GLENELLA

QUARRY PTY LIMITED

ABN: 75 117 019 155

Preliminary Environmental Assessment

Bogo Quarry, via Bookham

Prepared by:

R.W. CORKERY & CO. PTY. LIMITED

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1.0 INTRODUCTION

This *Preliminary Environmental Assessment* has been prepared by R.W. Corkery & Co. Pty Ltd to support an application by Glenella Quarry Pty Ltd (hereafter referred to as "the Proponent") for Project Approval from the Minister for Planning to increase the annual production level of hard rock products and the placement and operation of a mobile asphalt plant and a mobile concrete batching plant on a campaign basis at Bogo Quarry, via Paynes Road, Bookham ("the Project").

This *Preliminary Environmental Assessment* introduces the Project, identifies key environmental issues and provides preliminary information on mitigation measures and management controls "the Proponent" would continue to adopt to avoid or reduce potential impacts on the Project Site and within the surrounding environment. The residual impact(s) are described and proposed monitoring outlined to assess the ongoing environmental performance of the Project. The *Preliminary Environmental Assessment* has been prepared in accordance with the provisions of Part 3A, Section 75 of the *Environmental Planning and Assessment Act 1979*.

The Project is classified as a Major Project in accordance with the criteria in *clause 7(1) (a) of Schedule 1 of State Environmental Planning Policy (SEPP) (Major Projects) (2005).* The application is made possible by virtue of the fact that extractive industries and the use of an asphalt plant and concrete batching plant are permissible land uses on the Project Site in accordance with the prevailing Yass Valley Shire Council *Local Environmental Plan 1987*.

This document focuses upon the proposed modification to on-site activities and the product transportation activities that would arise if project approval is granted. However, sufficient information will be provided on the entire operation in an *Environmental Assessment* to enable the Minister for Planning, to issue a project approval for the entire quarry incorporating both the existing and proposed activities, ie. the consent for the existing quarry would be surrendered following the receipt of an acceptable project approval.

Bogo Quarry is located on the "Bogo" property owned by G.T Walker, M.T Walker, P.T. Walker, R.T. Walker and M.F.A. Elsegood situated approximately 800m east of the junction of the Hume Highway and Tourist Road 4033 to Burrinjuck Dam. The quarry is located 7.5km east from the village of Bookham and 28km west from Yass.

For the purposes of the document the "Project Site" comprises the area of land that is leased from the property owners. **Figure 1.1** shows the extent of the lease and the existing quarry operations. The existing quarry and its operations are briefly outlined in Section 1.5.

In accordance with correspondence from the Department of Planning dated 2 June 2008, this *Preliminary Environmental Assessment* addresses the following issues.

- Background on the existing operations and the Project Site.
- An outline of the project.
- Details of the permissibility and relevant statutory controls.
- An overview of the local area/land uses surrounding the Project Site.

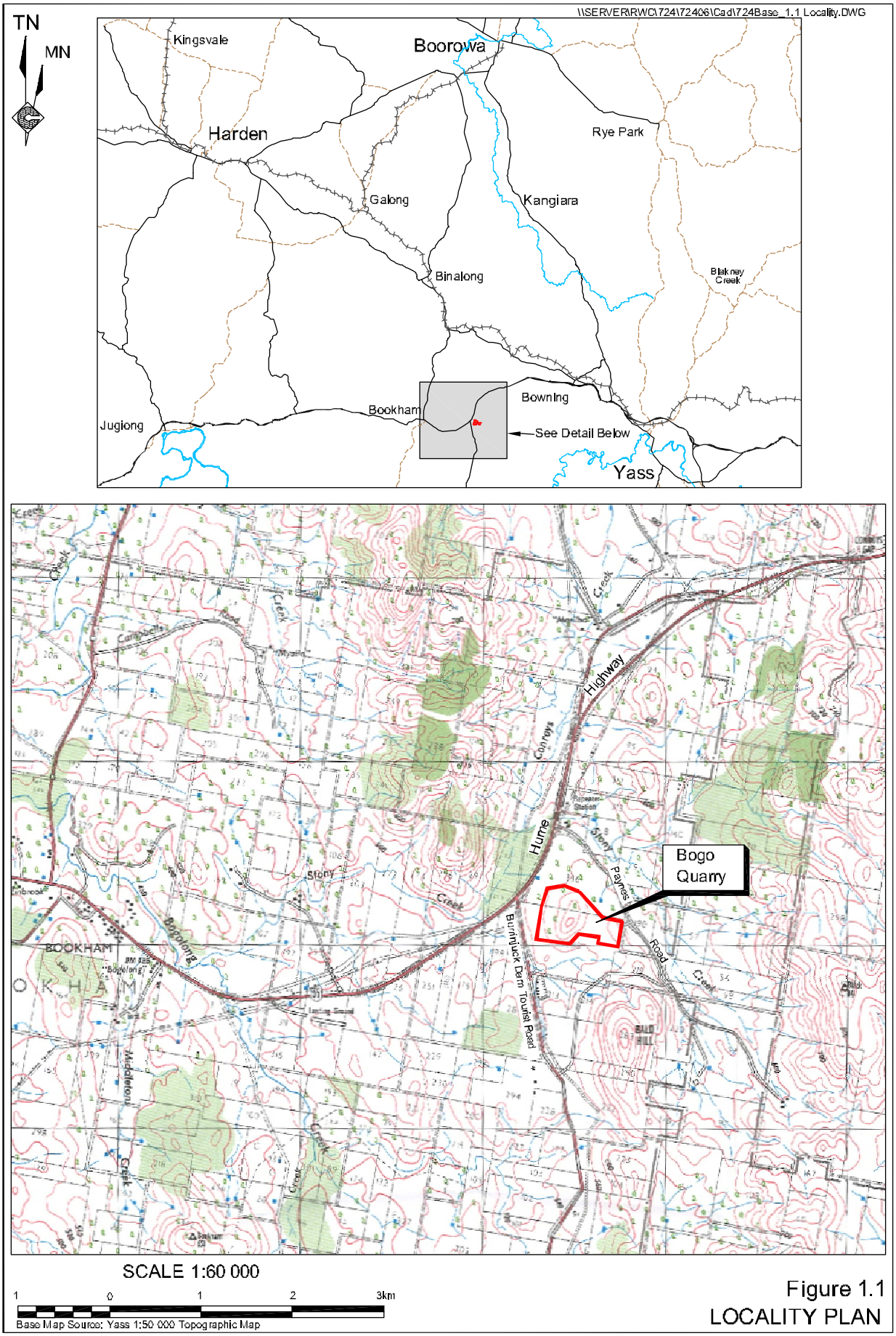


Figure 1.1
LOCALITY PLAN

- An overview of the environmental issues (including identification and consideration of the key issues).
- The outcome from preliminary consultation.

The Project, if approved, would ensure a continued supply of hard rock products, asphalt and pre-mixed concrete to the building and construction industries throughout Yass Shire and surrounds.

1.1 THE PROPONENT AND THE PROJECT SITE

1.1.1 The Proponent

The Proponent is Glenella Quarry Pty Ltd ("Glenella"). "Glenella" was formed in late 2005 to manage the operations of the Glenella Quarry located approximately 26km southeast of Cowra. Since that time, "Glenella" has continued to expand its portfolio of extractive industry properties with the acquisition of the Bogo Quarry in March 2007. "Glenella" became the operator of the Bogo Quarry by way of a long-term lease arrangement with the property owners. "Glenella" currently employs a total of 10 full-time people across the two operations located in Central NSW. The Company's directors are Mr Michael Scott Howe and Mrs Amy Vidmar Howe.

Bogo Quarry contains a diverse resource, providing high quality products for the building and construction industries. Since "Glenella" purchased the leasing rights to Bogo Quarry in December 2005, the Company has focused on operating the quarry in an environmentally and socially responsible manner whilst refining on-site operations and establishing additional markets for the quarry's products. An opportunity also recently arose for the Proponent to assist in various local/regional infrastructure projects by placing and operating a mobile asphalt plant within the quarry.

"Glenella" is committed to continue the development and operation of Bogo Quarry in a manner that achieves environmentally responsible outcomes. The Proponent recognises that the recovery, processing, loading and transportation of the products produced at "Bogo Quarry" should not be achieved at the detriment of the local community and the environment. Rather, the Proponent intends to continue as a responsible corporate citizen supporting Yass district communities.

1.1.2 The Project Site

Throughout this document, the Project Site refers to the area of land within Lot 2 DP 849362, off Paynes Road, Bookham which is subject to Development Consent 96/067B. **Figure 1.2** displays the boundary of the Project Site, which covers a total of 39ha.

Figure 1.2
EXISTING QUARRY LAYOUT

1.2 BACKGROUND TO THE PROPOSAL

1.2.1 Bogo Quarry Operations

A development application was lodged on 6 January 1981 with Yass Valley Council for obtaining gravel for construction and maintenance of the Hume Highway by the, then, Department of Main Roads. Development consent was granted by Council in February 1981 and a lease negotiated by Department of Main Roads with the then landowner, Bogo Pty Ltd to operate the quarry for a period of 10 years. It is also understood, although records are sketchy, that an asphalt plant was operational on site during this period.

Following the expiry of the lease, the quarry was operated by Stafford Quarries Pty Ltd from 1991 to mid 1992. From mid 1992 to early 2007, the quarry was managed and operated by T.J and R.F Fordham Pty Ltd. In 1995, an *Environmental Impact Statement*, prepared by David Hogg Pty Ltd (Hogg, 1995), was lodged with Council to extend the approved extraction area.

Development Consent DA 96/067A for the extended quarry was granted by the NSW Land and Environment Court on 3 July 1996. On 20 March 1999, Council issued an amendment to Development Consent DA 96/067B allowing a few minor modifications to the quarry and its operations.

The Proponent recently obtained development consent from Yass Valley Council to assist in the re-sealing of a section of the Hume Highway near Bogo Quarry principally by providing the RTA-appointed contractor, Downer EDI Works Pty Ltd, with the opportunity to place and operate a mobile asphalt plant within the Bogo Quarry for a period of up to 2 to 6 months.

1.3 RESOURCES AND PRODUCTS

The resource within Bogo Quarry occurs within the Mountain Creek Volcanics of the Early Devonian Black Range Group, which extends in a belt trending generally north to west from south of Burrinjuck Dam to northwest of Galong (Hogg, 1995). Up to five main rock types occur within the area in an east dipping (60^{o} to 70^{o} to the east) sequence of dacitic to rhyolitic ignimbrites (Resource Planning, 1989). The active quarry area is located within the dacitic ignimbrite which was considered by Resource Planning (1989) as the best quality rock within the quarry area. Bogo Quarry is noted in McRae (1993) as a regionally important quarry.

Resource estimates provided within the *Environmental Impact Statement* prepared by Hogg (1995) for the operation of the existing quarry indicate that the total resource at the quarry, excluding topsoil and other non-commercial material, as of 1995 was in the order of 3.2 million cubic metres or approximately 5.7 million tonnes.

Based on recorded quantities of material removed since 1995 (approximately 1.8 million tonnes), the estimated remaining resource within the approved extraction area is 3.9 million tonnes.

The Proponent proposes to maintain the existing range of products produced from the quarry, however, the proportion of products produced may vary in accordance with market demands. The products from the quarry are recognised to be high quality construction aggregates for use in concrete, drainage, road construction and road sealing (pre-coat and asphalt) applications. Products produced at the quarry include various size concrete aggregate, asphalt and cover aggregates, prepared road bases and pre-coat aggregates. More specifically, typical products produced include the following.

- 20mm roadbase: used as road construction material.
- >26mm non-specification roadbase: used in the construction of roads, specifically as subgrade roadbase material, also for drainage and erosion control, ballast, mattress and gabion.
- 5mm, 7mm, 10mm, 14mm and 20mm aggregates: used in the manufacture of concrete and asphalt.
- <5mm quarry fines: used for blending to produce sand and soil landscaping products.
- Stabilised roadbases: consisting of 20mm roadbase material with the addition of a chemical additive to increase the strength of the product.
- Pre-coated 7mm, 10mm and 14mm aggregates: used in RTA / Council road sealing programs (for spray seal applications).
- hard rock further treated by coating with bitumous emulsion: used for Hotmix or asphalt applications.

The remainder of the extracted material is considered to be "overburden' which will be used in the rehabilitation of the quarry site, however, some of this material may be sold as select fill.

1.4 THE EXISTING OPERATIONS

1.4.1 Introduction

The existing layout within the Project Site is shown in **Figure 1.2**. The Project Site encompasses the total area utilised for the existing quarry operations and includes the following.

- An extraction area covering 8ha.
- A crushing and screening plant and surrounding stockpiling areas.
- On-site facilities including the quarry office, weighbridge and amenities.
- Operational areas including the site workshop, hydrocarbon storage area, pre-coat production and pre-coat material stockpiling areas.

1.4.2 Approvals and Licence

Bogo Quarry operates with a Development Consent (DA 96/067B) issued by Yass Valley Shire Council and an Environment Protection Licence (EPL No. 4219) issued by the DECC. The development consent is valid until 2019 whereas the EPL 4219 is reviewed annually, subject to satisfactory performance.

1.4.3 Existing Extraction Operations

The principal design parameters of the existing extraction area are as follows.

Face Heights:	10 to 15m
Bench Widths (operational):	15m to 30m
Face Angle:	15 degrees from vertical
Haul Road Grade:	Variable but typically >1:10 (V:H)

The extraction area is operated with three faces at three levels (ie. the quarry floor and two benches). **Figure 1.3** shows the approved limit of extraction and typical cross sections through the extraction area.

Extraction operations involve the intermittent removal of topsoil and overburden prior to the extraction of the underlying hard rock resource. Topsoil and overburden is removed using an excavator and is used to form bunding between the western edge of the approved extraction area and the nearby Hume Highway. The extraction of the hard rock resource is then undertaken by licenced contractors using drill and blast method.

The blasted “raw feed” is either collected from the floor of the extraction area using a front-end loader or is re-located from one of the two operational benches to enable access by the front-end loader. When required, a dump truck re-locates the raw material from higher benches to the processing plant or to surge stockpiles.

1.4.4 Processing and Stockpiling Operations

Figure 1.4 illustrates the crushing and screening processes that are operational at Bogo Quarry. The front-end loader loads the broken (“raw”) rock into a hopper which passes through the primary and secondary crushers. The crushed material is sorted over a series of screens prior to the tertiary processing using a vertical shaft impact crusher. The crushed material passes over a series of screens which separates the crushed rock into the following product sizes.

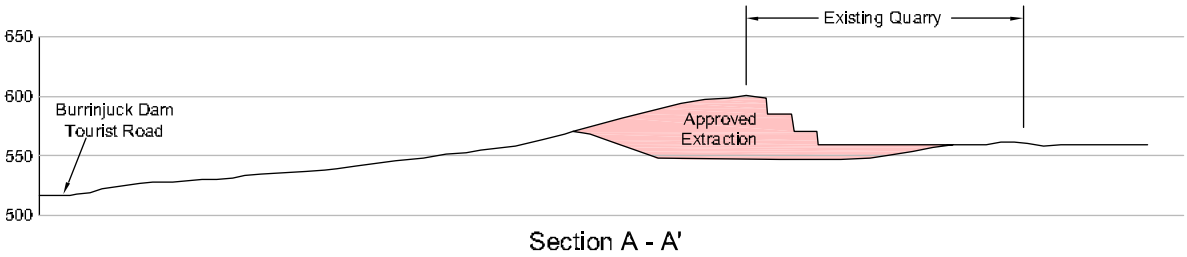
- 20mm and 14mm.
- 10mm and 7mm.
- quarry fines (<5mm).

REFERENCE
Project Site Boundary
Limit of Approved Extraction
Cadastral Boundary

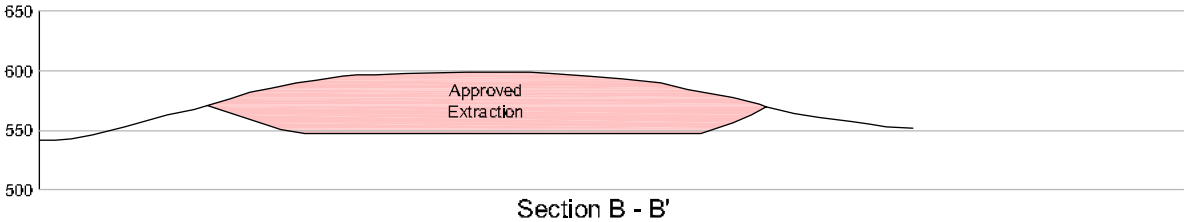
SCALE 1:8 000

100 0 100 200 300 400 m

Base Photo Source: Google Earth (2008)

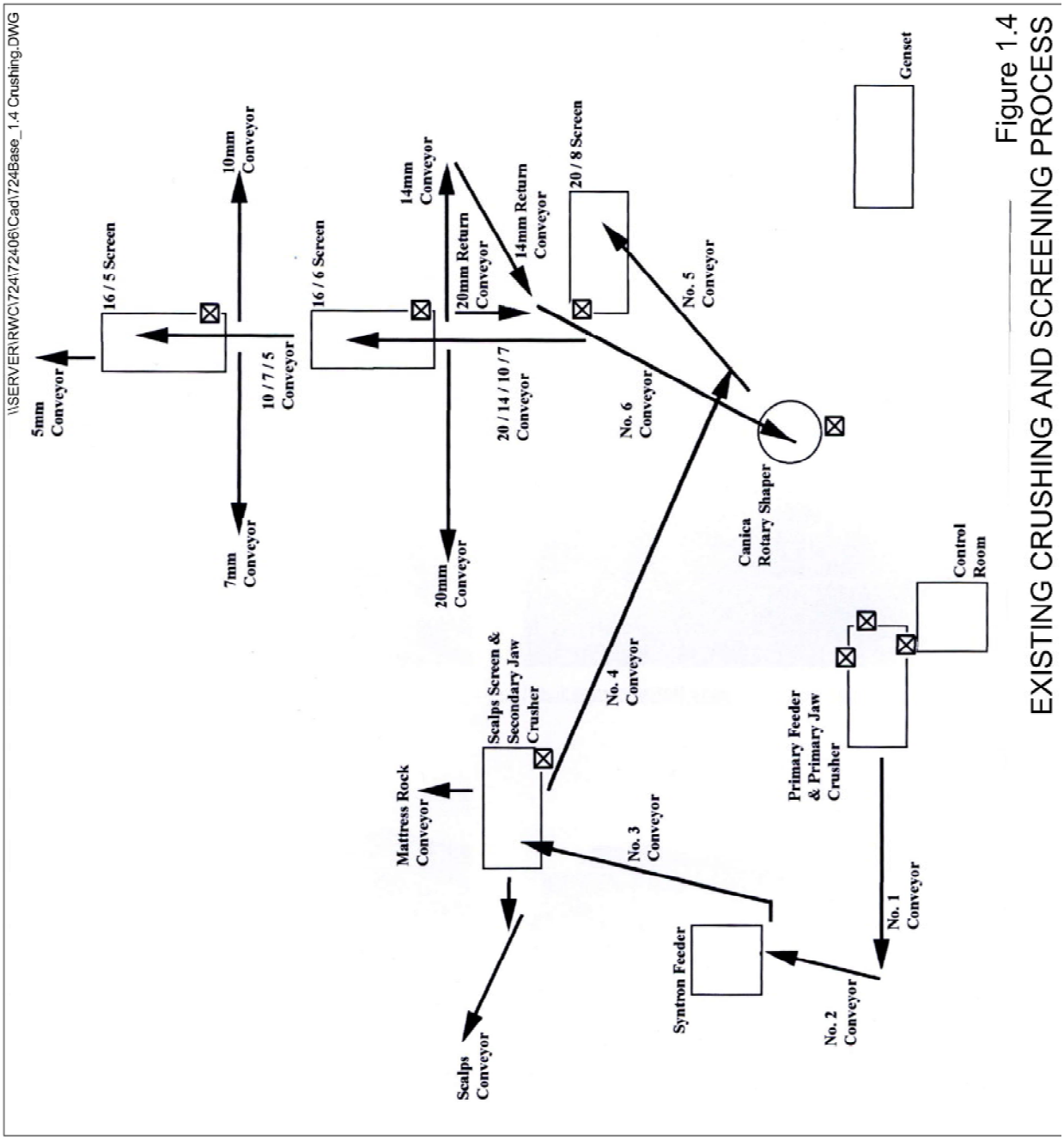


Section A - A'



Section B - B'

Figure 1.3
APPROVED EXTRACTION LIMIT
AND CROSS SECTIONS


\\SERVER\RWC\724\724006\Cad\724Base_1.4 Crushing.DWG
5mm Conveyor
16 / 5 Screen
10mm Conveyor
10 / 7 / 5 Conveyor
7mm Conveyor
16 / 6 Screen
14mm Conveyor
20mm Return Conveyor
14mm Return Conveyor
20 / 8 Screen
No. 5 Conveyor
20 / 14 / 10 / 7 Conveyor
No. 6 Conveyor
20mm Conveyor
Canica Rotary Shaper
Genset
Control Room
Scalps Screen & Secondary Jaw Crusher
No. 4 Conveyor
Primary Feeder & Primary Jaw Crusher
Mattress Rock Conveyor
No. 3 Conveyor
No. 1 Conveyor
Syntron Feeder
No. 2 Conveyor
Scalps Conveyor
Figure 1.4
EXISTING CRUSHING AND SCREENING PROCESS

In addition to the crushing and screening plant, a pre-coat plant is periodically used to produce pre-coated sealing aggregates suitable for road sealing programs. Aggregates that are pre-coated are typically 7mm to 14mm in size and are loaded to a hopper regulating the feed to the pre-coat plant where the pre-coat mix (bitumen/oil mixture) is added.

1.4.5 Asphalt Production

Bogo Quarry has been used periodically for the production of asphalt. The most recent campaign involved the production of almost 20 000 tonnes of asphalt for the resealing of a 4km section of the Hume Highway north of the quarry. The asphalt production involved the use of aggregates produced at the quarry mixed with imported bitumen to produce hot-mix asphalt.

1.4.6 Stockpiling

The sized and blended products are transported from the product stockpiles beneath the processing plant discharge conveyors using either front-end loaders and/or dump truck and stockpiled within the designated stockpile areas on site prior to despatch to customers.

1.4.7 Product Transportation

All products are transported from the quarry using road-registered trucks via a short section of internal access road, north along an approximately 1.4km section of Paynes Road to the Hume Highway. Paynes Road is a no-through road that experiences a low level of local traffic not associated with the quarry. Product trucks consist of both private and sub-contracted vehicles of both rigid and articulated configurations including truck and dog trailers resulting in an average load capacity of approximately 32t.

1.5 CONSULTATION

1.5.1 Government Consultation

During the preparation of the *Preliminary Environmental Assessment*, the Department of Planning, Department of Environment and Climate Change, Roads and Traffic Authority and Yass Valley Council were formally approached for their requirements for the preparation of the *Environmental Assessment*.

1.5.2 Community Consultation

The Proponent has discussed the project with all adjoining neighbours. The residents have not raised any concerns about the current activities and are supportive in principle of the Project. Further discussions are planned with the neighbours prior to the formal lodgement of the *Environmental Assessment* for exhibition. The Proponent is committed to maintain a clear consultation process with the surrounding residents and address any of their concerns, should any arise.

1.6 MANAGEMENT OF INVESTIGATIONS

The preparation of this document has been managed by Mr Rob Corkery, M.Appl.Sc., B.Appl.Sc (Hons), Principal of R.W. Corkery & Co Pty. Ltd, assisted by Mr Tony Gilson, B. Env.Sc. of the same company.

On behalf of "Glenella", Mr Michael Howe provided technical information on the Project and undertook community consultation with surrounding land owners.

The traffic assessment is being undertaken by Mr Terry Lawrence of Transport and Urban Planning.

2.0 INTRODUCTION AND OBJECTIVES

The Proponent is seeking project approval to increase production levels of hard rock products from the Bogo Quarry and to place and operate a mobile asphalt plant and mobile concrete batching plant on a campaign basis within the Project Site ("the Project").

Under the existing Development Consent (DA 96/067B), the maximum approved allowable production at the quarry is limited to 200 000tpa. Due to expanding market opportunities, the Proponent is seeking to increase the maximum approved production to 380 000tpa.

Glenella's principal objectives in proposing the increase in hard rock production and the placement and operation of an asphalt plant and a concrete batching plant centre upon the following.

- Ensuring the efficient and economically viable extraction and processing of hard rock products to meet the increasing demand for a range of high quality products to the road construction and maintenance, construction and pre-mixed concrete industries in the Yass district.
- To undertake the activities associated with hard rock extraction, processing, blending, transportation and rehabilitation operations in a manner that avoids or minimises the impact(s) of these activities upon the environment within and surrounding the Project Site.
- To operate the mobile plants efficiently ensuring that the blending and transportation of pre-mixed concrete and asphalt is undertaken with minimal impact to the surrounding environment and community.
- To undertake progressive rehabilitation of the Project Site that creates a final landform which is of value in the ongoing grazing activities on the "Bogo" property.
- To continue as a responsible corporate citizen supporting Yass district communities.

2.1 PROJECT OVERVIEW AND APPROVALS REQUIRED

Increased production levels would be achieved through the optimisation of the existing operations including more efficient use of the existing crushing and screening plant and equipment employed in the extraction and processing operations. The increased transportation of quarry products would be achieved through the engagement of additional Company employed and sub-contracted product truck drivers. No alterations to the existing quarry layout extraction area or the approved hours of operation are proposed.

Figure 1.2 shows the Project Site layout of the existing operations and Section 1.5 has previously described the existing operations on the Project Site. The Proponent intends to place the mobile plants within the defined mobile plant pad on the eastern side of the Project Site and to use the plants on a campaign basis. It is not envisaged that the mobile asphalt and concrete batching plants would be operated simultaneously.

In order to increase production of hard rock products at the Bogo Quarry, the Proponent will require a project approval issued by the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1997.*

The existing Environment Protection Licence (No. 4219) will not require modification as the proposed upper production level of 380 000tpa lies within the existing approved annual production range of 500 000t.

The Proponent will not require the licence to cover the proposed asphalt production as the plants to be used will each have their own Environment Protection Licence given their mobile status.

The proposed maximum animal concrete production of 8 000m^3 lies below the threshold level for licencing under the *Protection of the Environment Operations Act 1997*.

The minor roadwork required at the intersection of Paynes Road and the Hume highway will require a Permit to be issued by the RTA in accordance with Section 138 of the *Roads Act 1993*.

2.2 PROPOSED EXTRACTION OPERATIONS

2.2.1 Extraction Area and Layout

The layout of the extraction area and approved limit and depth of extraction would not vary from that referred to in the Development Consent 96/067B and as shown on **Figure 1.3**.

2.2.2 Extraction and Blasting Practices

Extraction operations at the quarry would involve continuing existing methods employed at the quarry for the progressive removal of topsoil and overburden prior to the extraction of the underlying hard rock resource. Topsoil and overburden would continue to be used to form bunding between the edge of the approved extraction area and the Hume Highway, used for rehabilitation or sold.

The extraction of the hard rock resource would continue to be undertaken using drill and blast methods. Blasts typically occur in the order of 12 times per year with each blast yielding approximately 20 000t to 60 000t, depending upon the location within the quarry. All blasting would continue to be undertaken by licenced contractors in accordance with relevant Australian standards.

2.2.3 Extraction Equipment

The extraction and re-location of blasted raw material from the working benches to a lower bench or to the quarry floor is undertaken utilising a 20-36T excavator. The increase in extraction would require the use of an additional front-end loader to assist in improving the efficiency of processing, stockpiling and loading of the product. Other specialist plant and/or equipment that are used from time to time during quarry operations would continue to be contracted, as required.

2.3 PROCESSING AND STOCKPILING OPERATIONS

2.3.1 Processing Plant Operation

The processing of 380 000tpa would be achieved through the utilisation of existing processing plant equipment more efficiently and would not require an increase in the size of the processing plant or additional processing plant. It is noted that maximum production may not be reached each year but would provide flexibility to meet expanding markets.

A stand-alone pre-coating plant is also located adjacent to the quarry entrance road to facilitate the manufacture of pre-coated sealing aggregates for RTA/Council road sealing programs. No alterations to the pre-coating plant or operation would be required.

2.3.2 Processing Rates

The current average processing plant throughput is between approximately 110t/hr to 160t/hr depending on the type of products being produced. Increases in average processing rates would be achieved through the additional efficiency utilisation of the existing plant and the increase in labour.

2.3.3 Product Stockpiling

The sized, blended and pre-coated products would be transported from the processing plant using existing front-end loaders and the dump truck and stockpiled within the various stockpile areas on site prior to despatch to customers. **Figure 1.2** shows the location of existing stockpiling areas on site. There is sufficient capacity within the existing stockpile areas to accommodate the proposed increase in production.

It is noted that the proposed increase in production would be a response to market demand and therefore sales would minimise the need to stockpile excess product.

2.4 PROPOSED MOBILE ASPHALT AND CONCRETE PLANTS

2.4.1 Introduction

The Proponent intends to place and operate a mobile asphalt plant and a mobile concrete plant and associated equipment on the site principally on a campaign basis in conjunction with local / regional infrastructure / construction projects.

Figure 1.2 shows the location of the mobile plant pad for both plants on the eastern side of the Project Site adjacent to the secondary product stockpile area. This area is periodically used for stockpiling and is connected to the existing drainage and sediment control network. The recent asphalt manufacturing program was conducted within the mobile plant pad.

2.4.2 Site Establishment

The mobile asphalt plant and mobile concrete plant would be placed within an existing pad and operating areas located on the Project Site, therefore, no clearing of vegetation would be required. The mobile plant(s) would utilise the existing drainage and sediment control infrastructure.

It is envisaged that it would take up to one week to erect the respective plants to operational status. The Proponent intends to utilise the same area for both plants.

2.4.3 Asphalt Plant

The principal components of the mobile asphalt plant would be cold feed aggregate bins, a cold feed conveyor, a diesel burner, a drum drier/mixer, a wet scrubber and water eliminator, an exhaust stack, a flyash silo, a bitumen storage tank, an output conveyor and a hot asphalt storage bin. All equipment, including heated storage units, would be powered, using the existing diesel powered generators. The current mobile equipment (ie. front-end loader) used on site would be utilised to operate the plant.

Aggregates would be fed via individual weight feeders from the cold feed aggregate bins onto a cold feed conveyor. The cold aggregates would be conveyed into the drum drier/mixer, heated to by a burner, where they are dried and mixed. Bitumen would be added to the hot aggregates at the end of the mixing process to produce hot-mix asphalt. The hot-mix asphalt would then be conveyed into the overhead storage bin and discharged into highway trucks by bottom discharge.

In the future, the plant may be used for recycling old asphalt removed from roads throughout Yass Valley and surrounding local government areas.

2.4.4 Concrete Plant

The components of the mobile concrete batching plant would be a series of on-ground aggregate storage bays, overhead storage silos for cement and flyash, dust filter extraction unit, weighing hoppers, transfer conveyors, a batch hut, a slump stand, truck washout bay, a bunded additive/chemical storage area and a waste concrete bunker.

The manufacture of pre-mixed concrete on the Project Site using raw materials and additives would involve:

1. sequential retrieval of coarse and fine aggregates from the aggregate storage bays by front-end loader to transfer the materials to the aggregate hopper;
2. automatic weighing the required amount of cement and flyash in the weigh hopper;
3. automatic weighing of aggregate and sand in the aggregate weigh hopper;
4. addition of a measured amount of water and any required additives into the transit agitator;
5. simultaneous feeding of cement and coarse and fine aggregates into the mixer's agitator;
6. washdown of the transit mixer to remove any cement dust or spilt aggregates; and
7. mixing for a minimum of 3 minutes prior to despatch from the site.

Water required for Step 4 above would be sourced from on-site water sources.

2.4.5 Production Rates

The asphalt plant and the concrete plant would be operated on a campaign basis to meet the needs of customers in the Yass Valley Shire. Campaigns could typically last between 2 and 6 months. The asphalt plant would have the capacity to produce up to approximately 1000t of asphalt per day.

The concrete plant would typically manufacture approximately 100 to 400 tonnes of concrete per day. There will be numerous days when the Proponent would not be producing and/or despatching any asphalt or pre-mix concrete. As the plants would be mobile and operated on a campaign basis, the plants would be dismantled and taken off site to allow for the other plant to be erected and operated for a particular campaign.

As the plants would essentially be a value adding process utilising an existing product of the quarry, there would be virtually no change to aggregate production rates from the quarry.

2.4.6 Infrastructure

The two plants would utilise existing infrastructure on the Project Site. There would be no additional requirements for water supply, sewerage, communications or fuel storage for the mobile plants.

Electricity would be required to operate the asphalt plant and operate the heated storage tanks. The plant and equipment would require 415V three phase electricity, which would be supplied from an existing 500kVA diesel generator on site. A transportable plant control or operation room would be installed within the plant. The mobile concrete batching plant would be operated solely by diesel-powered generators.

No additional buildings would be required for the operation of either the asphalt or concrete batching plant.

2.5 TRANSPORT OPERATIONS

2.5.1 External Transport Route

All quarry products are transported using road registered trucks from the quarry along Paynes Road for approximately 1.4km where it intersects with the Hume Highway. Product trucks then travel either east or west on the highway depending on product destination. The Proponent would continue to maintain Paynes Road to the satisfaction of Yass Valley Council.

2.5.2 Internal Access

The existing internal road network links in with the roadways constructed around the plant (**Figure 1.2**). Signs would be positioned to separate asphalt/concrete trucks from all other on-site quarry traffic during the various campaign production periods. All asphalt/concrete trucks would be directed via a new loop road to either the elevated hot asphalt storage bin or the batching enclosure.

2.5.3 Vehicle Types

The transportation of hard rock and asphalt products from the Project Site will continue to use truck configurations similar to those currently in use. Trucks utilised for the transportation of material range from single-axle rigid to tri-axle articulated truck-trailer and truck and dog trailer and B-Double configuration resulting in an average load capacity of approximately 32t. Pre-mix concrete would be transported by $6m^3$ to $9m^3$ concrete transit agitators.

Raw materials including bitumen, diesel, and some fine aggregates would be delivered by back loading the semi-tippers, truck and dogs or bulk road tankers that transport the quarry products off site. The flyash and cement would be trucked to site in pneumatic tankers. It is estimated that there would be an average of three raw material deliveries per week during

operation of the mobile plants. The bulk of the aggregates used in asphalt/concrete production would be recovered from nearby stockpiles in the aggregate product stockpile area.

2.5.4 Traffic Levels

Currently, based on an average capacity of 32t, at full production (ie. 200 000tpa), the average truck levels associated with product dispatch would be approximately 36 truck movements per day (ie. 18 loads). Truck dispatches generally occur between 7:00am and 6:00pm with an average of approximately 2 truck loads dispatched per hour. During busy periods, up to six truck loads are despatched hourly. Approximately eight light vehicle movements associated with transportation of site personnel also occur each day.

The project would result in the number of truck dispatches from the quarry increasing to compliment the increased production. Based on an average truck load of 32t, and the proposed maximum production level of 380 000tpa, the average number of truck movements would increase to approximately 68 movements (i.e. 34 loads) per day. Based on a typical day, the majority of products would be transported from site between 7:00am and 6:00pm resulting in an average of approximately three truck loads dispatched per hour.

The Environmental Impact Statement (David Hogg Pty ltd, July 1995) which accompanied the DA96/067B calculated that the maximum eight truck loads per hour were required during peak production times associated with the construction of Bookham bypass. The roads and the intersection were considered adequate to accommodate this level of traffic. The average level of six truck movements per hour is proposed to service the increase in production at Bogo Quarry. The increased production at Bogo Quarry is unlikely to increase the maximum truck movements to accommodate the increased production. Rather, the increased production would be achieved through traffic levels occurring over longer periods.

2.6 HOURS OF OPERATION

The Proponent proposes to operate the asphalt plant and the concrete batching plant within the existing quarry operating hours. The increase in hard rock extraction and processing, plant operation and product despatch would also occur within the existing hours of operation for the existing quarry, namely:

- 7:00am to 10:00pm Monday to Saturday; and
- 8:00am to 10:00pm Sunday (public holidays excluded).

Any maintenance outside of these hours would be inaudible at any non-company owned residence.

2.7 EMPLOYMENT

Currently the quarry has three full time employees overseeing quarry operations. As market demand, and hence production, increases the quarry would require the addition of a full-time staff member and a part-time loading for a General Manager of quarrying operations. Additional contractors and specialised skilled labour would be required to supply services and materials at various stages during the life of the quarry.

Two persons would be employed to operate the proposed asphalt/concrete plants during the periods when each plant is on site.

2.8 PROJECT LIFE AND QUARRY DEVELOPMENT

Based on the predicted quantity of remaining resource (3.9 million tonnes) and the currently approved maximum extraction rate, the remaining life of the quarry would be approximately 20 years, although it is noted the current development consent expires in 2019.

The proposed increase in the maximum production rate to 380 000tpa would reduce the remaining operational life of the quarry to approximately 11 years, although in reality, it is envisaged an operational life of at least 16 years is likely.

2.9 REHABILITATION

2.9.1 Decommissioning and Rehabilitation

The various plants would be decommissioned and removed following the completion of each campaign. The rehabilitation of the plant(s) footprint would ultimately be incorporated into the rehabilitation of the approved quarry.

2.9.2 Objectives

In the short term, the Proponents objective is to undertake site improvements and landscaping, predominantly around the boundaries of the Project Site to provide both visual protection during the operational life of the quarry and long term amenity.

The principal long term objective for rehabilitation of the quarry is the creation of a landform suitable for grazing-related pursuits.

2.9.3 Proposed Rehabilitation Activities

Little rehabilitation has been undertaken by previous operators. However, the Proponent proposes to commence progressively planting native vegetation around sections of the Project Site boundary to form a vegetative screen. Planting will continue to be undertaken in conjunction with the landowners through a rehabilitation and improvements fund created between the Proponent and landowner. It is noted that this fund has been created in addition to the conditional requirements of Development Consent DA 96/067B.

Final site rehabilitation would remain as currently approved, however, rehabilitation would be completed at a sooner date due to the reduction in the operational life of the quarry. In summary, the final site rehabilitation would involve three main elements, namely rehabilitation of:

1. the quarry faces and benches;
2. the floor of the quarry; and
3. stockpile areas outside the extraction area.

Rehabilitation would be undertaken with the reduction in face heights and widening of benches as extraction approaches the approved limits to produce an average gradient of approximately 1:3 V:H. This would be achieved through varying the drill depths prior to blasting of terminal faces to produce the desired gradient. Overburden and soil material would then be placed over the final benches / slope and the area sown to pasture with some tree planting for stock shelter and for landscape and habitat.

The quarry floor would be graded so as to remove steep edges that could present a hazard to stock. As the final quarry floor will be at a lower elevation to the surrounding topography, water may pond to form a stock water supply. Areas that would not be inundated by water would be revegetated in the same manner as the quarry faces and benches.

Any remaining stockpiles and other disturbed areas would be removed from site, the area graded to provide appropriate drainage and ripped before spreading of remaining soil material. An appropriate pasture mix would be sown and selective tree planting undertaken as for the quarry faces and benches.

Depending on the wishes of the landholder, some or all of the sedimentation ponds will be retained as stock dams together with selected internal access roads.

3.0 STATUTORY CONTEXT

3.1 STATE PLANNING INSTRUMENTS

The proposed increase in the production at the quarry would require an Project approval from the Minister of Planning under Part 3A of the *Environmental Planning and Assessment Act* – as the proposed maximum production rate of 380 000tpa exceeds the threshold level in clause 7(1) (a) of Schedule 1 of the *State Environmental Planning Policy* (Major Projects) 2005.

Schedule 1 of State Environmental Planning Policy (Major Projects) 2005 sets out the projects which should be assessed under which Part 3A of the EP & A Act 1979. Within Schedule 1, Group 2 is of relevance to this application and relates to "*mining, petroleum production, extractive industries and related industries".*

(1) Part 7 (1) of the Major Projects SEPP relates specifically to the proposed production increase at Bogo Quarry it states that an extractive industry is considered to be a major project when it:

"Extracts more than 200,000 tonnes of extractive materials per year."

Given the project would involve the extraction of up to approximately 380 000tpa. It is therefore necessary for the application to be assessed under the provisions of Part 3A of the *Environmental Planning and Assessment Act 1979*.

In addition to the above, the following planning provisions have been identified as relating to the project for the continuation of extractive operations. The project will be assessed against the relevant requirements of these instruments as part of the *Environmental Assessment*.

- *SEPP No.33 – Hazardous and Offensive Development;*
- *SEPP Mining, Petroleum, Production and Extractive Industries 2007;*
- *Yass Shire Local Environmental Plan 1985; and*
- *Protection of the Environment Operations Act 1997*.

The project's compliance with these relevant planning provisions is addressed in the following sections.

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) provides definitions for 'hazardous industry', 'hazardous storage establishments', 'offensive industry' and 'offensive storage establishments'. The definitions enable decisions to approve or refuse a development to be based on the merit of a proposal. The consent authority must consider the specifics of the proposal, the location and intensity of the proposed activity to determine whether the proposed development may be classified as 'potentially hazardous' or 'potentially offensive' as defined in the Policy. SEPP 33 may apply to the project and will be considered during the assessment process.

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

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries 2007) sets out a number of policies in relation to the proper management and development of extractive mineral resource industries so as to enable the orderly and economic use of land and to establish appropriate planning controls to ensure that extractive industries are ecologically and sustainably developed and managed. The SEPP provides a definition for 'extractive material' to include sand, gravel, clay, soil, rock and stone and therefore applies to the project. The SEPP sets out a number of matters for consideration in Part 3 against which proposals for extractive industries will be assessed by the consent authority. An assessment of the proposal against this SEPP will be undertaken as part of the assessment process.

3.2 LOCAL PLANNING INSTRUMENTS

Yass Local Environmental Plan 1987

The land in which the quarry is located is zoned *Rural 1(a) (Rural Agriculture Zone)* under the *Yass Valley Shire Local Environmental Plan 1987.* Extractive industries, asphalt and concrete production within this zone are permitted uses with development consent.

4.0 OVERVIEW OF KEY ENVIRONMENTAL ISSUES

4.1 INTRODUCTION

The project application will require the preparation of an *Environmental Assessment* that will assess a range of environmental impacts. In reality, the location of the quarry close to the Hume Highway, the considerable distance to surrounding residences on large land holdings and positive feedback from consultation with the neighbours suggest that no environmental issues could reasonably be referred to as "key" issues. Rather it is considered appropriate that good environmental practice needs to be adopted to manage the operations of the quarry. Each of the following issues will be addressed in the environmental assessment process.

- Hydrology.
- Soils.
- Ecology.
- Air Quality.
- Noise and Vibration.
- Visibility.
- Transport.
- Pre-European History.
- Bush Fire.

A Traffic Consultant has undertaken a preliminary assessment and has provided information related to the likely interaction between Hume Highway traffic and traffic travelling to and from Bogo Quarry and the need for any improvements at the intersection between the Hume Highway and Paynes Road.

4.2 HYDROLOGY

Bogo Quarry is located near the headwaters of various drainage lines within the Stony Creek Catchment (**Figure 4.1**). The southern and southeastern side of the Project Site drains to the south towards a small tributary of Stony Creek whilst the northern side of the Project Site drains to the north towards Stony Creek. Stony Creek and the tributary join about 0.5km west of the Project Site. Drainage from the western side of the hill within the Project Site drains down the hillslope directly towards the roadside drainage network adjoining the Hume Highway and then into Stony Creek. Each of the drainage lines flow for short periods during and immediately following intense rainfall events.

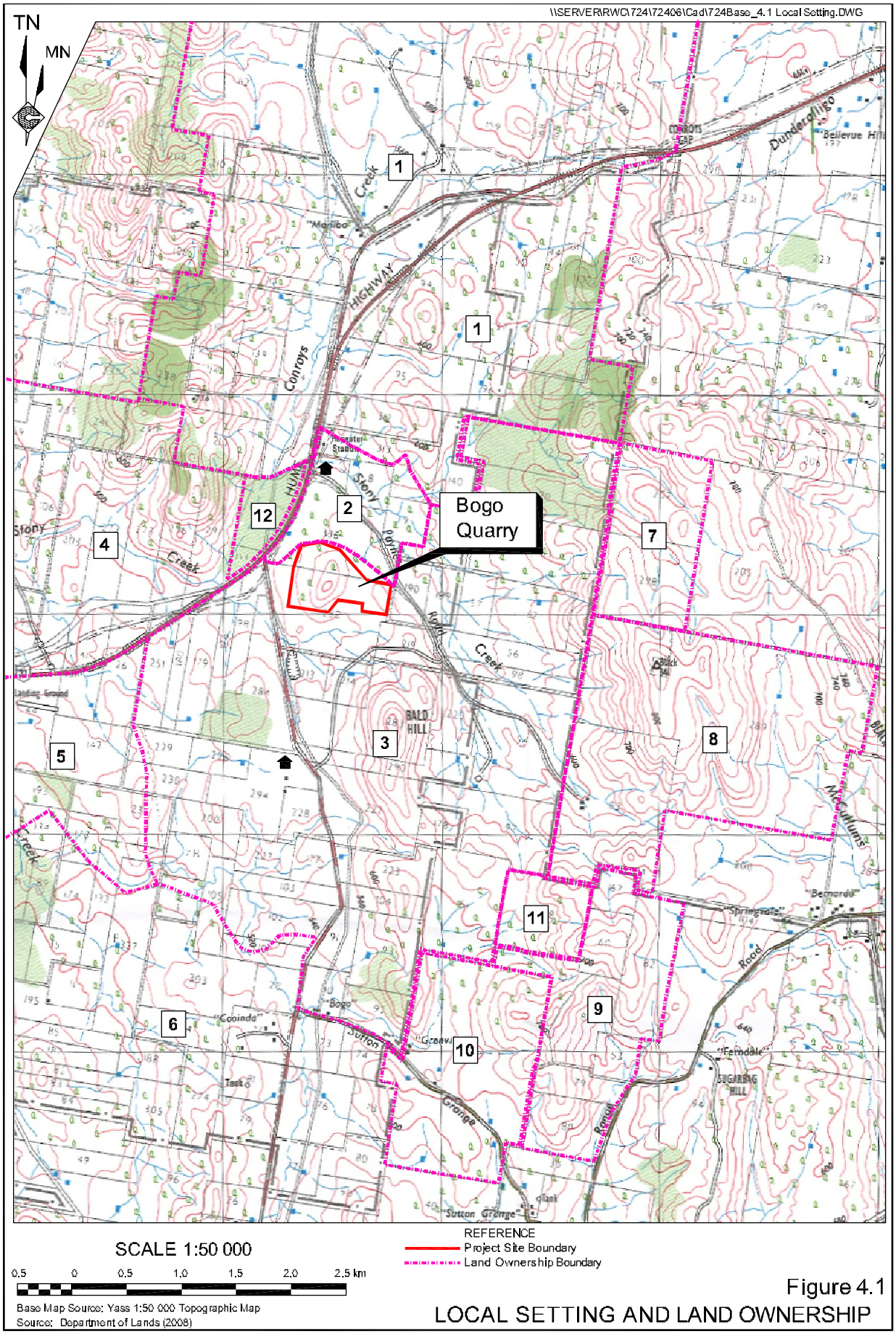


Figure 4.1
LOCAL SETTING AND LAND OWNERSHIP

Surface water runoff within exposed areas of the Project Site is diverted to a number of on-site settlement dams. **Figure 1.2** shows the location of the existing settlement dams on the Project Site. The water from the settlement dams is used to suppress dust generation from the internal road network and product stockpiles and during the crushing and screening activities.

Water quality monitoring undertaken for three of the on-site settlement dams indicated that water quality was slightly alkaline pH (7.79 to 8.12) and fresh with electrical conductivities of between 181µS/cm and 195µS/cm. Oil and grease was detected in one dam but was found to be less than 5mg/L, well below accepted levels.

4.2.1 Preliminary Impact Assessment of Proposal

The hard rock production increase would not impact on surface water or ground water that has not been assessed by the original EIS, the proposal would remain within the same footprint that was originally assessed.

Given the proposed use of the existing mobile plant pad and sediment control network, the proposed use of the Project Site for the mobile plants would not result in any additional adverse effects on off-site water quality. Additionally, the existing water settlement dams would provide sufficient water resources to accommodate for the water requirements for the mobile plants. Measures to avoid and minimise hydrological impacts will be outlined in the *Environmental Assessment*.

4.3 SOILS

Topsoil is removed by an excavator from the advancing quarry face and is stockpiled. The previous operator sold the topsoil and did not stockpile the topsoil, as required. Since the Proponent acquired the quarry, the topsoil has been kept on site and used in the bunding that surrounds the extraction area. This topsoil is designated to be used in the rehabilitation of the quarry when extraction operations cease.

4.3.1 Preliminary Impact Assessment of Proposal

The increase in hard rock production would not impact on the Project Site's soils. Soil will be managed using existing practices. The retention of topsoil on the site in bunds that will be used in the rehabilitation of the site and the implementation of sediment control measures would ensure the continued effective management of soils on the Project Site. Measures to avoid and minimise soil impacts will be outlined in the *Environmental Assessment*.

4.3.2 Ecology

The approved quarry area which has not yet been disturbed by excavation activities has been extensively disturbed by previous agricultural activities. The native trees in this area have been removed and the groundcover replaced by exotic herbaceous plants and grasses. There is no evidence of natural regeneration occurring within the Project Site.

Due to past and present agricultural activities within the Project Site and on adjacent land, it is considered that the habitat value of the site is low and is not considered as significant habitat for any threatened or endangered fauna. There are no natural aquatic habitats on the Project Site and the Project Site does not constitute any part of a wildlife corridor.

4.3.3 Preliminary Impact Assessment of Proposal

Due to the low biodiversity value of the Project Site, it is considered that the project to increase production will have no adverse impacts on the ecological value of the remaining vegetated areas of the Project Site or surrounding areas. The placement and operation of the mobile plants would be in an existing disturbed area within the Project Site, it is considered that the proposal would not have any adverse impact on native fauna of the area. The tree plantings that are committed to be installed along the Project Site boundary will have a long term benefit for native fauna within the area. Measures to avoid and minimise ecological impacts will be outlined in sections outlining the management of dust and sediment control in the *Environmental Assessment*.

5.0 AIR QUALITY

The air quality in the vicinity of the Project Site is typical of a rural area where the main air contaminant is dust. The principal sources of dust are from agricultural activities and existing quarrying activities. Traffic movements on the Hume Highway are also expected to affect the existing air quality within the Project Site and surrounds.

It is noted that the existing stockpiling and processing areas are afforded a degree of protection from south-southeasterly and westerly winds by Bald Hill (700m AHD) and the hill (600m AHD) within the Project Site. Dust-related issues have not been an issue of concern to date.

Atmospheric dust would be generated during short term civil works during site establishment for the mobile plants and to a lesser extent, during the delivery of raw materials, despatch of products, from exposed aggregate stockpiles, and hardstand areas. Other sources of air contaminants would include exhaust fumes from the transit mixers, and asphalt product delivery trucks front-end loader, trucks delivering raw materials and staff vehicles.

5.1.1 Preliminary Impact Assessment of Proposal

Given the topographic screening of the Project Site and the implementation of all existing and proposed safeguards, it is considered there would be no significant effect on air quality. Also, given that the Project Site is isolated from nearby residents, it is considered that there would be no adverse levels of dust deposition from the Project Site at nearby residences. Measures to avoid and minimise air quality impacts will be outlined in the *Environmental Assessment*.

5.2 NOISE AND VIBRATION

A noise and vibration assessment for the existing quarry operations was undertaken by David Hogg Pty Ltd in 1995 and 1996 for the approved quarry operations. Measurements taken for that assessment indicated that background noise levels at surrounding residences ranged between 41dB(A) during the afternoon and 38dB(A) during the evening. It is noted that background noise levels in the area are likely to have increased since this assessment as a result of the greater levels of traffic on the Hume Highway.

The conclusions obtained from the assessment undertaken by David Hogg Pty Ltd for residences located within 3km of the quarry were as follows.

- Under most conditions, the quarry noise was inaudible at the residences surrounding the quarry.
- Under summer conditions, the quarry does not significantly affect measured intrusive noise levels at residences surrounding the quarry because of the noise resulting from other continuous sources such as traffic from the Hume Highway, stock and insects. This was supported at one residence by theoretical calculations of noise attenuation.
- Under winter night-time conditions, the quarry was audible outdoors at some residences but not at a disturbing level.

To date, there have been no complaints to Council, DECC (EPA) or to the quarry operator regarding on-site operations or traffic travelling to and from the Hume Highway.

Given the isolation of the quarry from any nearby residences, it is considered unlikely that any of the residents would experience elevated noise levels in excess of 35dB(A). Glenella would continue maintaining Paynes Road to the satisfaction of Council this would mitigate any excessive noise levels that would be attributed to traffic levels. Measures to avoid and minimise noise and vibration impacts will be outlined in the *Environmental Assessment*.

5.3 LAND OWNERSHIP AND RESIDENCES

Land Ownership

Table 5.1 and **Figure 4.1** shows the land ownership surrounding the Bogo Quarry. The quarry is located on land leased from the Walker family who own a substantial 1 516.8ha of the surrounding land.

Table 5.1
Land Ownership Surrounding Bogo Quarry

Reference No*	Owner
1	Marilba Properties Pty Ltd
2	M. & H. Van Gelder
3	Bogo Pty Ltd
4	Refax Pty Limited
5	R. Julian
6	R. Walker
7	J. & K. Payne
8	A. & T. Walker
9	D. Payne
10	M. & R. Lees
11	M. Lees
12	Certificate of Title has not been issued
* See Figure 3.3	

Land Zoning

The land in which the quarry is located is zoned *Rural 1(a) (Rural Agriculture Zone) under the Yass Local Environmental Plan 1987.* Extractive industries, asphalt and concrete production are permitted with development consent within this zone.

Land Uses and Residences

The land adjacent to the Project Site is currently used for agriculture including grazing for cattle and sheep. However, the most dominant land use near the Bogo Quarry is the Hume Highway, the major interstate route between Sydney and Melbourne. Additionally, it is noted that the recently approved Conroy's Gap Wind Farm lies approximately 2.2km to the east of Bogo Quarry.

The closest residence to Bogo Quarry is located approximately 1.1km to the north near the intersection of Paynes Road and the Hume Highway. The residence is set back approximately 85m from the Hume Highway and an approximately equal distance from Paynes Road. The closest residence to the south of the quarry is 1.8km located near the Burrinjuck Dam tourist road.

5.4 VISIBILITY

The location of the proposed plants is effectively shielded from the Hume Highway by intervening topography and vegetation. It is accepted that some distant views may be possible, however, considering that motorists on the Hume Highway would generally be travelling at approximately 110km/hr, their viewing times would be relatively short.

Additionally, Bald Hill would also shield the location of the proposed asphalt plant from views to the south on Burrinjuck Dam tourist road, however, as for the Hume Highway, some limited views may be possible.

5.4.1 Preliminary Impact Assessment of Proposal

Considering the existing level of screening, it is expected that the proposed plants would not result in any significant impacts upon the visual amenity of the area. It is considered that no other specific safeguards are required for this proposal.

5.5 TRANSPORTATION

5.5.1 Existing Road Network, Traffic Types and Levels

All quarry products are transported using road registered trucks from the quarry along Paynes Road for approximately 1.4km where it intersects with the Hume Highway. Product trucks then travel either east or west on the highway depending on product destination.

In the area near the Project Site, the Hume Highway has separated carriageways providing for two lanes of through traffic in each direction.

The existing configuration of the Hume Highway / Paynes Road intersection was designed and constructed by the RTA with consideration that quarry product trucks used the intersection. At the Paynes Road intersection, the RTA has provided:

- a left turn deceleration lane, 135m long (including taper) for the left turn into Paynes Road;
- a right turn bay 200m long (including taper) for the right turn into Paynes Road;
- a left turn acceleration lane 80m long (including taper) in southbound departure lanes of the Highway for left turn out of Paynes Road. In addition, there is a 3.0m shoulder run off area for an extended distance, which could be used in an emergency; and
- The separation distance between the northbound and southbound carriageways is 12.4m, as measured between the holding lines although a large truck 19.0m long can stand in the centre section on an angle, clear of the through travel lanes if it occupies part of the right turn bay. The distance between the through lanes in each direction is 20.4m (as measured between the edges of lanes).

The sight distance for vehicles entering the Hume Highway from Paynes Road is estimated to be in excess of 400m to the north and 300m to the south.

The existing transportation of quarry products from Bogo Quarry is undertaken by range configurations of truck and trailers, and truck and dog-trailers. Based on an average load capacity of 32t, at full production (ie. 200 000tpa), the average truck levels associated with product despatch would be approximately 36 truck movements (ie. 18 loads) per day. Truck dispatches generally occur between 7:00am and 6:00pm with approximately two to four truck loads dispatched per hour. Up to approximately eight light vehicle movements associated with transportation of site personnel also occur each day.

The existing configuration of the Hume Highway / Paynes Road intersection was designed and constructed by the RTA to meet traffic requirements to accommodate for 8 unladen trucks into and 8 laden trucks per hour out of the quarry.

The Proponent recognises that minor improvements are needed within the shoulder area for the left turn from the Hume Highway into Paynes Road.

5.5.2 Preliminary Impact Assessment of Proposal

The Applicant would continue to maintain its strict policies on driver conduct and truck maintenance for all quarry products and the asphalt and concrete trucks.

The combined traffic from the quarry and the mobile plants would result in a an average of 68 truck movements (34 loads) per day or an average of 8 truck movements (4 loads) per hour which is well below the traffic levels assessed for the existing approved operations.

5.6 PRE-EUROPEAN HISTORY

Previous archaeological studies have located Aboriginal Heritage items on the Project Site The limit of approved extraction has been modified to exclude all identified artefacts and have no impacts are likely on the Aboriginal Heritage of the area.

5.6.1 Preliminary Impact Assessment of Proposal

Given the operational safeguards and mitigation measures that would be placed on the proposal, it is considered that the proposal would not result in a significant impact on Pre-European heritage.

5.7 BUSH FIRE

It is not expected that the increase in hard rock production or operation of the asphalt plant and the concrete batching plant would increase the fire hazard of the area. Accessibility to the dam would be maintained to the Rural Fire Service if required.

6.0 CONCLUSION

The preliminary environmental assessment of the Bogo Quarry has established that there are no key issues that require specific detailed assessments, particularly given the quarry's location and lack of environmental complaints to date. It is considered the quarry in its location can easily sustain an increase in production and the periodic placement and operation of mobile asphalt and concrete batching plants without any adverse environmental impacts.

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Appendix 1

Transport & Urban Planning Letter, Dated 11 April 2008

(No. of pages excluding this page = 4)

TRANSPORT & URBAN PLANNING
TRAFFIC ENGINEERING - TRANSPORT PLANNING -
ROAD SAFETY & PROJECT MANAGEMENT CONSULTANTS

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11 April 2008

Rob Corkery
R.W. Corkery & Co Pty Ltd
1st Floor,
12 Dangar Road,
Brooklyn NSW 2083

Dear Rob,

Re: Hume Highway Intersection with Paynes Road, Bookham NSW

I refer to your request for Transport and Urban Planning to inspect the above intersection and provide advice regarding the intersection's configuration regarding current RTA standards.

Background

The intersection is currently used by Bogo Quarry, which is located some 1.5km from the Hume Highway. The quarry has operated at this site since 1981 and at one time was operated by the RTA. More recently it supplied materials to the RTA for some of its major works which I understand was examined as part of the environmental impact assessment for the RTA project.

Under the existing development consent, production and transportation is approved for 200,000 tonnes per year which results in product despatch of 18 loads per day / 2 loads per hour on an average day.

The 1995 EIS for the quarry noted that using the Hume Highway intersection would not normally exceed 8 trucks per hour unless supplying large quantities of material such as a highway reconstruction.

The existing configuration of the Hume Highway / Paynes Road intersection was designed and constructed by the RTA since 1995 and the RTA were aware that quarry product trucks used the intersection when the intersection was designed and later constructed by the Authority.

TRANSPORT & URBAN PLANNING

Intersection Configuration

The Hume Highway has separated carriageways providing for 2 lanes of through traffic in each direction.

At the Paynes Road intersection, the RTA has provided:

- A left turn deceleration lane, 135 metres long (including taper) for the left turn into Paynes Road;
- A right turn bay 200 metres long (including taper) for the right turn into Paynes Road;
- A left turn acceleration lane 80 metres long (including taper) in southbound departure lanes of the Highway for left turn out of Paynes Road. In addition, there is a 3.0 metre shoulder run off area for an extended distance, which could be used in an emergency.
- The separation distance between the northbound and southbound carriageways is 12.4 metres, as measured between the holding lines although a large truck 19.0 metres long can stand in the centre section on an angle, clear of the through travel lanes if it occupies part of the right turn bay. The distance between the through lanes in each direction is 20.4 metres (as measured between the edge of lanes).

The sight distance for vehicles entering the Hume Highway from Paynes Road is estimated to be in excess of 400 metres to the north and 300 metres to the south.

Quarry trucks which have a much higher seating than cars would have better visibility and increased sight distance, particularly to the south.

In terms of the intersections configuration's compliance to current standards, my conclusions are as follows:

- The length of the right turn lane (200 metres long) in the Highway complies to RTA's Road Design Standards for a design speed of 110km/h for a comfortable rate of deceleration;
- The left turn deceleration lane in the Highway (135 metres long) for the left turn into Paynes Road complies with RTA Road Design Standard for a design speed of 110km/h for the desirable maximum rate of deceleration. It is noted that this left turn lane could not be extended due to an existing bridge structure immediately adjacent the start of the lane and this would have been a factor considered in the original design of the intersection.

- The acceleration lane provided for the left movement out of Paynes Road (80 metres) does not comply with RTA standards. However, given the small volumes of vehicles (cars and trucks) that undertake the left turn, it would be expected that vehicles turning left would wait for an appropriate gap in southbound traffic flows to turn left, so reliance on an acceleration lane is not required.

- Based on the traffic volumes observed at the site inspection and an examination of the 2006 hourly volumes at the Hume Highway's permanent counting stations 94.002E and W and 94.467N and S, it is considered that frequent gaps would regularly occur in the southbound direction for vehicles including trucks to safely turn left without the need for an acceleration lane for an extended distance.

- Similarly, trucks turning right out of Paynes Road wait for a gap in both directions of the Hume Highway before undertaking the right turn. During the site inspection, I noted that there were frequent large gaps in both directions to safely allow the trucks to turn right, without the need to hold in the centre section of the Highway.

- While I have not examined any accident data for the intersection, there was no evidence of vehicle skid marks, broken glass or other material that would indicate that the current traffic arrangements at the intersection are not operating in a safe manner.

- The intersection is currently used by relatively low traffic volumes turning into and out of Paynes Road and will continue to do so, if the quarry proposal is approved. The quarry proposal will increase the number of trucks using the intersection to 3 loads per hour (i.e. 6 truck movements with return trips) on an average day. While the number of truck movements per hour on busy days would be higher than this average figure, the additional movements would not appreciably alter the existing operating conditions at the intersection in terms of increased delay for the left and right turning movements out of Paynes Road that could result in risky behaviour and a decrease in potential road safety.

TRANSPORT & URBAN PLANNING

Conclusion

The current intersection configuration was designed by the RTA to meet the existing and future traffic requirements of the intersection. The quarry proposal will increase the number of trucks using the intersection. However, the total truck numbers will still be small in real terms and, in my opinion, will not change the traffic requirements at the intersection.

Yours faithfully

Terry Lawrence
Director and
Road Safety Auditor

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