection Sight Distance (SISD) says that Safe Intersection Sight Distance should also be applied to vehicles turning right from the major road and oncoming major road vehicles at all types of right turn treatments to ensure that adequate visibility is provided. The ability to achieve SISD could be influenced by the horizontal alignment of the intersection.



Photo – looking southbound on Woodburn Coraki Road looking towards Reardons Lane. Levee bank on left hand side.



Approach Sight Distance to Reardons Lane – Changes with crops planted in adjoining paddock. 250m from Levee, reduced down to 160m with sugarcane in adjacent paddock.

- Recent video inspection along Woodburn Coraki Road has shown skids marks from a heavy vehicle that was approaching Reardons Lane from Coraki.



Photo – Skid marks from a heavy vehicle on Woodburn Coraki Road approaching Reardons Lane

*Due to the locality of St Joseph’s Primary School (immediately west of the intersection of Woodburn-Coraki Road and Pacific Highway), the morning and afternoon peaks incur greater bus and light vehicle volumes accessing Woodburn-Coraki Road. The introduction of a channelised lane would improve the safety and manoeuvrability of construction and local vehicles. This treatment would require the reconfiguration of the intersection’s layout and realignment of the existing line marking.*

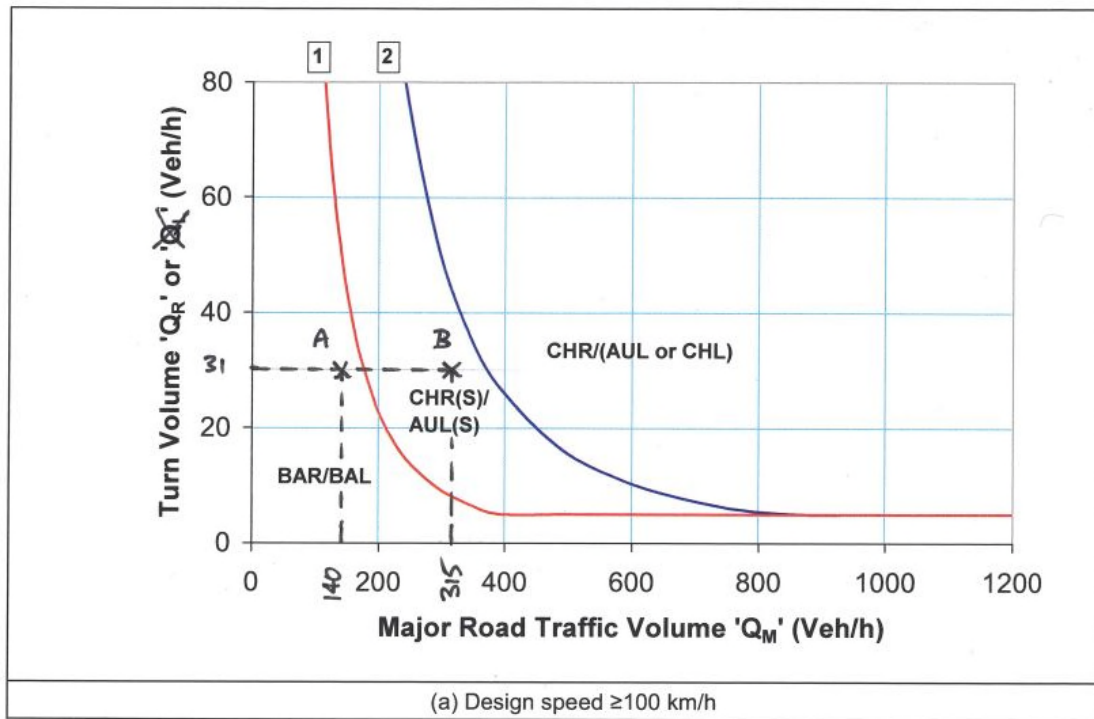
- Figure 4.2 denotes the over lapping of haulage and bus routes

Bus routes	Suburb	Street	Number of buses (pm)	Number of buses (pm)
Locality	Bungawalbin	Boggy Creek Road	8	7
		Reardons Lane	10	7
	Woodburn	Woodburn-Coraki Road	7	7
		Pacific Highway	20	20

Following a high level assessment, bus routes and roads used in the local area were identified as follows:

- Local roads:
  - Boggy Creek Road, Reardons Lane and Woodburn-Coraki Road support approximately 4-5 buses per hour during the morning and afternoon school peaks
- Pacific Highway services:
  - Buses transport students to schools north and south of the study area
  - Bus frequency is about 10 buses per hour during the morning and afternoon school peaks.
- Council considers that the Reardon Lane Woodburn Coraki Road intersection to also be critical. Additional upgrade of the Reardons Lane Woodburn Coraki Road is warranted due to the additional large increase in heavy vehicles at an intersection with poor alignment and

limited sight distance. This is particularly critical for vehicles, including school buses, turning right into Reardons Lane having to wait for a large increase in heavy vehicles that are slowing for a left turn into Reardons Lane. There will still be considerable heavy vehicles that travel through the intersection towards Coraki. The turning opportunity times will be considerably reduced by the large increase in trucks slowing to turn.



Source: Arndt and Troutbeck (2006).

Figure 4.9: Warrants for turn treatments on the major road at unsignalised intersections

### 4.3.3 EXISTING ENVIRONMENT

#### EXISTING ACOUSTIC ENVIRONMENT

*The existing traffic volume on Woodburn-Coraki Road is considered to be 1397 vehicles per day, with 30 percent categorised as being heavy vehicles.*

- the above statement results in 420 heavy vehicles per day
- The 1397 vpd is at the Boggy Creek Rd intersection, not at the Woodburn Coraki Road intersection (TIA Table 2.3 2014 Averaged Traffic Volumes) so does not include the residential traffic from Casuarina Drive, or the traffic to/from the landscape supplies.
- Traffic counts even from as late as November 2015 and January 2016 do not have heavy vehicle counts as high as 30%, nor traffic as low as 1397 vehicles per day.
- Woodburn Coraki Road AADT 2105, 17.4% Heavy Vehicles, August 2016

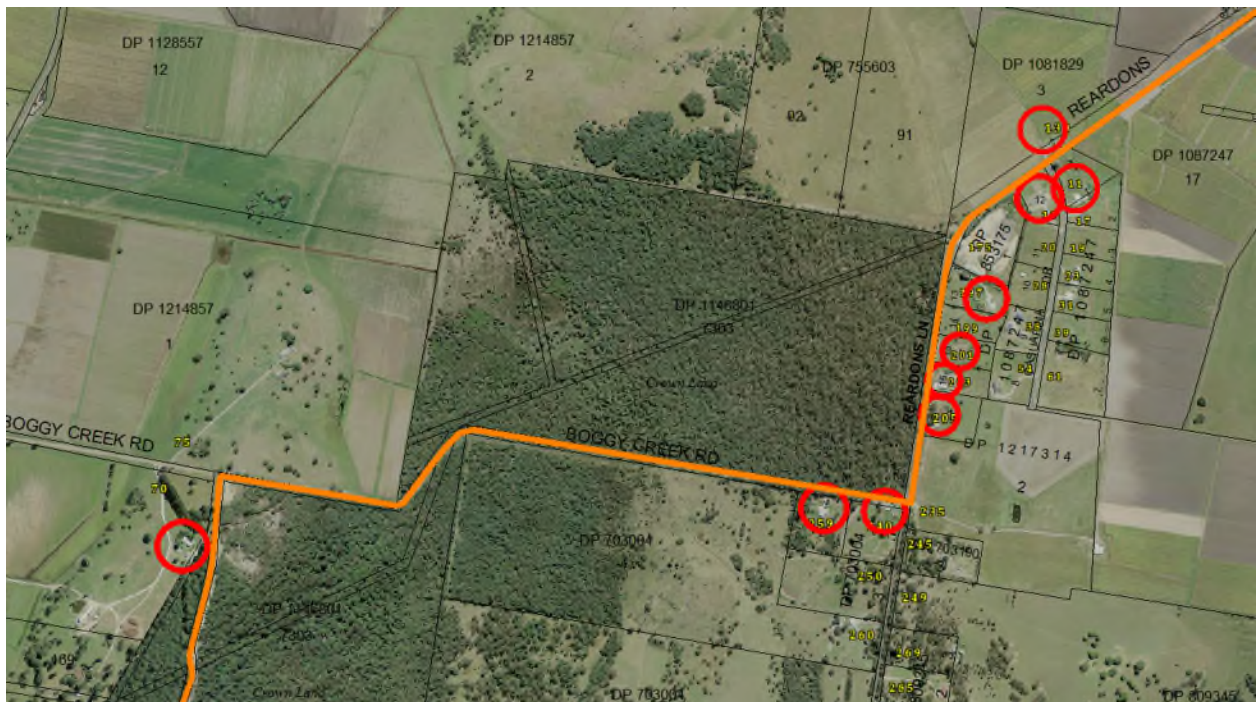
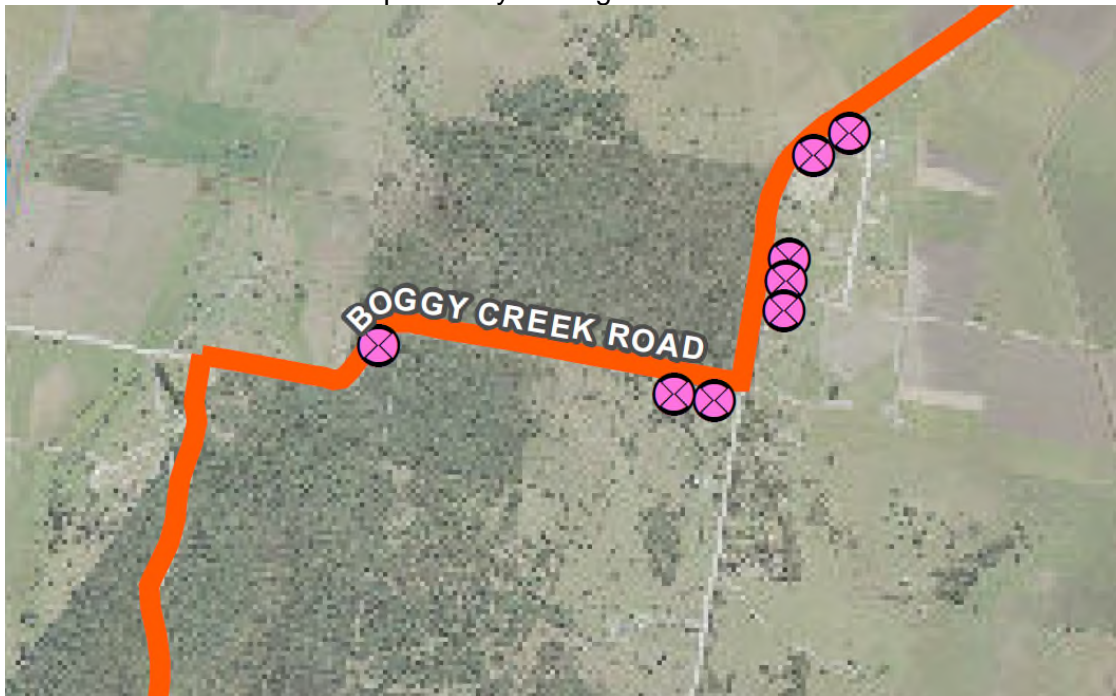








Figure 4.4 – Sensitive Receivers Impacted by Haulage Vehicles



#### 4.3.4 IMPACT ASSESSMENT

##### ROAD TRAFFIC NOISE EMISSIONS

- This proposal will increase the numbers of heavy vehicles using Woodburn Coraki Road. Whilst the residents along Woodburn Coraki Road currently experience road noise, no mention is made in relation to the increase in frequency of noise that will be experienced at these properties, especially given the rough condition of the road.
- No mitigation measures are proposed to address this issue.

#### 4.12 SOCIAL AND ECONOMIC

##### 4.12.4 IMPACT ASSESSMENT

One of the Key differences to the proposed modification and DA2015.0069 regarding social and economic impacts include:

- *Undertaking repairs to local roads caused by hauling operations in lieu of making payments to Council for road maintenance*
  - There are no repairs to local roads listed in the mitigation measures for this section.
  - There are intersection improvements proposed as per current traffic design practices.
  - The existing heavy haulage rate for 2017/2018 is \$1.149 per tonne of material transported on Council's road network. This would equate to approximately \$2.3 million over the life of this development.
  - Council has been proactive in the investigation and design of the rehabilitation of the existing Woodburn Coraki Road pavement. The design estimate for the full length (20km) of Woodburn Coraki Road is in the order of \$17.4 million.
  - Council has been actively seeking funding for this work.
  - \$1 million grant has been received from the Federal Government
  - Heavy haulage fees are predicted to accumulate to \$1.4 million by October 2018 to undertake rehabilitation of 2.65km of Woodburn Coraki Road.
  - Additional grant applications have been submitted to Fixing Country Roads.
  - Financial assistance from the State Government would be welcomed to help repair a local road that is directly impacted by a State Government project.
  - The social impact on the Richmond Valley residents will be significant if funding from other Council projects is required to be redirected to repair Woodburn Coraki Road.

## 6 ADDITIONAL MANAGEMENT MEASURES

Table 6.1

Table 6-1 Additional mitigation measures for the Moonimba Borrow Site

	MEASURE/REQUIREMENT	RESPONSIBILITY	TIMING/FREQUENCY
<b>Traffic transport and access</b>			
MM 1	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	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	A traffic management plan (TMP) will be prepared in accordance with the W2B CTAMP (Appendix B1 of the CEMP). This will include traffic controllers, variable message signs and adequate tapering, which will be provided to manage this intersection during peaks in construction haulage activities.	Pacific Complete / Contractor	Preconstruction

The Reardons Lane T intersection at Woodburn Coraki Road is not mentioned.

- Right turn reconstruction of the Pacific Highway at Woodburn Coraki Road and at Watson Street are being provided due to issues with queueing and waiting times for turning traffic. These intersections have good sight distance, open pavement areas and low speed limits. The Reardons Lane Woodburn Coraki Road will have all of the trucks travel through it (2 million tonnes per year from Petersons, Coraki and Moonimba) with much poorer sight distance, poorer alignment, higher rural speeds and excessively increased waiting times. Surely this intersection is as high a priority, or much higher priority, than those already receiving right turn treatment.



Pacific Hwy / Woodburn Coraki  
proposed upgrade with right turn bay



Pacific Hwy / Watson Street  
full intersection created, right turn + left merge  
Watson St is only one access location



Pacific Highway / Watson Street intersection before upgrade



Pacific Highway / Watson Street intersection after upgrade





Pacific Highway / Woodburn Coraki Road intersection



Proposed right turn lane instead of through lane

## Summary

- (For Moonimba Quarry only for 1,000,000 tonnes per year) *With an average of **234 movements per day**, an operational threshold of **300 truck movements a day or 33 movements per hour (two-way) or 16 vehicles per hour (one way)**, has been considered to account for influxes in construction demands. This extractive industry will be used as the upper limit for assessing traffic impacts.* (Moonimba Borrow Site – Traffic Impact Assessment 3.2 Proposed Haulage Route)
- This is in addition to the 1,000,000 tonnes per year from Coraki Quarry, and additional material from Petersons Quarry, all impacting on this intersection
- 33 movements per hour from Moonimba Quarry + say another 33 movements per hour from Coraki and Petersons Quarries = 66 movements per hour – a movement every 54 seconds.
- Add non heavy vehicles to the mix travelling through the intersection (rural residential and farmland along Reardons Lane, and Woodburn Coraki Road being a main road).
- All of the Moonimba Quarry vehicles are slowing to turn into Reardons Lane (thus reducing the gap time for vehicles turning right into Reardons Lane
- heavy vehicles turning right into Woodburn Coraki Road and accelerating from a standing start will impact on through traffic from Coraki.
- The Woodburn Coraki Road Reardons Lane is impacted by a concentrated material supply route that is then dispersed along a number of sections of the Pacific Highway Upgrade, eg the upgraded Watson Street intersection to access just the area on the north side of Tuckombil Canal.
- Right turn reconstruction of the Pacific Highway at Woodburn Coraki Road and at Watson Street are being provided due to issues with queueing and waiting times for turning traffic. These intersections have good sight distance, open pavement areas and low speed limits. The Reardons Lane Woodburn Coraki Road will have all of the trucks travel through it (2 million tonnes per year from Petersons, Coraki and Moonimba) with much poorer sight distance, poorer alignment, higher rural speeds and excessively increased waiting times. Surely this intersection is as high a priority, or much higher priority, than those already receiving right turn treatment.
- There is an impact analysis of the Pacific Highway Woodburn Coraki Road intersection, but nothing for the Reardons Lane Woodburn Coraki Road intersection – as though it does not exist.
- **A heavy vehicle movement every 54 seconds through the intersection with half of those turning in/out of Reardons Lane, and the mix of local light vehicles, makes the Woodburn Coraki Road and Reardons Lane intersection a critical intersection.**

## Closing comments

Richmond Valley Council is supportive of the Pacific Highway Project and the benefits it brings to the area by way of increased employment opportunities and improved transport conditions along the Pacific Motorway once it is completed.

Richmond Valley Council recognises that whilst Pacific Highway desperately needs upgrading, Council has taken a proactive approach to the deterioration of Woodburn Coraki Road by commissioning a report into how to rehabilitate the road. This report has allowed estimates to be developed & works to be programmed. The current estimate to repair the 18km of pavement between Woodburn and Coraki is approximately \$17.4 million.

Currently Council has received \$1 million from the Federal Government and it is anticipated to receive \$1.4 million from heavy haulage levies during the current and next financial year up to October 2018. Additional grant applications have been made to Fixing Country Road.



Council is planning to use this money to rehabilitate 2.65km of pavement between Woodburn Township and Reardons Lane. As further funds become available, more priority sections of Woodburn Coraki Road will be reconstructed.

Heavy haulage levies from quarries using the Woodburn Coraki Road, will not be enough to sustain and maintain the road during the life of the Pacific Highway construction. Council need and will continue to seek funding opportunities with RMS, State and Federal Governments to ensure the safety of road users.

Woodburn Coraki Road is a regional road that benefits from the RMS Regional Road Block Grant. This grant for \$800 000 is applied across the 68km of regional road network that Council controls each year.