

5 April 2017

**NSW Planning Assessment Commission Determination Report  
Gunlake Quarry Extension Project (SSD 7090)**

## **1. INTRODUCTION**

On 14 December 2016, the Planning Assessment Commission received from the Department of Planning and Environment a State significant development (SSD) application from Gunlake Quarries Pty Ltd (the Applicant) seeking consent to expand and intensify the Gunlake Quarry (the Project). Under the *Environmental Planning and Assessment Act 1979* (EP&A Act), the Minister for Planning is to determine whether consent should be granted to carry out SSD.

Under delegation from the Minister for Planning, either the Department of Planning and Environment (the Department) or the Planning Assessment Commission (the Commission) may determine SSD applications. As the Department received more than 25 submissions in nature of objections, the application was therefore referred to the Commission for determination.

Ms Lynelle Briggs AO, Chair of the Commission, Mr Roger Fisher and Mr Brian Gilligan constituted the Commission to determine the development application.

### **1.1 Background**

Gunlake Quarry currently operates under an approval granted by the then Minister for Planning on 24 September 2008 under the former Part 3A approval regime of the EP&A Act. The original approval allowed for the extraction and processing of up to 500,000 tonnes per annum (tpa) of hard rock aggregates and manufactured sand for 30 years, as well as transportation of the extracted material to market.

Operations at Gunlake Quarry commenced in 2010. Since then, the project has been modified three times, as follows:

- **Modification 1:** approved in March 2013 to allow the Applicant to use the Marulan South Interchange on the Hume Highway as part of its transport route for vehicles returning to the quarry from the north;
- **Modification 2:** approved in April 2015 to allow the following modifications:
  - increase the quarry production rate from 500,000 tpa to 750,000 tpa;
  - increase the size of the quarry area from 6.0 ha to 11.8 ha;
  - increase the number of truck movements from 100 to 164 truck movements per day, and an increase in the maximum number of daily truck movements from 150 to 320 per day; and
  - increase the hours of operation for tertiary crushing activities to 24 hours per day (expect 7.00pm Saturday to 6.00am Monday).
- **Modification 3:** approved in October 2014 (prior to approval of Modification 2) to allow 100 truck movements per day (averaged over one month) with a maximum of 150 truck movements per day.

## 1.2 Summary of Development Application

The Applicant has submitted a development application seeking approval for the expansion of the existing Gunlake Quarry under Part 4 of the EP&A Act. It should be noted that this is a standalone development application, and not a modification to the original development application for the existing quarry.

The existing Gunlake Quarry is a hard rock quarry located on Brayton Road, approximately 7 kilometres (km) northwest of Marulan, within the Goulburn Mulwaree Council (Council) local government area. The existing and proposed quarry areas are shown in **Figure 1** below. The development application seeks approval to maintain all current approved operations at the quarry, as well as the following additional activities:

- increase the processing rate from 750,000 tpa to 2 million tpa;
- increase the quarry footprint from 45 hectares (ha) to 99 ha;
- conduct extractive operations for 30 years from the date of approval;
- increase the average number of daily truck movements (heavy vehicle one-way trips, either entering or leaving the site) from 164 to 440;
- increase the maximum number of daily truck movements from 230 to 590;
- construct a new overburden emplacement area in the south-western corner of the site; and
- modify existing hours of operation to allow crushing 24 hours a day (except Sundays and public holidays) and maintenance anytime (including Sundays and public holidays).

Should approval to this Project be granted, then the existing approval for the quarry would be surrendered and the whole of quarry would operate under the new Project approval.

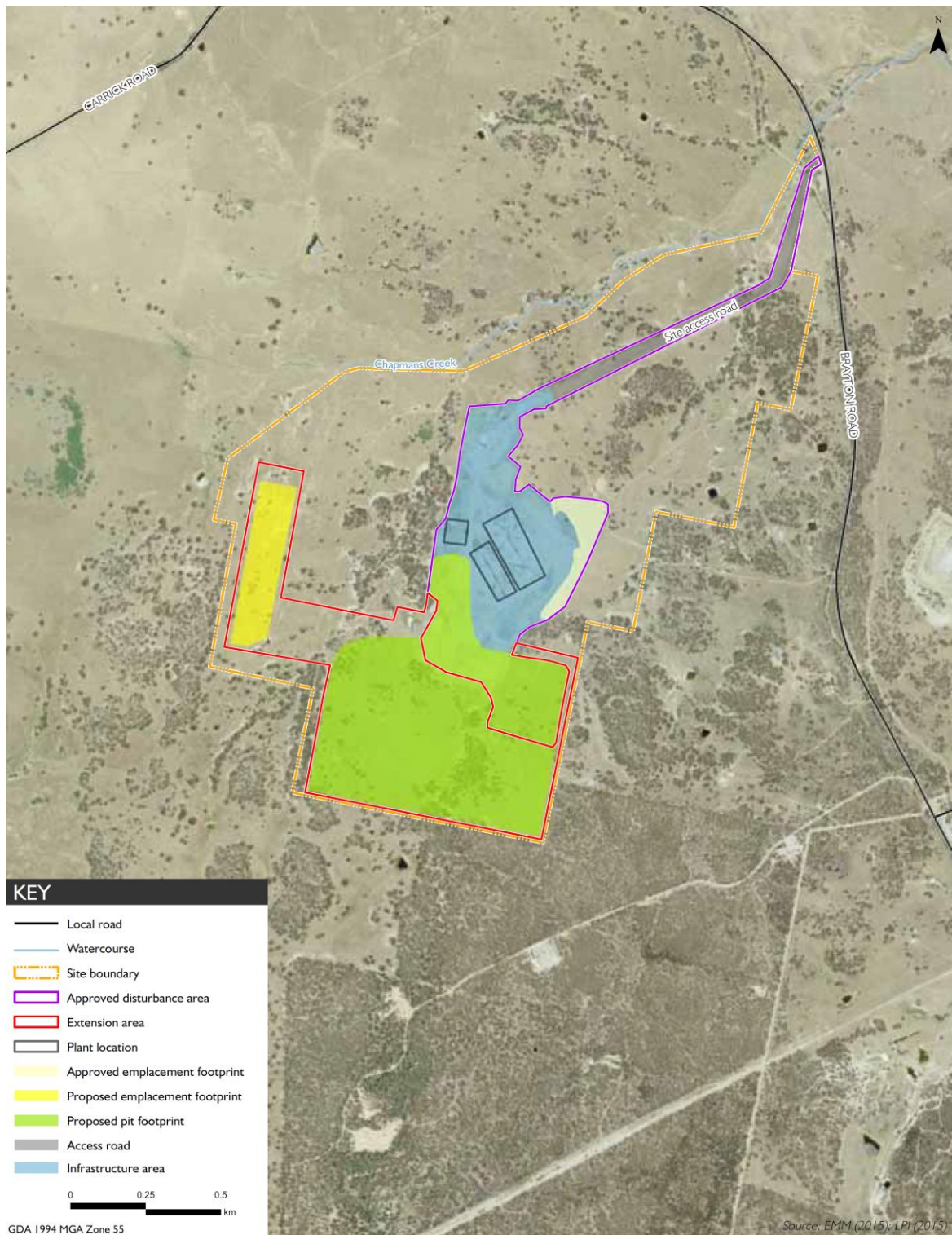
## 1.3 Legislative context

The Project is defined as SSD under section 89C of the EP&A Act, as it satisfies the criteria for state significant extractive industries under Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD). Specifically, it is a development that extracts more than 500,000 tpa of extractive materials, and extracts from a resource of more than 5 million tonnes.

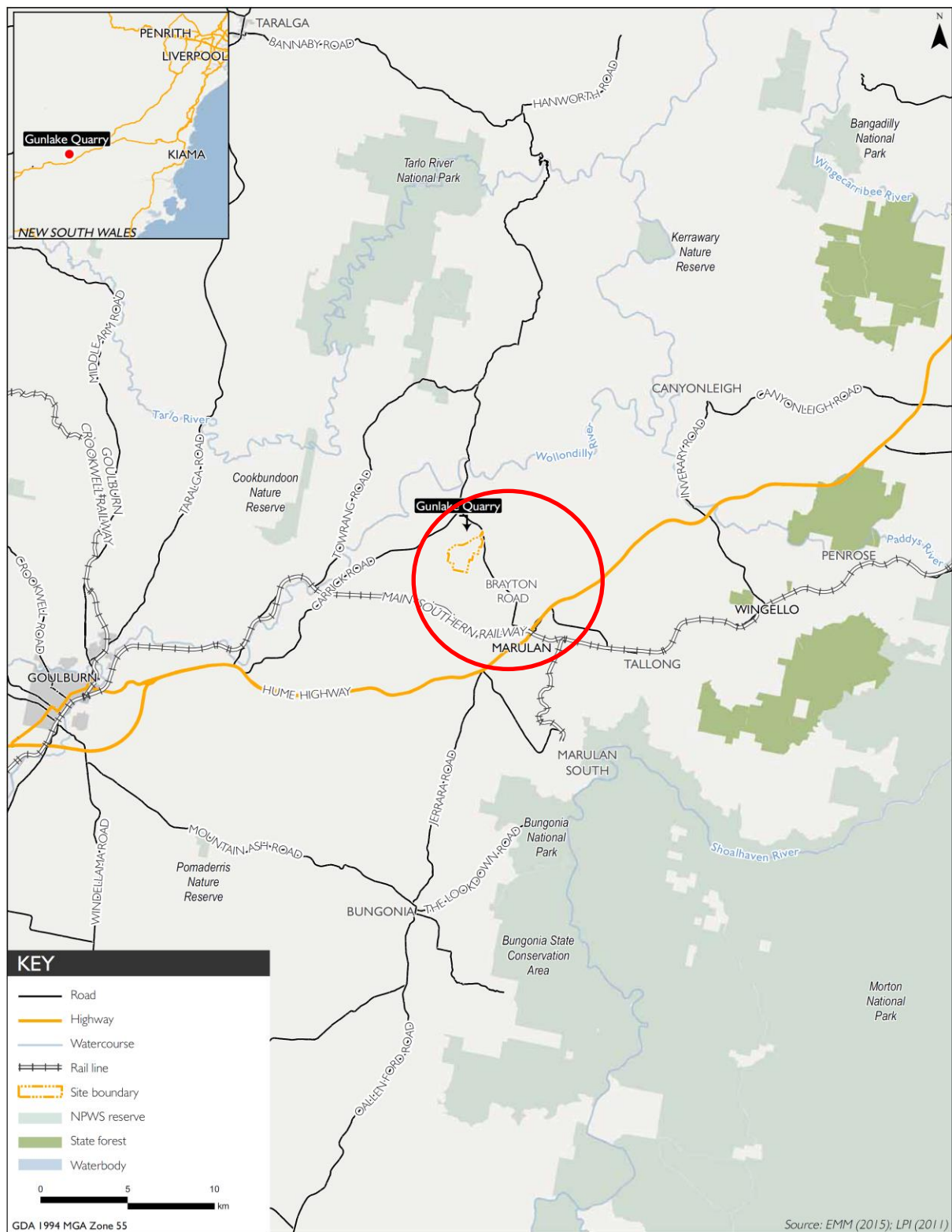
## 1.4 Defining the locality

In accordance with section 79C(1)(b) of the EP&A Act, the Commission has considered the likely impacts of the Project including the environmental, economic and social impacts in the locality. The Commission considers that the locality is most readily defined as being the reach of the Project by way of the extent of environmental impact. Geographically this is defined as land within the quarry site, and encompasses the primary transport route to the Hume Highway. The indicative area is shown on **Figure 2**, identified as the area circled.

The environmental, economic and social impacts of the Project in the locality are discussed and evaluated in **Section 5.0** of this report.



**Figure 1: Existing and proposed development** (Source: Department's assessment report)



**Figure 2: Locality of the proposed Project** (Source: Department's assessment report)

## **2. DEPARTMENT'S ASSESSMENT REPORT**

The Department's Assessment Report identified the following key issues associated with the Project:

- transport and haulage;
- noise – operational and traffic;
- air quality;
- biodiversity;
- groundwater and surface water management;
- land resources and agriculture;
- indigenous cultural heritage;
- historic heritage;
- visual impact;
- economic assessment; and
- rehabilitation.

The Department's Assessment Report concluded that the environmental impacts of the Project have been substantially reduced, due to the enclosure of the primary crusher, upgrading of the primary transport route and the increase in the proposed biodiversity offset package. The Department considers the project is in the public interest and recommended approval subject to conditions.

## **3. COMMISSION'S MEETINGS AND SITE VISIT**

As part of its assessment of the Project, the Commission met with the Department, the Applicant, Council and visited the Gunlake Quarry and Holcim Lynwood Quarry. The Commission also conducted a public meeting in Marulan. Summaries of each of these meetings are included within **Appendix 1**.

### **3.1 Briefing from the Department**

On 20 January 2017, the Department briefed the Commission on the Project and the content of its assessment report. Specifically, the Department outlined the key assessment issues including road and rail transport. The Department also discussed community consultation and the recommended conditions of consent. The Department attended a further meeting with the Commission following the public meeting on 3 February 2017 to discuss possible alternative transport options for the Project.

### **3.2 Briefing from the Applicant and site visit**

On 30 January 2017, the Commission met with the Applicant at Gunlake Quarry. The Applicant briefed the Commission with regard to existing site operations, the proposed development and amendments to the Project since it was originally lodged with the Department. The briefing was followed by an inspection of the quarrying operations at the site.

### **3.3 Meeting with Goulburn Mulwaree Council**

On 30 January 2017, the Commission met with Council staff to discuss the Project. Council staff discussed the assessment of transport options and the absence of a strategic direction regarding future transportation of bulk quarry products in the region. Council staff also referred to consideration of the road and rail transport options for the Project, section 94 development contributions and community engagement matters.

### 3.4 Meeting with Holcim

On 31 January 2017, the Commission met with Holcim to discuss the Marulan quarrying industry and to assist the Commission in its understanding of road and rail connectivity in the area.

### 3.5 Public Meeting

The Commission held a public meeting at the Marulan Community Hall on 31 January 2017 to hear the public's views on the proposal. A list of the nine speakers that presented to the Commission is provided in **Appendix 2**. A summary of the issues raised by the speakers and provided in written submissions is provided in **Appendix 3**. In summary, the community expressed general support for the quarrying industry, but identified the following main issues of concern with this application:

- adequacy of assessments;
- compliance with conditions of consent;
- alternative transport options and consideration of rail transport;
- impacts on road infrastructure;
- road safety issues;
- noise impacts;
- air quality; and
- community consultation/engagement.

## 4. ADDITIONAL INFORMATION

The Commission requested and received additional information from the Applicant on aspects of the Applicant's economic assessment and transportation options.

## 5. COMMISSION'S EVALUATION

In this determination, the Commission has considered carefully:

- all information provided by the Applicant;
- the Department's assessment report;
- advice and recommendations from government agencies;
- additional information provided to the Commission; and
- relevant matters for consideration specified in section 79C of the *Environmental Planning and Assessment Act 1979* (EP&A Act), including:
  - any relevant environmental planning instruments;
  - the *Environmental Planning and Assessment Regulation 2000*;
  - the likely impacts of the development on both the natural and built environments;
  - social and economic impacts in the locality;
  - the suitability of the site for the development;
  - all written and verbal submissions from the public; and
  - the public interest, including the objects of the EP&A Act.

The key matters considered by the Commission's include noise and vibration, air quality, road and rail transportation and rehabilitation.

The Commission is satisfied with the Department's assessment on all other matters previously listed in **Section 2.0**.

## **5.1 Matters for consideration under section 79C of the *Environmental Planning and Assessment Act 1979***

The Commission has considered all relevant matters under section 79C(1) of the EP&A Act in arriving at its determination.

*‘in determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application’.*

### **(a) the provisions of:**

#### **5.1.1 any environmental planning instrument**

The following Environmental Planning Instruments (EPIs) apply to the Project

- *Goulburn Mulwaree Local Environmental Plan 2009;*
- *State Environmental Planning Policy No. 33 Hazardous and Offensive Development;*
- *State Environmental Planning Policy No. 44 Koala Habitat Protection;*
- *State Environmental Planning Policy No. 55 Remediation of Land;*
- *State Environmental Planning Policy (Infrastructure) 2007;*
- *State Environmental Planning Policy (State and Regional Development) 2011;* and
- *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011.*

Under the *Goulburn Mulwaree Local Environmental Plan 2009* the site is zoned RU1 Primary Production and RU2 Rural Landscape. Extractive industries are permissible with development consent in both zones.

The Commission has considered these EPIs and finds that the Project satisfies the requirements of each. The Commission has provided a more detailed assessment of the Mining SEPP below.

#### **State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)**

For clarity, the Mining SEPP refers specifically to the vicinity of the Project and not the locality. The lands immediately surrounding the Project are considered to be the vicinity. However, this does not include the primary transport route from the quarry site to the Hume Highway and accordingly, an assessment of the primary transport route is provided in **Section 5.0**.

#### *Clause 12 – Compatibility of proposed mine, petroleum production or extractive industry with other land uses*

Under clause 12(a) of the Mining SEPP, before determining a development application for the purposes of mining, petroleum production or extractive industry, the consent authority must:

##### **a) consider:**

- the existing uses and approved uses of land in the vicinity of the project; and*

There are a number of existing and approved uses within the vicinity of the Project. Land uses include, but are not limited to, the following:

- agriculture – typical grazing lands;
- rural residential development; and

- extractive industries – hard rock quarrying activities.

ii. *whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be preferred uses of land in the vicinity of the Project; and*

The land use trends reflect a history of agriculture and grazing lands. Marulan Village was until recently surrounded by large farming areas, which have been subject to subdivision into smaller rural landholdings. Extractive industries have also become more prominent in recent years with the intensification of quarrying activities in the region.

The Applicant's Environmental Impact Statement (EIS) states: *'there are no other preferred uses of land in the vicinity of the development. Therefore, it will not be incompatible with any existing, approved or likely preferred uses'*.

The main land use trends in the vicinity of the Project, include rural residential land holdings and agricultural land uses. The Commission finds that extractive industry is the preferred land use within the vicinity of the Project and is further supported by the presence of a number of other extractive industry operations to the east and south of the Project.

In considering clause 12(a)(ii), the Commission is required to establish whether or not the development is likely to have a significant impact on the preferred uses of land. The Commission finds that the development will not have a significant impact on extractive industries.

iii. *any ways in which the Project may be incompatible with any of those existing, approved or likely preferred uses; and*

The Commission is of the view that the Project would not be incompatible with the other extractive industries operating in the area. The Commission considers there is a degree of incompatibility with rural residential and agricultural land uses, in terms of the potential for impacts relating to noise, air quality and haulage truck movements from the Project.

b) *evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph 12 (a) (i) and (ii); and*

The Commission acknowledges that extractive industries deliver economic flow-on benefits to the community and a number of associated industries. The Project is predicted to increase the number of employees from 25 to 32 on-site employees and increase the number of truck drivers from a current maximum of 38 truck drivers to a proposed maximum of up to 58 truck drivers over the life of the Project.

The Commission notes that the quarry industry, unlike mining, does not pay royalties to the State Government. The predicted monetary value of the Project, as set out in the Applicant's Economic Assessment is estimated to generate \$2 million in company tax to the State government and a claimed overall net benefit of between \$16-27 million to NSW. However the Commission notes that this estimate does not include, or values at zero, a number of negative externalities, including greenhouse and accident costs.

The Commission accepts there would be some public benefit derived from job creation and the revenue and expenditure generated as a result of the Project. The Project would also benefit the construction industry, particularly the Sydney market by increasing the potential supply of aggregate for construction materials.

At the same time, the Project would impose some costs, primarily for the local community.

The Commission acknowledges that the surrounding land uses provide a minor public benefit through employment and tax revenue, however it is unlikely to be significant or to the extent of the Project.

c) *evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii).*

The Applicant has proposed a number of measures to address incompatibilities identified in paragraph (a) (iii). Specifically, the Applicant proposes to enclose the primary crusher which would reduce some of the potential impacts of the Project. The Applicant proposes a number of other measures to minimise or manage potential impacts. A summary list of the measures proposed is included in **Appendix 4**.

#### *Clause 12A – Voluntary land acquisition and mitigation policy*

The predicted noise levels of the Project mean that two properties would be entitled to acquisition and mitigation under the NSW Government's *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments* (VLAMP).

#### *Clause 12AB – Non-discretionary development standards for mining*

This clause stipulates a number of non-discretionary development standards for extractive industry in relation to cumulative noise level, cumulative air quality level, airblast overpressure, ground vibration and aquifer interference. Should the Project be able to demonstrate compliance with these standards, the consent authority cannot give further consideration to those standards in determining the development application.

Notwithstanding, the likely environmental, economic and social impacts of the Project in the locality are considered in further detail in **Section 5.2**.

#### *Clause 13 – Compatibility of proposed development with mining, petroleum production or extractive industry*

This clause does not strictly apply to the Project as there are no mining, petroleum or extractive industries within the vicinity of the project site. However, the Commission notes that the Applicant's EIS states there is sufficient resource within the Project site (approximately 180 million tonnes) for quarrying to continue at 2 million tpa for 90 years. The Commission understands that significant extractive resources exist throughout the region. The Project would not preclude the future extraction of materials within its vicinity. The Commission further notes that neither the Applicant's EIS, nor the Department's Assessment Report, makes reference to any other notable resources within the site that would be sterilised as a result of the Project.

The Commission finds that the Project would not prevent the future extraction of resources within the vicinity of the Project, nor does the Project present any noted incompatibility with other mining, petroleum production or extractive industries.

*Clause 14 – Natural resource management and environmental management*

The Commission has considered the information presented by the Applicant and the Department and is satisfied that, subject to appropriate licensing and conditions of consent, the Project could be undertaken in an environmentally responsible manner.

*Clause 15 – Resource recovery*

The Commission has considered the information presented by the Applicant and the Department and is satisfied that resource recovery can occur in an efficient and effective manner, and that the remaining resources within the Project site will not be sterilised from potential future extraction.

*Clause 16 – Transport*

This clause requires the consent authority to consider whether or not the consent should be issued subject to conditions that do any one or more of the following:

- (a) require that some or all of the transport of materials in connection with the development is not to be by public road;*
- (b) limit or preclude truck movements, in connection with the development, that occur on roads in residential areas or on roads near to schools;*
- (c) require the preparation and implementation, in relation to the development, of a code of conduct relating to the transport of materials on public roads.*

The Applicant's proposed transport route consists of local public roads and the Hume Highway. The Applicant undertook a transport options analysis which considered a number of options for transporting quarry product by road and rail and concluded that road based transport was the only economically viable option for the Project.

The Commission, in giving consideration to clause 16(a), has reviewed the information submitted by the Applicant and the Department. The Commission has formed the view that the information provided is not sufficient to allow a proper and detailed consideration of the suitability of a road only haulage proposal. Greater detail of the Commission's consideration and assessment of road and rail transport is provided in **Section 5.2**.

The Project site and proposed transport route is not near a school or residential area. However, there are school bus stops located on the primary transport route and school buses travel along Brayton Road and Ambrose Road.

The Applicant has an existing Driver Code of Conduct for Heavy Vehicles, which it has committed to update in line with its Statement of Commitments.

**5.2      *s79C (1)(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality***

Avoidance, Mitigation and Adaptive Management

In relation to the evaluation of impacts, the Commission has considered the proposed draft conditions of consent, including the adaptive management condition recommended by the Department.

The Environment Protection Authority (EPA) defines adaptive management as being a ‘*a procedure for implementing management while learning about which management actions are most effective at achieving specified objectives*’ (Office of Environment and Heritage – Adaptive Management).

The consideration of adaptive management is important in the determination of the Project. It allows the consent authority to give appropriate consideration to uncertain and/or unpredictable impacts, the proposed mitigation strategies and relevant performance criteria with the knowledge that the Project operator is required to operate in a state of constant monitoring and process improvement. This is designed to reduce uncertainty and to ensure that exceedances of criteria or standards are avoided to the highest possible extent.

The Commission considers adaptive management to be key in ensuring effective compliance and a consistently applied enforcement regime. In this regard, the Department’s draft Condition 5, Schedule 5 requires that the Project adopt adaptive management, as follows:

*The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.*

*Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:*

- (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;*
- (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and*
- (c) implement remediation measures as directed by the Secretary;*

The Commission considers adaptive management to be key in ensuring an effective compliance and consistently applied enforcement regime.

Noise and vibration

The EIS submitted by the Applicant was accompanied by a Noise and Vibration Impact Assessment. The assessment found that the operational noise levels would be below the project specific noise levels (PSNLs) of 35 dB(A) at all but three residences (R2, R7 and R8). The predicted operational noise levels are set out in the table below.

Assessment location	Predicted operational $L_{Aeq(15-min)}$ noise levels, dB				Noise criteria $L_{Aeq(15-min)}$ , dB
	Day	Evening/ Night	Night	Night	
	Calm	Calm	Prevailing winds <sup>1</sup>	Inversion <sup>2</sup>	
Existing quarry operations					
R2	40	38	40	40	35
R4	39	37	39	39	35
R5	28	25	28	28	35
R6	29	27	29	29	35
R7	33	31	34	34	35
R8	32	30	33	33	35
Year 1 quarry operations					
R2	41	42	44	45	35
R4	41	42	45	45	35
R5	29	31	34	34	35
R6	31	32	35	35	35
R7	34	35	37	38	35
R8	33	34	37	37	35
Year 5 quarry operations					
R2	41	42	44	45	35
R4	41	42	45	45	35
R5	30	31	34	34	35
R6	31	32	35	35	35
R7	34	35	38	38	35
R8	33	34	37	37	35
Year 10 quarry operations					
R2	41	42	44	45	35
R4	41	42	45	45	35
R5	29	31	34	34	35
R6	31	32	35	35	35
R7	34	35	38	38	35
R8	33	34	37	37	35
Year 20 quarry operations					
R2	41	42	44	44	35
R4	41	42	45	45	35
R5	30	31	34	34	35
R6	31	32	35	35	35
R7	34	35	38	38	35
R8	33	34	37	37	35

**Table 1: Predicted operational noise levels**

In accordance with the VLAMP, the Department recommended conditions that would give the owner of R2 acquisition rights and the owners of R2 and R7 'mitigation upon request' rights. Under worst-case meteorological conditions, it is predicted that the PSNL of 35 dB(A) at R8 would be exceeded by 2 dB(A). The exceedance at R8 is classified as minor and under the provisions of the VLAMP, no acquisition or mitigation rights arise. In addition, the Project would be able to operate in accordance with standard blasting criteria.

The Department's assessment report states that *'it is satisfied it has required Gunlake to implement all reasonable and feasible measures to minimise the impacts of operational and traffic noise as a result of the project'*.

The Department and Commission received submissions which raised concerns regarding the:

- potential increase in noise emissions as a result of the Project;
- proposed increase to 24 hour quarrying operations;
- potential for increased road traffic noise as a result of the significant increase in volume of truck movements; and
- noise assessment and current exceedances.

The Commission notes that the Environment Protection Authority (EPA) identified a number of concerns relating to operational noise, blasting and road traffic in its submission on the Applicant's EIS. Specifically, the EPA noted that the Project would lead to a significant increase in traffic levels on the primary transport route and that the effect of this increase would be most keenly felt by the

residents living along that route. However, the EPA also notes that the Project is predicted to comply with the *NSW Roads Noise Policy*.

In its Response to Submissions Report, the Applicant committed to enclose its primary crusher to address concerns raised by the EPA and the community. The EPA welcomed the commitment by the Applicant to enclose the primary crusher and acknowledged that a number of issues it had previously raised had been incorporated in the Applicant's updated Statement of Commitments.

The Commission requested further information from the Applicant with regards to the proposed method for enclosing the primary crusher. The Applicant confirmed the following:

- the enclosure would be constructed with standard sheet metal (with a minimum weight of 6 kg/m<sup>2</sup>) attached to a steel frame around the crusher;
- openings in the enclosure would be minimised to those required by operations and for maintenance;
- the structure would be designed to achieve a minimum noise reduction of 5 dB(A) at the source as required by draft Condition 3, Schedule 3; and
- the enclosure is predicted to reduce noise by at least 5 dB(A) using the proposed materials.

The Commission has reviewed the information submitted by the Applicant together with the draft conditions and is satisfied the concerns raised have been adequately addressed.

The Commission acknowledges that whilst the Project would result in noise and vibration impacts, such impacts comply with the respective applicable standards. The Commission finds that the Project would, subject to the mitigation measures proposed by the Applicant and conditions recommended by the Department, have acceptable noise and vibration impacts.

#### Air quality

The EIS submitted by the Applicant was accompanied by an Air Quality Impact Assessment. The assessment found that the Project would not exceed current air quality criteria at any privately-owned residences near the quarry. The Applicant currently has in place a number of measures to reduce dust emissions at the quarry. In addition, the Department has recommended a number of conditions to ensure that the proposed operations are undertaken in a way that would minimise the Project's air quality impacts.

The Department's Assessment Report states that subject to its recommended conditions '*the Department is satisfied that the air quality impacts of the project are acceptable*'.

The Commission received submissions raising concerns with air quality and dust emissions resulting from the existing quarry site and the potential for increased impacts as a result of the Project's expansion. In its submission on the EIS, the EPA noted that Project's dust impacts are predicted to be below applicable limits. However, at the request of the EPA, the Department recommended condition 16, Schedule 3, which required increased monitoring of PM<sub>10</sub> (specifically an additional high volume air sampler (HVAS) to the west of quarry operation to allow greater understanding of the contribution of Gunlake Quarry to regional air quality.

During the Applicant's briefing to the Commission, it requested an amendment to condition 16 to reduce the requirement from two HVAS' to one. The Applicant noted the adjacent residence is tenanted and does not support the location of the air sampler. The air quality modelling does not show any exceedances and the Applicant considers there is no justification for the additional

monitoring. However, the Commission considers the condition is appropriate as drafted given it is based on a request from the EPA.

The Commission acknowledges that whilst the Project has the potential to impact on air quality, such impacts comply with the applicable standards. The Commission finds that the Project would, subject to the mitigation measures proposed by the Applicant and conditions recommended by the EPA and the Department, have acceptable air quality impacts.

### Rehabilitation

The EIS was accompanied by a Land Resources and Rehabilitation Study, which considered the potential impact of the Project on the site's land capability. The Department's assessment report states that following quarrying, approximately 48 ha of the 99 ha of disturbed land (predominantly the pit area) would be unsuitable for agricultural production. When quarrying concludes, the quarry pit void would gradually fill with a combination of groundwater inflows and rainfall, which would remain a deep water-filled void with near vertical rock walls. The remainder of the land would be able to be rehabilitated and would be suitable for grazing purposes. The Department considers that the loss of approximately 48 ha is acceptable given the economic benefit and the general availability of agricultural land nearby.

The Department recommended a condition which requires the Applicant to prepare and implement a Biodiversity and Rehabilitation Management Plan (Condition 36, Schedule 3). A further condition is recommended requiring the Applicant to lodge a bond with the Department to ensure rehabilitation is carried out to the satisfaction of the Secretary (Condition 37, Schedule 3).

The Commission acknowledges that the Department's recommended conditions regarding rehabilitation management and bonding is consistent with NSW Government policy and other extractive industries operations within NSW. However, the Commission considers that a more environmentally focussed approach towards the management and rehabilitation outcomes of final voids should be at the forefront of any assessment and determination of extractive industries within NSW.

### Road and rail transportation

In its consideration of road and rail transportation, the Commission formed the view that the likely Project impacts relate to road safety which is most appropriately considered a social impact. Accordingly, this section covers the issue of road and rail transportation, the options considered and the findings of the Applicant's and the Department's assessment of the relevant issues.

The Commission received a number of submissions from the public commenting on the method of transportation proposed by the Project and the conclusions arrived at by the Applicant. The key concerns raised are summarised as follows:

- road safety and a lack of effective monitoring of truck driver behaviour;
- quality of the road, including road surface and verges;
- blind spots along the haulage route and impacts on merging traffic;
- alignment and grade of the haulage route makes it difficult for laden trucks to maneuver;
- rail options have not been seriously or genuinely examined;
- no evidence of consultation with Holcim or whether the Applicant gave proper consideration to the use Holcim's rail infrastructure; and
- cost assumptions for rail appear to be deliberately cost prohibitive to support the Applicant's road only option.

It is evident through the nature of submissions by both the public and government authorities that road safety is a matter of critical importance to the suitability of the Project. The Project is seeking to significantly increase the number of heavy vehicles using the local and national road network for the next 30 years.

#### *Applicant's Environmental Impact Statement and Response to Submissions*

The EIS submitted by the Applicant was accompanied by a Transport Assessment and a Transport Options Review. The Project seeks to increase average daily truck movements from 164 to 440 and increase the maximum daily truck movements from 230 to 590. The draft conditions of consent define trucks movements as follows: *'heavy vehicle one-way trips, either entering or leaving the site'*. The Department's Assessment Report identified this as significant, specifically that, *'the impact of this proposed increase, particularly on residents living along the primary transport route between the quarry and the Hume Highway, has been at the forefront of the Department's consideration and assessment of this project'*.

The Transport Assessment found that the impact of the additional trucks on the capacity and safety of the primary transport route would be acceptable and that the existing road network, including its intersections, generally has the capacity to accommodate the proposed additional truck movements, subject to the following measures being implemented:

- construct an additional 500m long (including taper) left turn northbound acceleration lane from Red Hills Road onto the Hume Highway before 2025 in accordance with Austroads (2013) intersection design requirements;
- update the existing traffic management plan and the Driver Code of Conduct for Heavy Vehicles; and
- continued section 94 development contributions to the Council.

The role of the Transport Options Review was to identify and describe all reasonable options to reduce transport of quarry products on local roads and in response considered a range of options, including:

- road transport only options;
- rail/road (Sydney) transport options; and
- rail/road (local and Sydney) transport options.

The Applicant's EIS determined there are extensive unresolved technical and design issues relating to the alternative road and rail options, concluding that *'the continuing use of trucks on the primary and secondary haul routes was the most economically feasible and is likely to result in the least environmental impacts of the options considered'*. (EIS, April 2016). The Commission notes that the Transport Options Review provided a very brief consideration of the likely design and environmental constraints, however there was no detailed or contextual analysis for the options considered.

On 25 May 2016, the Department wrote to the Applicant requesting a response to the submissions received regarding its EIS. The Department requested the Applicant *'undertake further work to ensure it has identified the lowest-cost option for transporting all or some of its products by rail (following consultation with Holcim) and provide a detailed analysis of the costs and benefits associated with this option compared to the costs and benefits of transporting its products by road under the company's preferred option. The analysis should include a comparison of the costs of the two scenarios with regard to the full range of economic, social and environmental costs, including the external costs of traffic congestion, carbon emissions and road accidents'*.

In response to the Department's request, the Applicant undertook further assessment of transport options and commissioned the following reports:

- *Gunlake Quarries Rail Transport Study* (Hatch, 2016);
- *Gunlake Quarry Road Options Assessment* (EMM Consulting);
- *Stage 5 Road Safety Audit, Transport from Gunlake Quarry Entrance to Hume Highway* (Lyle Marshall & Partners and McLaren Traffic Engineering); and
- *Review of Cost Benefit Analysis of Gunlake Quarry Rail Transport Study Prepared by Hatch* (Gillespie Economics).

The *Gunlake Quarries Rail Transport Study (Rail Transport Study)* considered a number of road and rail options including:

- three options for train loading: at Gunlake Quarry, within Lynwood Quarry and at a new siding adjacent to the Main Southern Railway line west of Lynwood Quarry. Both options for loading outside of the Gunlake Quarry site require the construction of a private haul road;
- two train unloading options at Glendenning;
- three train unloading options at Smeaton Grange; and
- one train unloading option at Silverwater.

The *Rail Transport Study* included some indicative costings for the road/rail options and the private haul road options and compared these options to the base case of transporting quarry products using the Applicant's preferred road only haulage route. The Response to Submissions Report indicated that all transport options include some component of truck transport from a rail unloading facility onto the Sydney road network and that there are no rail-only transport options.

The *Gunlake Quarries Road Options Assessment (Road Options Assessment)* considered a private haul road option, which extends from the Gunlake Quarry processing area, through Lynwood Quarry to the Marulan South Interchange on the Hume Highway, approximately 8.7 km in length. The *Road Options Assessment* summarised the costs (derived from the Hatch *Rail Transport Study*) and provided a high level analysis of the likely environmental impacts associated with the private haul road compared to the Applicant's preferred haulage route, including:

- land use;
- biodiversity;
- Aboriginal heritage;
- historic heritage;
- noise and vibration;
- air quality and greenhouse gases;
- surface and groundwater; and
- social (safety and visual).

The *Road Options Assessment* concluded that there would be increased noise levels, truck visibility and lighting impacts on areas west of the private haul road route. However, the analysis determined that the applicable criteria would be met.

The *Road Safety Audit* recommended a number of corrective actions for the preferred haulage route, which the Applicant has committed to implement, as set out in its Statement of Commitments including:

- update its Truck Driver Code of Conduct to include all recommended actions;
- fit and monitor GPS technology to Gunlake owned trucks;
- work with the Council to install centre double white lines along appropriate sections of the primary haul route;

- work with the Council to install edge lines along the appropriate sections of the primary haul route;
- work with the Council to commission survey, risk assessment and costing;
- work with the Council to determine appropriate guide post spacing based on an analysis of the frequency of heavy fogs; and
- work with Council to make a formal submission to the RMS to lower the speed limit to 80km/hour and install appropriate signage.

A full list of the Applicant's Statement of Commitments is provided in **Appendix 4**.

Having considered the findings of the transport options assessments, the Applicant's Response to Submissions Report concluded there are no economically viable rail transport options, with the cheapest rail option having a net present cost of between \$121-\$125 million more than the Applicant's preferred road haulage route. It also concluded that construction of a private haul road from Gunlake Quarry to the Marulan South Interchange, would have a net present cost of \$44 million more than the Applicant's preferred haulage route. In summary, the Applicant concluded that *'the ongoing use of the primary and secondary transport routes, as proposed in the EIS, is the only feasible transport option for the extension project'*.

#### *Roads and Maritime Services*

In its submission on the EIS, the Roads and Maritime Service (RMS) raised concerns regarding truck driver behaviour at the intersection of the Hume Highway and Red Hills Road, having observed and documented unacceptable driver behaviour to the extent that *"Heavy vehicles have been witnessed on multiple occasions to turn directly onto the shoulder of the Hume Highway to accelerate and then merge into the travel lane of the Hume Highway without stopping and waiting for an appropriate gap"*.

RMS considered the Applicant's initial proposal to provide the acceleration lane before 2025 and concluded that this would not be sufficient and that the northbound acceleration lane would need to be constructed before any increase in truck movements occurred. In response to RMS' concerns, the Applicant has committed to construct the acceleration lane as soon as RMS approval for its design and construction is provided. RMS has reiterated its position that construction of the acceleration lane must occur prior to any increase in traffic generation as a result of the Project.

To address safety issues associated with truck driver behaviour at the Hume Highway and Red Hills Road intersection, the Department recommended a condition requiring the Applicant to operate a video camera at the intersection (Condition 27, Schedule 3) to record all vehicles turning left from Red Hills Road to the Hume Highway, until such time as the acceleration lane is constructed. The Applicant requested that Condition 27 be deleted, citing constraints of powering a camera in this location to serve as a short-term measure and the personnel hours involved in reviewing the footage. The Commission considers that Condition 27 would provide an appropriate means for monitoring truck driver behaviour in this location, given experience to date with driver behaviour and the absence of effective compliance with the requirements of road safety.

#### *Clarification sought by the Commission*

The Commission sought further clarification on transport related issues from both the Applicant and Council, as set out below.

## Applicant

1. *The Commission requests further clarification that the Project's 'Statement of Commitments' appropriately reflects Council's request, in its role as the local roads authority. Alternatively, it is noted that the submitted Transport Assessment establishes that the haulage route "generally meets Austroads" requirements. Confirmation is required from you that the haulage roads will be upgraded in accordance with the relevant Austroads standards in consultation with Council.*

In its response, the Applicant did not confirm whether the haulage route would be upgraded in accordance with relevant Austroads standards, and stated that *"All of the proposed roadworks on local roads were proposed as goodwill initiatives by Gunlake and following consultation with Council. The proposed roadworks are not required as a result of the Extension Project but are seen as proactive worthwhile improvements to the local road network"*.

2. *the Commission requests that Gunlake provide a concept design of a rail spur from the Main Southern Railway Line to the Gunlake Quarry site which will traverse along the western side of the quarry. The concept is to take all reasonable steps to avoid the most sensitive land in this area and shall be accompanied by a preliminary impact analysis, including the consideration of any environmental limitations of the presented option. The Commission also requests an estimated costing of the concept design, including pricing assumptions.*

In its response, the Applicant referenced information submitted as part of the original application and the Response to Submissions Report, reiterating its position that rail transport is simply not a viable option for the Project. The Commission notes that the Transport Options Review, that accompanied the EIS, provided a very basic consideration of the likely design and environmental constraints of a western rail spur, however the analysis was of such a basic standard to prevent a detailed and thorough assessment of the rail spur impacts. The Applicant did confirm the estimated costing of this option as \$146.1 million, including turnouts and signalling for connection to the mainline and associated pricing assumptions as requested. However, the Commission's request for a preliminary impact analysis was not satisfied.

3. *the Commission requests details of any consultation undertaken with the Australian Rail Track Corporation (ARTC) to date, particularly regarding freight network capacity on the Main Southern Railway Line and the establishment of a rail spur to service the quarry and possible Sydney end unloading points. It would also be appreciated if Gunlake would confirm that it has actively engaged in discussions with other rail service providers as part of the rail investigation.*

The Applicant confirmed it had actively engaged with three rail haulage operators as part of the rail investigation and received non-binding quotes that were subject to commercial negotiation from two operators. Both operators confirmed that track capacity issues were not expected in the short-medium term for the contemplated volumes. The Applicant confirmed these discussions had informed the cost estimates presented in the *Rail Transport Study*.

4. *The Commission would welcome further advice on the quantification of economic and social costs, including externalities, in the context of your further advice on the alternative road and rail options.*

The Applicant confirmed that the net present costs of externalities were calculated in the *Rail Transport Study* for each option considered. No additional information was provided.

## Goulburn-Mulwaree Council

The Commission sought clarification from the Council as to its satisfaction with the draft conditions of consent and the Applicant's Statement of Commitments. Council's response highlighted the following matters:

- *'Council does not normally deal with developments involving such significant volumes of heavy vehicles;*
- *the community has ongoing reservations about such a significant increase in heavy vehicle movements; and*
- *Austroads standards are designed to address the risks posed by such traffic volumes and types'.*

Council notes that compliance with Austroads standards would require the following carriageway widths:

- *'Brayton Road: 11.0m wide carriageway consisting of 2 x 3.5m lane width, plus 2 x 2.0m shoulders; and*
- *Ambrose and Redhills Road: 9.2m – 10.0m wide carriageway'.*

The Council raised concern that neither Brayton Road, Red Hills Road nor Ambrose Road currently wholly comply with Austroads standards, *'nor is this reflected in the Applicant's Transport Assessment'*.

The Council requested that the Applicant undertake additional work to ensure the upgrade to the haulage route is provided to an appropriate standard given the significant volume of haulage materials and the 30 year approval. The Council set out its requests in its response to the Commission, specifically that:

- *'the Applicant engage a qualified and experienced traffic engineer to analyse and investigate the need, and potential locations for overtaking lanes as per Austroads standards; and*
- *the Applicant engage a suitably qualified and experienced engineer to undertake a pavement analysis, to ensure that the pavement can withstand the additional loads, particularly in light of existing evidence of pavement failure under the current conditions'.*

In addition, the Council raised concern regarding the Applicant's Statement of Commitments and requests that some commitments be amended to remove ambiguity. For example, commitments that state *'Work with Council to...'* be amended to *'all costs to be met by Gunlake'* to clarify that the Applicant would bear the costs of upgrading the haulage route.

### *Evaluation and findings of the road / rail options*

The Department's Assessment Report concluded that having carefully considered the submissions of local residents who raised significant concerns over the current and proposed use of the primary transport route, the Department accepts that residents that live along the route or that use the route would notice the impact of the proposed significant increase in volume of trucks. However, the Department notes the relatively small number of residents affected, particularly on Ambrose Road and Red Hills Road. The Department notes there are school bus stops along on the haul route and school buses travel along Brayton Road and Ambrose Road. The Department also notes that the local community has expressed a strong preference that quarries in the Marulan area use rail to transport quarry products.

In addition, the Department states that it is satisfied that the Applicant has demonstrated that there is no economically viable way to transport quarry product by rail, and that it is satisfied with the level of detail in the Applicant's assessment of the costs of constructing a private haul road to the Marulan South Interchange. With regards to safety concerns raised by the local community, the Department agrees there are a number of improvements that should be made to the primary transport route to address safety concerns and to minimise the impacts of increased truck numbers on the amenity of residents who live along the route.

The Department concluded that it is: *'satisfied that it has identified all reasonable and feasible measures available to Gunlake to minimise the impact of the increased number of trucks on the primary transport route. The Department's recommended conditions require Gunlake to operate in accordance with its Statement of Commitments and specifically to construct the acceleration lane on the Hume Highway prior to exceeding its current maximum haulage rate, implement the corrective actions in the Road Safety Audit and undertake the proposed road upgrades along the primary transport route'*.

The Commission has not been able to give adequate consideration to the issue of road safety due to a lack of sufficient information to make an informed decision on road safety impacts and is therefore unable to agree with the Department's conclusion regarding road safety. In addition, the Commission considers that, in view of the presence of school bus stops on the primary transport route and the fact that school buses travel along the route, there is potential for a significant transport conflict during school bus movements.

The Commission has carefully considered the information contained in the EIS, the Response to Submissions Report, the Department's Assessment Report, including draft conditions of consent and the additional information provided by both the Applicant and the Council.

The Commission considers the following matters of notable significance:

1. The Transport Assessment concludes that parts of the haulage route do not comply with Austroads standards and does not make any recommendations for the upgrade of the haulage route to ensure compliance with Austroads standards, despite acknowledging non-compliance;
2. The Road Safety Audit concludes that the 'the carriageway width, shoulder width and shoulder seal comply with the Goulburn Mulwaree DCP 2009 – Engineering Requirements'. However, it is noted that Clause 11 of SEPP SRD states that development control plans do not apply to State significant development. In this instance the Commission finds the Austroads standards to be more relevant than the DCP particularly given the type and intensity of the traffic generated by the project is not contemplated by the DCP;
3. The Applicant's Statement of Commitments and the Department's draft conditions of consent do not require upgrading of the haulage route to an appropriate standard commensurate with the predicted heavy vehicle impacts in accordance with Austroads standards. Without an acknowledgement and acceptance of the full extent of upgrades required to achieve an appropriate standard, it is not possible to accurately define the costs for the road option; and
4. The overall assessment of rail transport options is deficient. In view of the concerns raised by the community and the Council, the Applicant has not given adequate consideration or documented the relevant issues associated with the rail transport options.

In review of the information before it, the Commission finds that:

- any increase in traffic generation should not occur until the northbound acceleration lane on the Hume Highway has been constructed and commissioned which would minimise safety impacts associated with trucks turning onto the Hume Highway from Red Hills Road;
- the Applicant's Road Safety Audit incorrectly utilises Council's DCP and not Austroads standards as the basis for its safety audit and therefore cannot be given significant weight;
- there remains concern for the potential for road safety impacts generated by the Project and considers that the recommendations of the road safety audit do not adequately address road safety;
- requirements for road safety upgrades to the local road network as a result of the Project need to be clearly established now and resolved at the expense of the Applicant and that long-term issues should not be deferred for future resolution and expense of Council; and
- until such time as the scope of road safety upgrades have been resolved, the cost assumptions adopted by the Applicant for the road haulage option cannot be relied on. The costs assumed do not accurately reflect the cost of road upgrades required to support the road haulage option, nor do they provide an adequate basis for comparing road and rail transport options.

The Commission considered the potential for applying conditions of consent requiring the Applicant to upgrade the haulage route in accordance with the appropriate Austroads standards. However, there is significant uncertainty in relation to the scope of the works required to achieve Austroads standards, which is reinforced by comments from the local roads authority and the absence of any clear or measurable commitment from the Applicant to upgrade the haulage route to an appropriate standard. The Commission considers that even subject to the recommended conditions of consent and the implementation of the Applicant's proposed measures, there can be no assurance that the Project (as proposed) will not present a significant negative road safety impact within the locality on other road users and it is therefore not considered reasonable or appropriate to condition compliance with Austroads standards in this instance.

The Commission acknowledges the Department's assessment of issues; however, it finds there would be a significant social impact generated by the Project as a result of the proposed increase in haulage truck movements on the local road network. The Commission is of the opinion that the potential negative social impacts generated outweigh any potential economic benefits within the locality. This is evidenced by the absence of any commitment by the Applicant to adequately upgrade the road to safely cater for the increased haulage traffic, or provide a more robust consideration of rail haulage in light of the total available resource within the Project site.

### Economic Impacts

The EIS was accompanied by an Economic Assessment, which included a cost-benefit analysis, a local effects analysis (LEA) and a supplementary LEA to assess the direct and indirect economic activity. The EIS states that environmental, cultural and social impacts of the Project have been minimised through Project design, mitigation, offset and compensation measures and that the Project is estimated to have net social benefits to NSW of between \$16 million and \$27 million over the life of the Project. The EIS concludes that the Project is therefore desirable and justified from an economic efficiency perspective.

The Applicant's Response to Submissions Report included a review of the cost benefit analysis of the *Rail Transport Study* undertaken by Gillespie Economics. The review considered the additional work undertaken by the Applicant on potential road and rail transport options as requested by the Department in response to the submissions received on the EIS. The review concluded: '*most of the incremental \$121M (present value) of cost of the cheapest rail options and \$44M (present value) of*

*the cheapest private road option is capital and operating costs, which would be borne by the proponent. This additional cost is greater than the estimated financial benefits of the Project and would make the Project financially unviable’.*

The Department’s Assessment Report notes it considered the cost benefit analysis and is satisfied that any rail option, or the private haul road option considered (through Lynwood Quarry to link with the Marulan South Interchange) would result in the Project being unviable. However, the Commission finds deficiencies in the assessment of the rail transport options, and that the scope and cost estimates presented for upgrading the local road network have been underestimated, particularly as the scope does not contemplate an upgrade in accordance with Austroads standards.

While the Commission finds that the Project has the potential to provide economic benefits for the locality by way of additional direct and indirect employment opportunities, the Commission notes that the direct employment is limited to an additional seven on-site employees and approximately 20 truck drivers. With the exception of employment there are limited other economic benefits generated by the Project within the locality to outweigh the social costs identified by the community. The Commission finds that the majority of the economic benefits would be by way of private benefit to the Applicant.

### **5.3     *s79C (1)(c) the suitability of the site for the development***

The Commission notes the presence of a significant volume of hard rock aggregate within the Project site and that market demand for hard rock aggregate will continue to increase overtime, particularly within the construction market in the Sydney basin.

The Commission acknowledges that whilst the development can comply with noise and air quality criteria, the absence of an appropriate haulage solution by the Applicant, renders the site unsuitable for the proposed development.

### **5.4     *s79C (1)(d) the public interest***

In evaluating whether the Project is in the public interest, the Commission has given consideration to both the potential positive and negative impacts of the Project within the locality. In forming a view on the public interest, the Commission has considered the relevant objectives of the EP&A Act, which states:

- (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment; and*
- (ii) the promotion and co-ordination of the orderly and economic use and development of land.*

The Commission has given consideration to a number of relevant strategic policies that relate to the Project and the Project site which include the *Sydney Canberra Corridor Regional Strategy (2006-2031)* and the *Draft South East and Tablelands Regional Plan* which closed for public exhibition in August 2016 and will replace the *Sydney Canberra Corridor Regional Strategy (2006-2031)*. Both policies make reference to the quarrying industry in the Southern Highlands, particularly Marulan, and the significant role the region will play in providing sand and hard rock materials to support Sydney’s construction industry, and particularly notes the location of these resources near major road and rail infrastructure.

The Commission considers the transport of quarry product by road to be a serious public interest issue. The local community and the Council raise critical concerns with the current state of the local road network, particularly in relation to the existing number of quarry trucks that utilise the primary transport route. Local community submissions call for close and careful attention to opportunities for the Applicant to use rail transport. The Council, in its submission on the EIS, identifies the need for *'greater emphasis given to strategically addressing the broader heavy vehicle transport management opportunities'*. The Commission considers that given the proximity to the Main Southern Rail Line there appear to be opportunities for a strategically coordinated transport solution for moving quarry product by rail from the region to the Sydney market.

The Commission notes opportunities to move product by rail will also have a range of challenges in terms of delivery and feasibility. However, rail options should not be automatically discounted for such reasons and need to be considered as the starting point for analysis of transport options for future projects.

The Commission has heard that quarrying rock is very heavy product and likely more suited to rail transport over longer distances, given the traffic and public safety issues associated with road transport options in both the local area and beyond as the rock product makes its way into the Sydney basin.

The Commission notes a lack of emphasis within existing strategic policy as to the future transportation needs to support moving very large volumes of heavy quarry product between the region and the Sydney market. Given the growth of the quarrying industry within the region, any significant increase in the amount of quarry product being transported to the Sydney market requires careful long term management. This Project, with its proposed sizeable truck movements of 440 per day on average and 590 per day maximum, is one such Project.

The Commission has heard that whilst there are likely to be significant capital costs in establishing rail infrastructure, once established it can be operated far more efficiently than the road solutions. The Commission considers that there may be opportunities for a co-ordinated approach to the provision of rail infrastructure in the region that are not currently being considered in order to support the quarrying industry into the future, including road transport for local product uses and rail transport of product into the Sydney market.

The Commission accepts that the quarry Project has the potential to be in the public interest, particularly through the generation of local employment opportunities and access to natural resources. The Commission also notes that the Project site contains a significant resource of approximately 180 million tonnes which would permit extraction of two million tpa for a 90 year period.

However, the Commission has not been persuaded that the proposed road-only transport option is the most efficient, effective or appropriate method for transporting significant volumes of heavy rock quarry product for the next 30 years and beyond.

Accordingly, the Commission finds that to grant a 30 year approval for a Project that does not attempt to comply with preeminent and Project specific road safety standards in Austroads or countenance non-road transport options would have the potential to create significant negative social impacts due to a lack of road safety outcomes and on balance would not be in the broader public interest.

## 5.5 Other relevant issues

### *Construction materials supply chain*

The Commission wrote to the Department on 1 March 2017 seeking advice in relation to the need for a strategic framework for transportation of quarry products in NSW. In response, the Commission received correspondence from the Department dated 31 March 2017 referring to a study undertaken for Transport for NSW (TfNSW) in May 2016 regarding the supply chain of Sydney construction materials.

The study identifies several supply chain challenges in relation to road transportation, which include:

- construction material supply chains are largely susceptible to network issues;
- payload restrictions result in reduced load productivity and increased trip volumes in the supply chain; and
- limited demand management to free up network capacity.

Possible long term solutions identified in the study include upgrading road capacity in select corridors, increasing payload limits on State and locally managed bridges and roads to enable higher productivity vehicles to carry larger volumes of product and on-road priority for freight vehicles where warranted.

Additionally, the study identifies several rail supply chain challenges, which include:

- connectivity to the rail head at the site of supply;
- optimal terminal location – should be near service catchments to ensure minimum efficient scale for operation – and configuration;
- connectivity to road network to support secondary movements; and
- appropriately zoned industrial land with suitable buffers from sensitive land uses.

Possible long term solutions include investigating sites for potential future rail terminals and feasibility studies to develop a new bulk handling terminal on the rail network to receive and store construction materials.

The study also notes that while road freight has been the predominant transport mode used in the supply chain to date, the increased reliance on materials from quarries further outside the Sydney region has increased travel distances and therefore the cost of transporting materials by road.

The study confirms rail transport offers a more cost effective (per unit) form of transportation and using both rail and road are significantly cheaper than road only transportation. Specifically, the cost analysis shows rail transportation from three major quarries supplying aggregate to Sydney is currently 30-36 per cent cheaper than road. In addition, the study notes that from a social welfare perspective, increased use of rail reduces negative externalities, by decreasing the number of large vehicle movements on roads.

The transportation of construction materials to the Sydney market requires a careful long term strategic outlook and the development of an integrated transport plan.

### *Compliance with existing approvals*

The Department's Assessment Report and public submissions both refer to lapses in the compliance performance of the Applicant under its existing quarry approval and the lack of effective enforcement action. The Commission notes compliance performance is not a relevant matter for consideration in determining the Project. However, the Commission considers that an effective and credible regulatory regime is critical to public confidence in the planning system and the extractive industry. The Commission acknowledges community concerns about the effectiveness in the regulatory regime in ensuring compliance with conditions of consent.

The Commission is aware that the NSW Government has provided a significant increase in compliance resourcing in the past few years and that increased governance of consent conditions has been actively occurring within NSW. The Commission is satisfied that the existing Project will be subject to appropriate regulatory scrutiny over its operational life and that appropriate enforcement action will occur if required.

### *Community consultation*

The Department's Assessment Report states that after traffic and noise impacts, an issue of common concern was the Applicant's limited consultation with the community, an issue also raised by the Council in their submission on the EIS. Notwithstanding, the Commission notes that the Applicant carried out consultation with the relevant agencies as required in accordance with the SEARs.

In response, the Applicant has appointed a Community Liaison Team to manage community engagement. The Commission considers this to be an appropriate response given the level of local community interest on the current operation and the proposed Project. However, it notes community views that the quality of the Applicant's engagement with the community falls short of the standards achieved by other operators in the locality and could be further improved.

## **6. COMMISSION'S FINDINGS AND DETERMINATION**

In exercising the function of determining the application under section 89E of the EP&A Act, the Commission is to undertake such determination by:

- granting consent to the application with such modifications of the proposed development or on such conditions as the Commission may determine; or
- refusing consent to the application.


The Department's Assessment Report considered the positive and negative economic impacts of the Project. In balancing the environmental, social and economic considerations of the Project, the Department considered the costs and benefits of the Project, particularly with regard to the viability of other potential transport options, including rail. The Department notes that it is satisfied that the transport option presented in the EIS is the only reasonable and feasible option currently available.

The Commission has carefully considered matters relevant to the determination of the application. In balancing both the benefits and adverse impacts considered within the report, the Commission determines that:

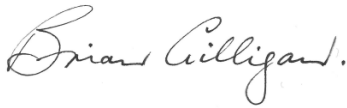
- the Applicant has not given sufficient consideration to the provision of an appropriate upgrade to the local road network to account for the significant increase in heavy vehicle traffic movements in accordance with Austroads standards;

- the Applicant has provided insufficient information to justify that the use of the local road network for haulage without compliance with Austroads standards would not create a potential road safety issue;
- the Applicant has provided insufficient information to allow an accurate and genuine consideration of road versus rail based haulage; and
- the Project as proposed will have unacceptable social impacts, including negative road safety outcomes, and is not in the public interest.

Accordingly, pursuant to section 89E of the EP&A Act, the Commission refuses consent for the Project.



**Lynelle Briggs (Chair)**  
**Member of the Commission**



**Brian Gilligan**  
**Member of the Commission**



**Roger Fisher**  
**Member of the Commission**

## APPENDIX 1 RECORDS OF COMMISSION MEETINGS

### Notes of Briefing from the Department

<b>This meeting is part of the Determination process</b>		
<b>Meeting note taken by</b> Alana Jelfs	<b>Date:</b> 20 January 2017	<b>Time:</b> 9am
<b>Project:</b> Gunlake Quarry Extension Project – D447/16		
<b>Meeting place:</b> Planning Assessment Commission (PAC Office)		
<b>Attendees:</b> Commission Members: Lynelle Briggs (Chair), Roger Fisher and Brian Gilligan Commission Secretariat: David Koppers (Team Leader) and Alana Jelfs (Planning Officer) Department of Planning and Environment: Howard Reed (Director Resource Assessments) and Margaret Kirton (Senior Planning Officer)		
<b>The purpose of the meeting:</b> For the Department to brief the Commission on the Project		
<b>Meeting notes:</b>  The Department raised the following matters: <ul style="list-style-type: none"> <li>• Transport – road/rail               <ul style="list-style-type: none"> <li>- Key issues raised in public submissions, particularly in relation to road safety, impacts associated with heavy vehicle haulage and driver behaviour.</li> <li>- The Secretary’s Environmental Assessment Requirements (SEARs) required the Applicant to consider transport alternatives, including extension of the bypass road/private haul road or use of existing rail infrastructure or new rail infrastructure.</li> <li>- The Applicant consulted Holcim regarding the possibility of sharing rail infrastructure.</li> <li>- Private haul road options considered potential environmental and social impacts and likely acquisition requirements.</li> <li>- The Applicant provided further information on transport options as part of its Response to Submissions.</li> <li>- Economic viability of rail transport and constraints associated with establishing rail infrastructure.</li> <li>- Marulan South Interchange and request from Holcim to recoup costs from the Applicant.</li> </ul> </li> <li>• Noise/air quality               <ul style="list-style-type: none"> <li>- Adequacy of existing noise monitoring in accordance with the requirements of the current approval.</li> <li>- Results of the noise assessment and proposed enclosure of the primary crusher.</li> <li>- Community concerns over noise and dust emissions.</li> </ul> </li> <li>• Community consultation               <ul style="list-style-type: none"> <li>- The local community is actively engaged and support the quarrying industry, but not road haulage.</li> <li>- Public submissions raise concerns over a lack of engagement from the Applicant.</li> <li>- Several public submissions note the potential for the Applicant to use rail to transport its product.</li> </ul> </li> <li>• Conditions               <ul style="list-style-type: none"> <li>- Overview of proposed conditions of consent to address potential Project impacts.</li> <li>- Draft Condition 8 is carried over from the Applicant’s current consent.</li> <li>- Timing for construction of the acceleration lane and drafting of the relevant condition.</li> </ul> </li> </ul>		

**Outcomes/Agreed Actions:** The Department to provide the Commission with the legal advice it sought regarding the South Marulan Interchange.

**Meeting closed at 11am**

## Notes of Briefing from the Applicant

<b>This meeting is part of the Determination process</b>		
<b>Meeting note taken by</b> Alana Jelfs	<b>Date:</b> 30 January 2017	<b>Time:</b> 12pm
<b>Project:</b> Gunlake Quarry Extension Project – D447/16		
<b>Meeting place:</b> Gunlake Quarry, Brayton Road, Marulan NSW 2579		
<b>Attendees:</b> Commission Members: Lynelle Briggs (Chair), Roger Fisher and Brian Gilligan Commission Secretariat: Alana Jelfs (Planning Officer) and Philippa Vale (Project Officer) Gunlake Quarries Pty Ltd: Ed O’Neil (Managing Director), Julian O’Neil, Simon O’Neil, Andrew Wade, Steve Bridger (Hatch), Brett McLennan (EMM Consulting), Lauren Donohoe (OPF Consulting)		
<b>The purpose of the meeting:</b> For Gunlake Quarries Pty Ltd (the Applicant) to brief the Commission on the Project		
<b>Meeting and site visit notes:</b>  The following matters were discussed: <u>Overview</u> <ul style="list-style-type: none"> <li>• Gunlake Quarry supplies concrete aggregate to its Sydney based batching plants.</li> <li>• There are 120 full time employees and transport contractors. The expansion will generate an additional 87 jobs.</li> <li>• The Applicant spends more than \$1m within the local community annually.</li> </ul> <u>Road network</u> <ul style="list-style-type: none"> <li>• A road safety audit was undertaken, recommending several corrective actions.</li> <li>• The proposed average daily number of laden trucks equates to 220 per day.</li> <li>• Bypass Road was built for heavy vehicles.</li> <li>• Modelling shows the northbound acceleration lane onto the Hume Highway is not required until 2025 (once the 2 million tpa extraction rate is reached). The Applicant has committed to build the acceleration lane once RMS design approval is obtained.</li> <li>• To manage safety and driver behaviour, photos are taken of trucks at random, and notices posted to drivers daily.</li> </ul> <u>Draft conditions of consent</u> <ul style="list-style-type: none"> <li>• The Applicant request amendments to various draft conditions in Schedule 3.</li> </ul> <u>Rail Transport Study</u> <ul style="list-style-type: none"> <li>• Several rail/road transport options were considered.</li> <li>• The private haul road option considered 2 main routes (west and east of the Holcim facility).</li> <li>• The cost comparison model included capital costs, haulage costs un/loading facilities, maintenance and externalities.</li> <li>• The lower economic viability of rail transport and the significant difference in cost between the base (road transport) case and the lowest cost rail option.</li> </ul> <u>Noise and air quality</u> <ul style="list-style-type: none"> <li>• The project complies with the EPA’s Industrial Noise Policy (INP) at all but the closest residences (which are addressed through the <i>Voluntary Land Acquisition Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments</i> (VLAMP)).</li> </ul>		

- The Applicant has agreed to enclose its primary crusher. It will take approximately 4 months to build the enclosure.

#### Consultation

- OPF Consulting was recently engaged to form a community liaison team to manage community engagement.
- Online inquiry form developed, notifications sent to residents, contact made with persons who made submissions, one-on-one meetings arranged and community phone line established.

#### **Site visit:**

- The Applicant identified site operations, infrastructure and the proposed transport route (Brayton, Ambrose and Red Hills Road's to the Hume Highway intersection) and provided information on the types of rock product produced at the quarry.
- The Applicant constructed Ambrose Road in 2012 and carried out local road upgrades in 2015 as a joint venture with Goulburn Mulwaree Council.
- The Applicant approached the Roads and Maritime Service (RMS) to lower the speed limit to 80km/hr.
- 10-15% of vehicles are Gunlake owned, 85-90% are contractor vehicles. Gunlake intend to increase its fleet to 70% Gunlake owned vehicles as part of an integrated quarry-transport operation.
- The Applicant identified rehabilitation areas and replanting on overburden walls, mainly from regrowth and reductions in feral animals. These (existing) rehabilitation areas may be subject to quarrying in future years.

**Outcomes/Agreed Actions:** The Applicant to provide the Commission with an approximate quantity of materials and/or quarry product that is transported to Sydney and quantity used locally.

**Meeting closed at 2pm**

## Notes of Briefing from the Council

<b>This meeting is part of the Determination process</b>		
<b>Meeting note taken by</b> Alana Jelfs	<b>Date:</b> 30 January 2017	<b>Time:</b> 3:30pm
<b>Project:</b> Gunlake Quarry Extension Project – D447/16		
<b>Meeting place:</b> Goulburn Mulwaree Council, Civic Centre, 184-194 Bourke Street, Goulburn, NSW 2580		
<b>Attendees:</b> Commission Members: Lynelle Briggs (Chair), Roger Fisher and Brian Gilligan Commission Secretariat: Alana Jelfs (Planning Officer) and Philippa Vale (Project Officer) Goulburn Mulwaree Council: Louise Wakefield (Director Growth Strategy & Culture)		
<b>The purpose of the meeting:</b> To discuss the Gunlake Quarry Extension Project with Goulburn Mulwaree Council (Council) and identify potential issues		
<b>Meeting notes:</b>  The following matters were discussed:  <u>Transport</u> <ul style="list-style-type: none"> <li>• Council referred to a lack of integrated transport planning to support the quarrying industry in the area.</li> <li>• The draft South East and Tablelands Regional Plan talks broadly about linkages and connectivity, and acknowledges the significance of the quarrying industry but does not discuss infrastructure targets.</li> <li>• The local community supports the quarrying industry generally, but has raised significant concerns with issues around road safety due to heavy vehicle haulage and driver behaviour.</li> <li>• Council encouraged the Applicant to consider an integrated transport solution, particularly the potential for sharing infrastructure with Holcim. Council are aware of a discussion between the parties, but agreement to share infrastructure was not reached.</li> <li>• The Council confirmed that Holcim and Boral, both located within the locality, use rail to transport quarry product to Sydney.</li> </ul> <u>Section 94 contributions</u> <ul style="list-style-type: none"> <li>• Council confirmed the Department's draft condition reflect the rate in its current s94 contributions plan.</li> </ul> <u>Final void / rehabilitation</u> <ul style="list-style-type: none"> <li>• Council request the opportunity to review and contribute to a Rehabilitation Plan for the site.</li> </ul> <u>Community engagement</u> <ul style="list-style-type: none"> <li>• Council has received feedback through the Community Consultative Committee (CCC) relating to dangerous truck driver behaviour. CCC have considered opportunities for making the local roads safer.</li> </ul>		
<b>Outcomes/Agreed Actions:</b> N/A		
<b>Meeting closed at</b> 4:30pm		

## Notes of Meeting with Holcim

<b>This meeting is part of the Determination process</b>		
<b>Meeting note taken by</b> Alana Jelfs	<b>Date:</b> 31 January 2017	<b>Time:</b> 12:30pm
<b>Project:</b> Gunlake Quarry Extension Project – D447/16		
<b>Meeting place:</b> Lynwood Quarry, Marulan NSW 2579		
<b>Attendees:</b> Commission Members: Lynelle Briggs (Chair), Roger Fisher and Brian Gilligan Commission Secretariat: Alana Jelfs (Planning Officer) and Philippa Vale (Project Officer) Holcim: Alana White (Environment and Community Liaison) and Gordon Rippon (Acting Quarry Manager)		
<b>The purpose of the meeting:</b> To assist the Commission in understanding the Marulan quarrying industry and road / rail connectivity in the region		
<b>Meeting notes:</b> <ul style="list-style-type: none"> <li>The Commission asked Holcim about the future of the quarrying industry in Marulan and what proportion of the Sydney market is held by Holcim. Holcim confirmed that Lynwood Quarry holds market share of Holcim's quarrying business. Holcim's Albion Park Quarry also supports the Sydney market.</li> <li>Holcim considers it likely other companies in the area could expand in the future.</li> <li>The quarrying industry relies heavily on infrastructure projects.</li> <li>Holcim built Lynwood as a long term investment (30 year approval and a 90 year resource).</li> <li>Holcim Lynwood confirmed that it produces a number of products include concrete aggregate, manufactured sand and rail ballast and moves mainly concrete aggregate into Sydney.</li> <li>Holcim confirmed that its Lynwood Quarry rail infrastructure is wholly owned by Holcim. It transports 70% of product volume by rail.</li> <li>Lynwood Quarry is currently producing at a rate less than their consent per annum. The material is transported partly by rail to its Rooty Hill Distribution Centre, which Holcim confirmed is the cheapest most efficient form of transporting its product.</li> <li>The bulk of the product is then trucked from its distribution centre to its batching plants throughout Sydney, including Manly and the Sutherland Shire.</li> <li>Some product is transported by road locally within the Southern Highlands.</li> <li>Holcim's crushers and conveyors are all enclosed on the Lynwood site.</li> <li>Holcim confirmed it works closely with community groups including the Towrang Valley Progress Group to address any issues that may arise as a result of quarry operations.</li> <li>Both Gunlake and Holcim have two separate Community Consultative Committees (CCC) – some membership may be similar.</li> <li>Holcim noted its positive relationship with the community which is helped by a full-time community liaison officer.</li> <li>Holcim has made significant investment in community programs and organisations, including local schools and colleges and invested in-kind funds to small community projects.</li> </ul> <p><b>Site visit:</b> Following the meeting, Holcim accompanied the Commissioners on a site visit of the Lynwood Quarry, and explained the local rock types, their method of quarrying and crushing, and noise and dust reduction methods, and next steps as they change quarrying rock types. They showed Commissioners their rail siding operations and connectivity to the national rail line.</p>		
<b>Outcomes/Agreed Actions:</b> N/A		<b>Meeting closed at</b> 1pm

**APPENDIX 2**  
**LIST OF SPEAKERS**

**Planning Assessment Commission**  
**Gunlake Quarry Extension Project – D447/16**

Date and Time: Tuesday 31 January 2017, 10am

Place: Marulan Hall, George Street, Marulan

**List of Speakers**

1. Michele Costello
2. Dennis Isbister
3. Heather Landow
4. Ken Wray
5. Maureen Cameron
6. Alan Burman
7. Geoff Pearson (Towrang Valley Progress Group)
8. Margaret Prill
9. Jean Morrison

**APPENDIX 3**  
**SUMMARY OF ISSUES PRESENTED AT THE PUBLIC MEETING**

<b>This meeting is part of the Determination process</b>		
<b>Meeting note taken by</b> Alana Jelfs	<b>Date:</b> 31 January 2017	<b>Time:</b> 10am
<b>Project:</b> Gunlake Quarry Extension Project		
<b>Meeting place:</b> Marulan Community Hall, George Street, Marulan, NSW 2579		
<b>Attendees:</b> Commission Members: Lynelle Briggs (Chair), Roger Fisher and Brian Gilligan Commission Secretariat: Alana Jelfs (Planning Officer) and Philippa Vale (Project Officer)		
<b>The purpose of the meeting:</b> Public meeting to hear community views on the project		
<b>Meeting notes:</b> Comments made during the public meeting and in written submissions are synthesised and summarised below. <u>Support for the quarrying industry</u> <ul style="list-style-type: none"> <li>• The local community does not oppose the quarrying industry or economic development, but requests a responsible approach to the quarry extension Project.</li> <li>• The community expressed interest in engaging with the Applicant to address matters of concern.</li> </ul> <u>Adequacy of assessments</u> <ul style="list-style-type: none"> <li>• The Applicant's assessments provide no detail of assumptions and, therefore, the community are not able to assess the validity of the Applicant's claims.</li> <li>• The community does not fully accept the Department's assessment report and noted the lack of independent testing of the Applicant's assessments.</li> <li>• Transport issues have not been adequately assessed.</li> <li>• An independent expert should be engaged to review the Applicant's assessments.</li> </ul> <u>Alternative transport options</u> <ul style="list-style-type: none"> <li>• Rail options have been made to look expensive.</li> <li>• It is not clear whether the alternative rail option is not viable or just not profitable for the Applicant.</li> <li>• Given the proximity of the quarry to the rail line, it appears to be a feasible option that has not been fully explored.</li> <li>• The quarry extension should not be approved if the Applicant cannot afford to invest in rail infrastructure.</li> </ul> <u>Road safety issues</u> <ul style="list-style-type: none"> <li>• Suggest the Commission visit the primary haulage route to observe the dangerous conditions.</li> <li>• Regular near misses and incidents of unsafe truck driver behaviour.</li> <li>• Visibility and line of sight is poor for cars turning at the Red Hills Road/Hume Highway intersection.</li> <li>• The primary transport route is also a school bus route, which stops along Brayton Road.</li> <li>• South Marulan fatality 2 years ago and fears of another if the speed limit is not reduced.</li> <li>• Trucks drivers do not adhere to the traffic management plan and convoy along the route.</li> <li>• Regular near-misses with laden trucks and particularly high risk road junction and entry points. The current road is not safe. It will be much worse with many more trucks using it.</li> <li>• Laden /un-laden vehicles often travel on the centre of the line marking at full speed.</li> <li>• Native animals are killed on the road, which residents are forced to clear away.</li> <li>• GPS is only fitted on Gunlake trucks. The company does not require contractor trucks to be fitted with GPS.</li> </ul>		

- Truck safety breaches witnessed frequently.
- Mitigation proposed to address road safety is inadequate.

#### Planning matters and conditions of consent

- The Project conflicts with the objects of the *Environmental Planning and Assessment Act 1979*.
- The Applicant's Statement of Commitments are general and vague.
- Concerns raised over ongoing monitoring and compliance if approval is obtained.

#### Impacts on road infrastructure

- Road damage costs are significant. Roads are not built to sustain the number of laden trucks currently using them. The Applicant should be required to upgrade.
- Vehicles are not adequately cleaned.
- The roads are subject to a large amount of spillage, causing further safety hazards.

#### Noise impacts

- There are serious deficiencies with the Applicant's technical noise report.
- Enclosing the primary crusher will not reduce noise to an acceptable level. Crushers can be heard early in the morning.
- Noise emissions are affecting my health.

#### Air quality

- Trucks produce about one fifth of the carbon dioxide that trucks produce. More trucks on the road will exacerbate air quality issues.
- Concerns raised over small dust particles and potential health impacts.
- A large cloud of dust often travels over my property, affecting my breathing and water.

#### Community consultation

- Community consultation/engagement has been inadequate.
- A public relations company has been hired to manage the Applicant's community engagement, but this hasn't helped community liaison and much more community consultation needs to be done.
- Holcim has a much superior engagement and response model that should be adopted here.

**Outcomes/Agreed Actions:** N/A

**Meeting closed at 11:10am**

## **APPENDIX 4**

### **APPLICANT'S STATEMENT OF COMMITMENTS**

#### **Noise and vibration**

##### Voluntary land acquisition and mitigation

- Voluntarily acquisition rights will be offered to receiver R2 in accordance with the VLAMP.
- Voluntarily mitigation rights will be offered to receiver R7 in accordance with the VLAMP.

##### Primary crusher noise attenuation

- The primary crusher will be enclosed as part of the extension project within four months of approval; and
- The primary crusher will not be operated at night until it is enclosed.

##### Overburden emplacement

- The overburden emplacement east of the infrastructure area will be extended to the north and south as shown in the general site layout.

##### Evening and night operation of mobile fleet

- The mobile fleet operations will be reduced during the evening and night periods, as represented in the noise model.

##### Noise and Blast Management Plan

- An updated Noise and Blast Management Plan will be submitted to DPE within six months of project approval.

#### **Air quality**

##### Air quality monitoring

- The existing air quality monitoring network will continue under the extension project. Monitoring results will be reviewed on an annual basis against the EPL and approval conditions to determine if additional monitoring is required due to production increases.

##### Air quality management

- The following additional management measures will be implemented to enable Gunlake to continue to manage potential air quality impacts effectively:
  - compliance with the USA-EPA Tier 3 or Tier 4 emissions standards, where practicable, for any new plant acquired by Gunlake; and
  - consideration of the following factors during blast design:
    - delaying blasting to avoid unfavourable weather conditions that are likely to cause or spread a blast fume;
    - selecting an explosive product that is correct for the conditions;
    - monitoring the amount of hydrocarbon (diesel) in the product;
    - preventing water ingress into blast holes;
    - dewatering holes before loading;
    - keeping sleep time (the amount of time between charging and firing of a blast) to a minimum, well within manufacturer recommended times;
    - providing effective stemming; and
    - loading the product using the appropriate techniques.

#### **Biodiversity**

##### Rehabilitation and Biodiversity Offsets Management Plan [previously the Landscape Management Plan]

- The Rehabilitation and Biodiversity Offsets Management Plan (RBOMP) will be updated to include details on biodiversity management and rehabilitation for the extension project. The plan will be completed and implemented within 12 months of project approval.
- The RBOMP will include procedures to be applied for the management of the offset properties, the arrangements for conservation in perpetuity and regeneration works to be

undertaken. This will include the procedures for:

- assisting the revegetation and regeneration in the offset areas, including establishment of canopy, understorey and groundcover in areas of native pasture where required;
- controlling weeds and feral pests;
- fencing and access arrangements;
- erosion control; and
- bushfire management.
- An offset monitoring program will also be included within the RBOMP to monitor any changes to the condition of the offset areas.

#### Offsets

- An offset package of 155.6 ha incorporating the offset requirements of the original approval, as modified, and the extension project to compensate for the extension project impacts.
- Offset areas will be secured where possible using a BioBanking agreement. Where this cannot be achieved, a suitable mechanism will be identified that follows the Policy's criteria.
- The offset areas will be managed in accordance with the RBOMP.

#### **Traffic and transport**

##### Hume Highway intersection acceleration lane

- At the intersection of Hume Highway and Red Hills Road, an additional 500 m long (including taper) left turn northbound acceleration lane will be constructed in accordance with the relevant Austroads (2013) intersection design requirements as soon as RMS approval is obtained.

##### Corrective actions recommended in the road safety audit

As part of the extension project, Gunlake will:

- Fit and monitor GPS technology to Gunlake owned trucks.
- Work with the Council to install centre double white lines along the appropriate sections of the primary haul route.
- Work with the Council to install edge lines along the appropriate sections of the primary haul route.
- Work with the Council to commission survey, risk assessment and costing.
- Work with the Council to determine appropriate guide post spacing based on an analysis of the frequency of heavy fogs.
- Work with the Council on submission to RMS to reduce the speed limit along the primary transport route to 80 km/h.

##### Road upgrades

As part of the extension project, Gunlake will:

- Upgrade the intersection of the quarry access road with Brayton Road:
  - asphalt the intersection; and
  - construct an acceleration lane on Brayton Road south of the quarry intersection.
- Widen both shoulders on Bypass Road (Ambrose Rd) for 400 m on the approach to Brayton Road.
- Improve the Red Hills Road and Hume Highway intersection:
  - provide physical separation between the lanes on either side of the road; and
  - construct an acceleration lane on the Hume Highway as soon as Roads and Maritime Services (RMS) approval is received (rather than in 2025 as proposed in the EIS).
- make general improvements along the transport route such as better line marking and increased signage:
  - marking hidden driveways;
  - regarding school buses; and
  - prohibiting the use of air brakes by in-bound trucks.

- Work with Goulburn Mulwaree Council (Council) to submit an application to RMS to reduce the speed limit on the transport route to 80 km/h.
- Reduce the proposed maximum number of daily truck movements as part of the extension project from 690 to 590 per day.
- Conduct random inspections on the transport route to ensure compliance with the Drivers Code of Conduct.
- Work with Council to identify hazards in the clear zone for 80 km/h travel, including a risk assessment and costing to correct or reduce the risk.
- Work with Council to determine appropriate guide post spacing based on an analysis of the frequency of heavy fogs.

#### Traffic management plan

- The existing traffic management plan will be updated following project approval.

#### The Drivers Code of Conduct

- The Drivers Code of Conduct will be updated to incorporate anti-littering practices.
- Conduct random checks along the primary and secondary transport routes to ensure compliance with the Truck Driver Code of Conduct.
- Truck drivers will be educated regarding the acceptable use of air brakes on local roads.

#### Development contributions

- Gunlake will continue to meet its obligations under Section 94 development contributions to Goulburn Mulwaree Council for the life of the project.

### **Groundwater**

#### Water management plan

- The Water Management (WMP) Plan will be updated to provide details of the surface water management system, surface water management and monitoring for the extended quarry and will be submitted to DPE within six months of project approval.
- The Gunlake water management plan will be updated to include:
  - triggers values to facilitate the identification of groundwater impacts outside of predictions;
  - the use of monitoring data to calibrate and update the model at significant project stages;
  - quarterly groundwater quality and level monitoring to facilitate the early identification of adverse impacts and test model predictions;
  - monitoring of spring flow in conjunction with the quarterly groundwater level and quality program;
  - monitoring mapped areas of Box Gum Woodland;
  - procedures for the re-use of site water; and
  - response protocols and contingency mitigation measures to be implemented in the event of an unpredicted adverse impact.

#### Groundwater licensing

- Gunlake Quarry will obtain a WAL(s) for the predicted groundwater take over the lifespan of extension project (up to 37 ML/year).
- Groundwater monitoring bores will be registered under the Water Act.

### **Surface water**

#### Surface water licensing

- Gunlake will seek any required water licences should water need to be imported during extended dry periods.

#### Surface water monitoring

- The current surface water monitoring program will be modified to include monitoring at:
  - two receiving water sites on Chapmans Creek, downstream of the quarry; and

- the Process Water Dam and Pit Dewatering Dam.
- Should the monitoring program indicate that the quarry is potentially adversely affecting water quality in Chapmans Creek, Gunlake will undertake an investigation to establish the likely cause and will implement necessary mitigation measures.
- The updated Soil and Water Management Plan will include the site water balance and measures to manage water excesses and deficits.

## **Aboriginal heritage**

### Aboriginal Heritage Management Plan

- An updated Aboriginal Heritage Management Plan, prepared in consultation with OEH and Registered Aboriginal Parties, will be submitted to DPE within six months of project approval.
- The Gunlake Quarry Aboriginal Heritage Management Plan (AHMP) will be updated and provide details of:
  - all Aboriginal sites identified for the project and those previously recorded in the broader project site boundary;
  - management measures and their progress towards completion;
  - continuing consultation and involvement of registered Aboriginal parties;
  - protocols for newly identified sites;
  - protocols for suspected human skeletal material; and
  - provisions for review and updates of the AHMP.

### Aboriginal sites

- All Aboriginal sites in the project disturbance footprint will be collected by a qualified archaeologist and members of the RAPs and relocated to the same area as previously collected artefacts at the site.
- If new Aboriginal sites are discovered outside of known site areas, all work will halt and an archaeologist and members of the RAPs be contacted to determine the significance of the objects. Objects will be managed based on their sensitivity in a manner consistent with the management measures outlined above, including appropriate forms of salvage for the items.
- In the event that known or suspected human skeletal remains are encountered during the activity, the procedures detailed in Appendix M will be followed.

### Avoiding Aboriginal sites

- The Aboriginal sites, GL4, GL12, GL13 and GL15, will be fenced and avoided by the project.

## **Social**

### Local employment, training and engagement

- Gunlake will ensure that preference is given to local employees. Gunlake will use local or regional contractors and suppliers where this presents a cost effective and feasible option.
- Gunlake will provide ongoing training and certification opportunities for local community members to ensure they have the necessary skills to work in extractive industries.
- Gunlake will continue to actively engage with the local community and affected individuals and groups and address any complaints and feedback on quarry operations.

## **Soils and rehabilitation**

### Rehabilitation scheduling

- Rehabilitation will be progressively staged as soon as possible after final completion of works is determined. Staging of rehabilitation activities will require identification of timelines for decommissioning of pits, buildings and other supporting infrastructure. A more detailed schedule of works will be developed 12 to 24 months prior to the confirmed closure.

### Erosion and sediment control

- ESC measures will be defined in an Erosion and Sediment Control Plan to be implemented throughout the life of the project.

### Weeds

- Gunlake will take the necessary precautions to prevent excessive development of weeds within rehabilitated areas.

### Rehabilitation monitoring

- Gunlake will undertake an ongoing monitoring program throughout and beyond the operation of the project. Areas being rehabilitated will regularly be inspected and assessed against the short and long-term rehabilitation objectives outlined in EIS Section 6.4.1.
- It is envisaged that rehabilitation monitoring will be undertaken for at least 2 years following the completion of all rehabilitation. The exact period would reflect seasonal conditions during that period. In any event, maintenance will continue until such time as the objectives have been achieved. The monitoring criteria will be reviewed and finalised with Goulburn Mulwaree Council at the time of submitting a final rehabilitation plan.

### **Visual**

#### Visual amenity

- Gunlake will continue to consult with surrounding landowners regarding the visual amenity of the quarry and will implement any reasonable additional controls to further reduce their visual impact, if necessary.

### **Historic heritage**

#### Unexpected finds

- Gunlake will include an unexpected finds protocol in relation to historic heritage as part of the EMS for the quarry.